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Easier to Read BCD436HP/BCD536HP Digital Scanner Manual

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See also the Sentinel BCD436/536HP Software Manual

Last Updated October 15, 2014

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Intro/Review

Contents

Uniden has combined the new features of the HP-1 with traditional hand-held and base/mobile styles of the XT series scanners and come up with the new BCD436HP hand-held, and BCD536HP base/mobile scanners. Just enter your zip/postal code, select your service types, and the scanner will load the channels for you with a range setting to filter distance.

Support for P25 Phase II and P25 X-2 TDMA is finally here. The BCD536HP will have a Wi-Fi dongle and a companion Siren App that allows "connectivity to your smart phone or tablet from anywhere in your house, your car, or the world". Recording, playback, and instant replay for scan, search, Close Call, and Tone-Out modes are new. We now have quick keys for Favorites Lists, Systems, Sites, and Departments. You can tag any channel, system, site, etc. with up to 64 characters (though not all viewable in the display). Number tags for Favorites Lists are also included. Priority DND, first appearing in the BC125AT, is now included. Encrypted IDs are now muted when received too. We also have a printed manual included with the scanners that will be updated online. Long overdue is a per channel delay setting.

As with the HP-1, you can scan up to 256 Favorites Lists (but there are only 100 Quick Keys-available only once for each Favorites List) along with or just the database. The complete Radio Reference Database for the US and Canada is included on a 4 GB micro SD card with locations programmed so you don't need a GPS unit to scan by location. One of the best features Uniden has come out with is being able to scan by services types, i.e. police, fire, air, etc. Like the HP-1, we can hold on any channel, department, system, and now even a site. Discovery mode has also been brought over from the HP-1. Similar to auto store, you can also record transmissions, log information, and compare hits to the database. The included Sentinel software has the same look and feel as the old HP-1 software.

A lot of features have changed and they've moved some of the old options around in the menus if you are used to the older T and XT models. The SQ/Vol knobs have been reversed with the scroll knob on the base model and the scan/search button is gone. The alert LED on the the base model (BCD536HP) has replaced the color selection for alerts and is a glowing ring around the function knob. The alert LED on the hand-held model is below the keypad on the left. The addition of Favorites Lists has reduced the number of quick keys we have to press, but increased the number we

have to remember. The the scanners still scans in System order, not Favorites List order as you would think. Everything is now "Avoided" like the HP-1instead of locked-out.

The display on the hand-held is much bigger to show more information but some of the characters actually got smaller. Only one color now; sort of a dull, bluish white. Although both displays now have the same amount of space, the BCD536HP doesn't show the volume offset or number tag for the channel unless in Function mode. And, the List name is only viewable in Scan mode. The BCD436HP will show the Unit ID *or* channel Service Type but not both in the display. Channel "Groups" have been replaced with "Departments". The P25 Adjust Mode and P25 Adjust Level have new names, have been improved, and are no longer in a hidden menu. Close Call Only and Fire Tone-Out can now be assigned to a search quick key. Weather alerts are automatically recorded for review. Tone-Out Search mode does not automatically flash the "Save found Tones?" prompt but requires you to press E/yes to see it first.

A lot of things have also been removed. There is no adjustment for AGC, just on or off. Copy/paste channel is gone. The non-radio location-based GPS features, PIO and Dangerous Road/Dangerous Crossing, have been removed as well as Review Location and GPS Display modes. Priority Plus, EDACS SCAT System support, the P25 LP filter, cloning, the trunking activity indicators, auto search and store (in favor of Discovery Modes), and the Service Searches have been removed. CC-Only, quick keys, startup keys, and number tags for the custom searches are gone. Close Call Autostore, override, and tone/code search have been removed. Function lock is also gone. The km/m setting for a GPS option has been removed probably because the RR database is use for location information and uses "miles". Private Systems and Key-Safe mode have disappeared as well.

Some of the quirks. You can't charge the batteries with the radio on. You have to turn it off or, (recommended), charge them in an external charger. There is no "0" charge time setting for those of us who never charge the batteries in the scanner. The alert LED and ring only stay on for 5 seconds. The internal battery used for the clock will go dead in about 7-10 days if you don't use the scanner and it will charge only when the scanner is powered on.

Search with Scan is now treated like the database or a Favorites List so it has to enabled the same way in 'Select Lists to Monitor', but it's also treated like a System so it has to be enabled with another setting (??). Then each Custom Search *department* or the 'Hits with Scan' *department* also has to be enabled. The 'Hits with Scan' department isn't accessible in the Close Call menu so you have to hold on the 'Search with Scan' system in scan mode, then hold on the 'Close Call Hits' department (why it has a different name in scan mode is also a mystery), and then hold on a channel to scroll to each of the channels.

Analyze Mode, similar to the HP-1, will be out (Soon??) and will have a trunked system analyzer that includes a reception status graph, an activity chart and log, LCN activity monitor, and talkgroup converter. It should also have a LCN channel finder, a bandscope, a frequency power plot, and a raw data output.

There are better antennas out there to use than the one that comes with the scanner. The stock whip isn't fabulous. RS has the Center-Loaded Telescoping Whip for $15 - better for VHF/UHF. The 800MHz Scanner Antenna for $25 - 100% better for 700+ MHz. You may be able to find others on the web but RS is convenient so you can buy it and take it back in the same day if you don't like it. Read the reviews for each at the site. They also have the right-angle adapter for the base models ($6).

Paul Opitz (Upman), at Uniden, was generous with working samples to help me write this manual, and, thanks to the many people who have posted their valuable insight on the Radio Reference forums and in the beta test Yahoo groups.

An overview of the features can also be viewed at my Trunking Radio Comparison Chart page online.

It is also recommended that you download and install the latest firmware update for the scanners using the Sentinel software if you don't have it.

I hereby absolve myself from anything that happens to anyone or the scanner as a result of the information you will be reading.

I have tried the best I can to make sure everything is accurate here but if I missed a step or you see something that's obviously wrong, please email me at marksscanners at yahoo.com.

Enjoy.

Main Features

Contents

No Programming Required - Factory programmed micro SD card for all known radio systems in the US and Canada. The database is updatable with the Sentinel software and Uniden updates the main database weekly.

Scan by Location - Allows you to set location(s) by zip/postal code or GPS coordinates for instant reception. The Auto-locate feature will find your location based on local trunked systems if you don't know your zip code.

Favorites Scan - Allows you to organize your Systems into Favorites Lists. The scanner can scan multiple Favorites Lists and the Full Database at the same time.

4 GB micro SD card - For storing Favorites Lists, Profiles, all of your settings, Discovery sessions, and recording sessions.

Location Based Scanning - Connect to a GPS receiver (not included) for precise system selection and continuing reselection when you travel. The scanner can automatically Avoid and Unavoid Trunked Sites and Departments in Systems based on your current location as provided by an external GPS unit.

Range Control - Lets you set how far out from your current location the scanner will search for Channels in Favorites Lists and the Database. Location precision for Departments and Sites that allows you to define a location and range using rectangles instead just of a single circle.

Wi-Fi Dongle (BCD536HP Only) – With a (future) Wi-Fi app to connect your iPad/Android/Tablet/computer to remotely control the scanner.

Trunk Tracker V Operation - Scans APCO 25 Phase 1 and Phase 2, X2-TDMA, Motorola, EDACS, and LTR trunked systems, as well as conventional analog and P25 digital channels.

APCO 25 Phase I and Phase II Support - Allows you to receive transmissions with these decoding protocols.

Multi-Site Trunking - Lets you program the scanner to share trunked system IDs across multiple sites without duplicating IDs.

P25 One-Frequency Trunking - The scanner can follow individual talk groups on P25 single-frequency systems that use both NAC and TGID's for squelch control and user identification.

Control Channel Only Scanning - With Motorola trunking frequencies, you do not have to program voice channel frequencies.

Instant Replay - Plays back up to 240 seconds (4 minutes) of the most recent transmissions.

Audio Recording - Capture transmissions for later playback.

Encryption Muting - APCO P25 encrypted voice is muted automatically.

Custom Alerts - You can program your scanner to alert when you receive, a Channel or Unit ID, a Close Call hit, an ID is transmitted with an Emergency Alert, or a Tone-Out hit. For each alert in the scanner, you can select from 9 different tone patterns, 15 volume settings, 7 LED colors, and 3 flash patterns.

Multicolor LED Alert - The alert LED with 7 colors, Blue, Red, Magenta, Green, Cyan, Yellow, or White, can be used with your Custom Alerts.

Trunking Discovery - Monitors system traffic on a trunked radio system to find unknown IDs and can automatically record audio from and log new channels for later review and identification.

Conventional Discovery - Searches a range of frequencies to find unknown frequencies and can automatically record audio from and log new channels for later review and identification.

Scan by Service Types – Scan your channels by Service Type i.e. Fire, Police, Railroad, etc.

Analyze Mode - Similar to the HP-1 will have a trunked system analyzer that includes a reception status graph, an activity chart and log, LCN activity monitor, and talkgroup converter. It should also have a LCN channel finder, a bandscope, a frequency power plot, and a raw data output.

Scan Speed – 85 channels per second.

Search Speed – 80 steps/sec. except for 5 kHz steps. 250 step/sec. for 5 kHz steps.

Multi-Level Display and Keypad light - Makes the display and keypad easy to see in dim light with three light levels.

Temporary or Permanent Avoid - For Systems, Sites, Departments, Channels, Search Frequencies, Close Call hits, and Search with Scan Departments.

System/Channel Number Tagging - Number tags allow you to quickly navigate to a specific Favorites List, System, or Channel.

Start-up Configuration - You can program each of your Favorites Lists with a Startup Key (0-9) so that when you power up the scanner and press the key number, just those Favorites Lists assigned to the key will be enabled for scan.

Close Call© RF Capture Technology - Lets you set the scanner so it detects and provides information about *nearby* radio transmissions. Close Call Do-not-Disturb checks for Close Call activity in between channel reception so active channels are not interrupted.

Broadcast Screen - Allows the scanner to ignore hits on known broadcast frequencies including pager frequencies in search and Close Call modes. You can also program up to 10 custom frequency ranges that the scanner will ignore.

Fire Tone-Out Standby/Tone Search - Lets you set the scanner to alert you if a two-tone sequential page is transmitted. You can set up to 32 Tone-Outs. The scanner will also search and display unknown tones.

PC Programming – Use the Sentinel software to manage your scanners Profiles, Favorites Lists, Databases, and firmware updates.

Analog and Digital AGC - Helps automatically balance the volume level between different radio systems.

Priority/Priority DND Scan - Priority channels let you keep track of activity on your most important channels while monitoring other channels for transmissions. Priority DND checks priority channels only between transmissions.

Priority ID Scan - Allows you to set priority to talkgroup IDs.

Intermediate Frequency Exchange - Changes the IF used for a selected channel/frequency to help avoid image and other mixer-product interference on a frequency.

Individual Channel Volume Offset - Allows you to adjust the volume offset for each Favorites List channel.

Configurable Band Defaults - Allows you to set the step (5, 6.25, 7.5, 8.33, 10, 12.5,15, 20, 25, 50 or 100 kHz) and modulation (AM, FM, NFM, WFM, or FMB) for 31 different bands.

Repeater Find - Allows the scanner to try to switch to the repeater frequency if an input frequency is found.

Adjustable Scan/Search Delay/Resume - Set a delay up to 30 seconds or a forced resume up to 10 seconds for each channel or search.

Data Naming - Allows you to name each Favorites List, System, Site, Department, Channel, ID, Location, Custom Search, and SAME group, using up to 64 characters.

Duplicate Input Alert - Alerts you if you try to enter a duplicate name or frequency already stored in the scanner.

Quick Keys - You can assign up to 100 Quick Keys for each of your Favorites Lists, Systems, and Departments or Sites.

10 Custom Searches - Lets you program up to 10 custom search ranges.

Search Avoids - You can temporarily Avoid up to 250 frequencies and permanently Avoid up to 250 frequencies in any Search Mode or Close Call Mode.

Search with Scan Operation - Lets you include Custom Search ranges during scan operation.

3 Search Keys - You can assign 3 of the number keys to start a Custom Search, Close Call, or Tone-Out Search.

Quick Search - Allows you to start searching at the displayed frequency, or enter a frequency and start searching.

SAME Weather Alert/Priority - Lets your scanner alert you when a SAME weather alert is transmitted on a NOAA weather channel. You can also set a weather channel as a priority channel.

Built-in Battery Charger (BCD436HP only) - Allows you to charge the batteries in the scanner from any USB port with the scanner off.

DIN-E and ISO Vehicle Mountable (BCD536HP Only) - Using the optional DIN-E sleeve or a standard ISO technique, the scanner can be easily mounted in most vehicles.

Understanding CTCSS/DCS/NAC

Contents

Continuous Tone Coded Squelch System (CTCSS) and Digital Coded Squelch (DCS) are two methods used to prevent interference by other radio communications. Your scanner can receive transmissions that use these codes (or more commonly referred to as tone codes).

CTCSS and DCS systems all use some form of coded squelch. Coded squelch techniques involve the transmission of a special 'code' signal along with the audio of a radio transmission. A receiver with coded squelch only activates when the received signal has the correct 'code'. This lets many users share a single frequency, and decreases interference caused by distant transmitters on the same channel. In all major metropolitan areas of the United States, every available radio channel is assigned to more than one user.

Public safety radio systems on the same frequency are usually set up at a distance of 40 miles apart, or more. This means that you may hear transmissions from a distant system when your local system is not transmitting. By programming the CTCSS tone for a local channel the scanner will not stop on transmissions from the distant system. With few exceptions, such as the VHF Aircraft and Marine bands, almost every other VHF or UHF radio system uses some form of coded squelch. By far, CTCSS is the most popular mode among non-trunked systems.

NAC, similar to CTCSS/DCS, has a 3 digit hexadecimal code that is broadcast along with the digital signal being transmitted. See also the Appendix for a chart.

Understanding Trunking

Contents

Trunking systems let a large group of 2-way radio users (or even different groups of 2-way radio users) efficiently use a *set* of frequencies. Instead of selecting a specific frequency for a transmission, the user's radio selects a programmed trunking bank in the system when that user presses their PTT (push to talk) button. The trunking system automatically transmits the call on the first available frequency, and also sends (on a different frequency called a Data or Control channel) a code that uniquely identifies that transmission as a talkgroup ID (or just ID.) So when you are trunktracking a system, you are listening to active IDs transmitting in the system (each using the first available frequency in the system.) Trunking systems in general allocate and use fewer frequencies among many different users.

Since the trunking system might send a call and its response on different frequencies, it is difficult to listen to trunked communications using a conventional scanner. These scanners let you monitor the control channel frequency so you can hear calls and responses for users and more easily "follow" conversations than with a conventional scanner.

The scanners follow these types of systems:

Motorola Type I
Motorola Type II
Motorola Type IIi Hybrid
Motorola Type II Smartnet
Motorola Type II Smartzone
Motorola Type II Smartzone Omnilink Motorola Type II VOC

EDACS Standard (Wide)
EDACS Narrowband (Narrow)
EDACS Networked (Wide/Narrow) EDACS ESK
LTR Standard
P25 Standard
P25 X2-TDMA
P25 Phase I and Phase II

When you program Motorola/P25 and EDACS system frequencies into the scanner, one frequency is used as the control (or data) channel, and the rest are voice frequencies shared by all the users. There may be 3 or 4 frequencies assigned as (primary or alternate) control channels but only one control channel will be active at a time. These scanners will allow you to program just Motorola/P25 control channels into the trunking system and the voice channels will automatically be found (but not programmed). EDACS systems need all the frequencies for the system programmed *and* in the correct LCN (Logical Channel Number) order.

Motorola systems are limited to a maximum of 28 frequencies per system or site. Ericsson EDACS systems are limited to 25 frequencies per system or site.

Motorola and EDACS systems can be either analog, digital, or mixed (digital and analog talkgroups). Mixed Motorola systems should be programmed as Motorola systems and not P25 digital systems. That way the channel options will allow you to select if it is digital or analog.

LTR systems work a little differently. LTR systems typically do not have a dedicated control channel. This type of system encodes all trunking information as digital subaudible data that accompanies each transmission. The frequencies also have to be in LCN (Logical Channel Number) order or the correct 'slot' for the system to trunktrack properly. Each repeater has its own controller, and all of these controllers are synchronized together. Even though each controller monitors its own channel, one of the channel controllers is assigned to be a master that all controllers report to. Each of these controllers sends out a data burst approximately every 10 seconds so that the subscriber units know that the system is there. This data burst is not sent at the same time by all the channels, but happens randomly throughout all the system channels. LTR systems are limited to 20 frequencies per system.

Trunkscanning is basically scanning IDs that are programmed into ID locations (same concept as frequencies into channels.) You can then trunkscan just the programmed IDs. Trunktracking is searching for *all* IDs in a system (same concept as searching for frequencies in a band).

Understanding Multi-Site Trunking

Some Motorola and EDACS systems covering a very large geographic area use multiple antenna sites that each operate on different frequencies and use the same talkgroup IDs for traffic. Each site will have its own set of trunking frequencies and is monitored like a single system. Each site can have its own quick key, so you can turn each individual site on or off while you scan. Program your talkgroups into departments within that system and all talkgroups in the system are available to every site so they don't have to be reprogrammed for each site. Since all sites share all the talkgroups within the system, multi-site trunking is much more efficient than programming each site as a separate system.

Understanding IDs

IDs are what you see instead of frequencies when you monitor a trunking system. See also Entering IDs.

Motorola IDs come in two formats: Type I and Type II. Each format displays and uses talk group IDs in slightly different ways. Type I/II hybrid systems use both fleet-subfleet and 5-digit formats for talk group IDs.

Type I IDs are in the format BFF-SS where B is the block, FF is the fleet, and SS is the sub-fleet. Type I systems are usually organized with different IDs assigned to different fleets. For example, a valid fleet/subfleet ID identifying all detectives within a police department might be 000-12, where 000 identifies all police IDs and 12 identifies the Detective division. To properly trunk a Type I system, you have to program the fleet map for the system.

Type II IDs are identified by a 5-digit number.

EDACS IDs come in two formats: AFS and Decimal.

AFS IDs are in the form AA-FFS where AA is the agency, FF is the fleet, and S is the sub-fleet. EDACS systems are organized with different IDs assigned to different fleets and agencies. For example, a valid agency/fleet/subfleet ID identifying all detectives within a police department in an agency might be 06-101, where 06 identifies the agency (Police), 10 identifies the Police division (East side), and 1 identifies the Detective division.

Decimal IDs are shown as a decimal number from 0 to 2047.

You can find a chart showing Decimal and AFS IDs here: Conversion Chart.

I-Call IDs (or Private IDs) (Motorola/EDACS only) are direct unit-to-unit transmissions that are not heard by other system users.

Unit IDs (or Radio IDs) are 7 or 8 digit numbers identifying individual radios. Note: To view unit IDs you have to turn the option on in the Display Options menu.

LTR IDs are in the format A-HH-UUU where A is the area code (0 or 1), HH is the home repeater (01-20), and UUU is the user ID (000-254).

Understanding the Memory

Contents

All of the information contained in the scanner is stored on a micro SD card supplied with the scanner. This includes Profiles, Favorites Lists, all the radio settings, and the Radio Reference database.

Profiles

A Profile is a group of settings that includes your Favorites List settings (download/monitor status, quick key status), location information (zip code, any saved locations, location range, GPS options), Service Type selections, Search and Close Call settings, weather settings, Tone-Out settings, and all your basic radio settings (display options, replay options, etc.).

The first time you use the scanner to set a location you will start to setup a profile. Only one profile at a time can be used in the scanner. You can create multiple profiles for different locations, Favorites List selection, or scanning preferences. The Sentinel software allows you to download your profile from the scanner, edit, save, and create new profiles to upload them back to the scanner.

Profiles also hold your Favorites Lists *settings* (not the actual lists) for monitoring and uploading to the scanner. If you delete a profile (in the software), your Favorites Lists will still be there. When you create a new profile, you can select which Favorites Lists will be associated (enabled or disabled) with the new profile.

Favorites Lists

Because the memory is based on the Radio Reference database we now have a different order of organization not like banks and channels in traditional scanners, but more like Dynamic Memory

Architecture. You can now use Favorites Lists that follow RR database structure of Systems that contain Departments that hold the Channels (conventional frequencies or IDs) and then there are Sites to hold just the trunking frequencies.

Favorites Lists will allow you to store channels you find when you are scanning from the Full Database (the easiest way). They can contain channels from trunking systems and conventional systems. You can also manually add systems, (not single sites), departments and channels into Favorites Lists from the database as well as program new systems, departments, sites, and channels with the Sentinel software.

You can save up to 256 different lists in the scanner (and software) and associate them with any or all of your profiles. You can monitor one or more lists at a time and/or the Full Database. You can also export you lists to a file to share them. Deleting a profile will not delete the lists associated with a profile. However, deleting a Favorites List will delete it from all profiles.

Systems
Systems will hold all of your Sites, Departments, and Channels.

Departments
Departments are also created inside systems. Departments hold frequencies (channels) for conventional systems and IDs (also called channels) for trunked systems. Departments are typically used for the various Agencies that you listen to within a system. If you are familiar with DMA (Dynamic Memory Architecture) scanners, think of departments as being like 'channel groups'.

Trunking Sites
Inside systems are trunked sites hold the trunking frequencies for any trunking system and any band plan information needed. You will need at least one site for each trunked system and some systems can have several sites.

Understanding Quick Keys

Contents

Organizing your Quick Keys will be part of the planning. You will have to figure out which QK's to assign to your Favorites Lists, Systems, Departments, and Sites so you can scan them without a table of contents and with some sort of logic you can remember. Enabling/disabling QK's is not the same thing as Avoiding or Unavoiding Favorites Lists, Systems, Department and Sites.

Favorites List Quick Keys (FLQK)
Favorites Lists Quick Keys are used to enable or disable Favorites Lists for scanning. They are just the number keys on the scanner but once assigned to a Favorites List they become the QK's. Your Favorites Lists hold your Systems that also may have System QK's assigned to those Systems. Selecting a Favorites List will enable all (Unavoided) Systems in that list for scanning. Favorites List QK's can only be assigned *once* to any one Favorites List. If you don't assign a QK to a list, it will *always* be enabled. There are 100 Favorites List QK's (0-99) to use for your Favorites Lists.

System Quick Keys (SQK)
System Quick Keys are used to enable or disable conventional and trunking systems for scanning. You can assign any QK to one *or more* Systems, or program one or more systems with no QK assigned that will *always* be scanned unless you Avoid it. There are also 100 System QK's (0-99) to use for your Systems.

Department/Site Quick Keys (DQK)
You now also have 100 Department or Site QK's to assign to your Sites and/or Departments within your Systems. You can assign any QK to one or more Departments or Sites, or program one or more Department or Site with no QK assigned that will *always* be scanned unless you Avoid it.

Advice: Assigning a QK to a FL is a good idea but don't go overboard and assign QK's to all your 40 Systems, 125 Departments, and 300 Sites if you don't need to. Only assign QK's to what you may want to turn on or off. If you are always going to scan a Department or Site, leave it at the default (no QK) which will always enable it for scan. Using locations along with Location Control can also turn Departments or Sites on and off. If you are still bent on shutting stuff on and off, try creating a FL for some stuff on, and another for some stuff off. There's plenty of room on the SD card. To sum it up, don't make QK's any more complicated than they have to be.
See also Scanning Order for QK scanning order.

Search Quick Keys
You can assign any Search QK's (SRCH1, SRCH2, or SRCH3) to any (1) Custom Search, Tone-Out Search, or Close Call Only Search for quick access to your favorite searches.

Turning on the Scanner

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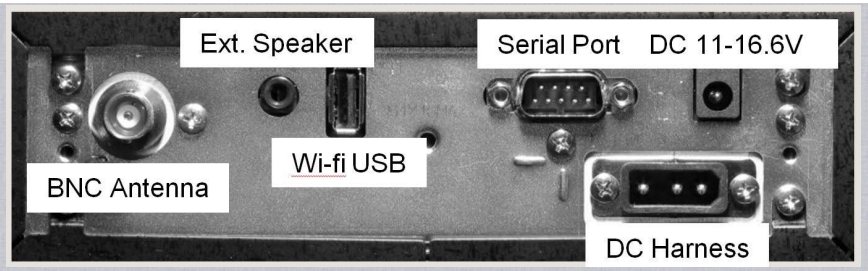
Scroll
Control

BCD436HP



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(BCD436HP) *Press and hold* ☼/⏻ for about 2 seconds. If the screen is too dark, press ☼/⏻ to turn on the backlight. Rotate the scroll control clockwise and set the volume to around 10 o'clock. Press the scroll control to display the volume level. Turn the scroll control (within 10 seconds) to adjust the volume.

Press the scroll control again to close the volume level (or let it disappear after 10 seconds). Press Func then press the scroll control to display the squelch level. Turn the scroll control counter-clockwise all the way then clockwise until the noise stops, then one notch more. Press the scroll control again to close the squelch level.

(BCD536HP) Rotate VOL clockwise and set the volume to around 10 o'clock. Rotate the SQ knob counter-clockwise all the way, and then rotate the VOL knob to find a comfortable volume level. Rotate the SQ clockwise until the noise stops, then one notch more.

The first time you turn on your scanner it will prompt you to set the clock. See Setting the Clock.

Note: Both of these scanners have a Real Time Clock (RTC) onboard powered by an internal battery (not the AA's with the 436). The internal battery will charge *only* when the scanner is powered on. It takes about 50 hours to trickle the internal battery up to a full charge, which will last for over a week. If the internal battery is depleted, you'll be prompted to enter the time upon power-up.

To begin scanning right away, press the Zip button to select your country and zip/postal code (See Data Naming to enter postcode). The scanner will load channels for your area from the database and start scanning.

Connecting the USB Cable

Contents

The USB jack is the lower jack located under the rubber flap on the right side of the BCD436HP and on the front of the BCD536HP under the E/yes button.

When you connect the USB cable to the scanner when the power is on you will see "USB Cable Detected Select USB Mode"-"Mass Storage = "E" or Serial Port = ".". Press E/yes to use Mass Storage mode for connection to the Sentinel software, database updates, firmware updates, and for reviewing Discovery sessions and recordings.

The SD card is read on your computer like an external drive and can be viewed in Internet Explorer.

The serial mode will be used for audio streaming, raw data output, and serial control modes in future software from 3rd party developers. Also used for operation of hand-held without batteries. You can download the serial drivers from the BCD436HP Twiki.

The USB cable can also be used to power the BCD436HP when the batteries are removed. Plug the USB cable into the BCD436HP with no batteries and "No Battery" will display. *Press and hold* the power button to turn on the scanner. Press .no to select "Serial Port".

Using Batteries (BCD436HP Only)

You can power your BCD436HP using three alkaline or rechargeable AA batteries. This is no switch for battery selection.
Note: Batteries are required in the scanner for the replay and recording features to work.

1. Install 3 AA batteries, matching the polarity symbols (+ -).
2. Replace the cover.

When battery icon flashes and the scanner beeps every 15 seconds, replace or recharge the batteries.

Caution: There is no switch for the battery type. Never attempt to charge non-rechargeable batteries.

The scanner has a built-in circuit that lets you recharge rechargeable batteries while they are in the scanner.
When the scanner is turned on, the scanner will not charge the batteries.
When the scanner is turned off, the scanner will charge the batteries.

Plug the USB cable into the scanner when the scanner is off and "Battery Charge" - "Start Charging? Yes = "E"/ No = "." will display. Press E/yes.
The scanner displays "Normal Charging" and charges the batteries according to the "Set Charge Time" setting.
When charging is finished "Charge Complete" will be displayed.

Navigating the Menus

Contents

The Menu key lets you select options to set up and use the scanner. To select a menu item, rotate the scroll control. Rotate right for down and left for up.
The currently-selected menu item is highlighted and reversed in the display. When the menu item you want to select is highlighted, press E/yes or the scroll control to select it. To back up a level, press Menu.
To exit all menus and return to the previous mode press Avoid.

Data Naming

Contents

Name any Favorites List, System, Site, Department, Channel, Location, Custom Search, Recording Session, Tone-Out, or SAME group with up to 64 characters.

To Enter a Character, turn the scroll control to select the character you want.
To move the cursor to the right, press 6>.
To move the cursor to the left, press <4.
To clear a character, press .no.
To clear *all* characters, press .no *twice*.
Press E/yes when finished to exit.

See also Characters.

Key Operations

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Power/VOL/ Light	Turns the scanner on/off and adjusts the volume.
	Press to toggle backlight intensity.
	Press Func then Vol to view P25 Adjustment Mode. Press Vol to exit.
SQ	Turn to adjust the squelch.
	Press to toggle Close Call Modes.
	Press and hold to enable Close Call Only Mode.
	Press Func then SQ to start Fire Tone-Out Standby/ Search Mode.
Scroll Control/ Function	Press to enter Function Mode for 3 seconds.
	Press to select a menu item or save an entry in Menu Mode.
	Turn to select a menu item in Menu Mode.
	Press then turn to set decode threshold in P25 Adjustment Mode.
	Turn to select characters with Data Naming.
	Turn to select Scan/Search direction and to continue Scan/Search in Scan/Search Modes.
	Turn to scroll Channels or Frequencies in Hold Modes.
	Turn in Department Pause to scroll Departments.
	Turn in System Pause to scroll Systems.
	Turn in Site Pause to scroll Sites in current System.
	Turn in Search Pause to select Custom Searches to enable in Search Mode.
	Turn to select next/previous recording in Replay Mode.
	Turn to resume Close Call search in Close Call Only Mode.
	Turn to start a Quick Search in Close Call Hold Mode.
	Turn to select next Weather Channel in Weather Scan.
	Turn to select Tone-Outs in Tone-out Standby/Search Mode.
Avoid	Press to exit all menus and return to previous mode.
	Press to toggle Channel/Frequency Avoid status in Receive/Hold Modes.
	Press to toggle Avoid status in System, Department, or Site Pause.
	Press Func then Avoid to review all Scan Avoids in current Favorites List *or* Database in Scan Hold Mode.

	Press Func then Avoid to review all Search Avoids in Search Hold Modes.
	Press and hold to clear all Department/Channel Avoids in the *current System* in Scan Hold Mode.
	Press and hold to clear all Search Avoids in Search Hold Modes.
	Press Func then *press and hold* Avoid to clear all Avoids in the *current* Favorites List or Database in Scan Hold Mode.
Zip	Press to enter country-zip/postal code.
Serv	Press to select Service Types.
Rang	Press to select Range.

BCD436HP

Power/Light/Lock	*Press and hold* to turn the scanner on or off.
	Press to use the backlight.
	Press Func then to lock or unlock the keypad.
Func	Press to enter Function Mode for 3 seconds.
Scroll Control Vol,Squelch	Press then turn to adjust volume level in Scan Mode.
	Press to view battery level.
	Press Func then Vol turn to adjust the squelch.
	Press Vol then Func then Vol to view P25 Adjustment Mode. Press Vol to exit P25 Adjustment Mode.
	Press Func then turn to set decode threshold in P25 Adjustment Mode.
	Press to select a menu item or save an entry in Menu Mode.
	Turn to select characters with Data Naming.
	Turn to select Scan/Search direction and to continue Scan/Search in Scan/Search Modes.
	Turn to scroll Channels or Frequencies in Hold Modes.
	Turn in Department Pause to scroll Departments.
	Turn in System Pause to scroll Systems.
	Turn in Site Pause to scroll Sites in current system.
	Turn in Search Pause to select Custom Searches to enable in Search Mode.
	Turn to select next or previous recording in Replay Mode.
	Turn to resume Close Call Search in Close Call Only Mode.
	Turn to start a Quick Search in Close Call Hold Mode.
	Turn to select next Weather Channel in Weather Scan.
	Turn to select Tone-Outs in Tone-out Standby Mode.
Avoid	Press to exit all menus and return to previous mode.
	Press to toggle Channel/Frequency Avoid status in Receive/Hold Modes.
	Press to toggle Avoid status in System, Department, or Site Pause.
	Press Func then Avoid() to toggle Close Call Modes in Scan/Search/Hold Modes.
	Press and hold to clear all Department/Channel Avoids in *current System* in Scan Hold Mode.
	Press and hold to clear all Search Avoids in Search Hold Modes.
	Press Func then *press and hold* Avoid() to enable Close Call Only Mode.
Zip/Services	Press to enter country-zip/postal code.
	Press Func then Zip to select Service Types.

BCD436HP and BCD536HP

Replay/ Record	Press to Replay the last transmissions.
	Press Func then Replay to start/stop recording.
	Press and hold Replay to review recording sessions.
System	Press Func then System to exit all menus and return to Scan Mode.

	Press to enter System Pause for 2 seconds then hold on a System in Scan Mode.
	Double Press System for hold without pause in Scan Mode.
	Double Press to release System Hold.
	Press to enter Search Pause for 2 seconds then hold on a Search in Search Mode.
	Double Press for Search Hold without pause in Search Mode.
	Press to release Search Hold.
Department	Press to enter Department Pause for 2 seconds then hold on a Department in Scan Mode.
	Double Press Department for hold without pause in Scan Mode.
	Double Press to release Department Hold.
	Press to enter Search Pause for 2 seconds then hold on a Search in Search Mode.
	Double Press for Search Hold without pause in Search Mode.
	Press to release Search Hold.
	Press Func then Department to hold/release Site in Scan Mode.
Channel/Hold/ Resume	Press to hold/release a Channel, Frequency, CC hit, or Tone-Out.
	Press Func then Channel to toggle Modulation for Channel, Site, or Search, in Hold Modes.
	Press to pause in Replay Mode.
Menu	Press to enter Menu Mode.
	Press to return one level in Menu Mode.
	Press Func then Menu for Search Menu in Search Mode.
	Press Func then Menu for Close Call Menu in Close Call Mode.
	Press Func then Menu for Weather Menu in Weather Scan.
	Press Func then Menu for Tone-Out Menu in Tone-Out Standby/Search Mode.
Number Keys	Press to select Favorites Lists in Scan Mode.
	Press 0-9 to use Direct Entry in Hold Modes.
	Press 0-9 to toggle custom searches on or off in Search Mode.
	Press 0-6 to toggle Close Call bands on or off in Close Call Only Mode.
	Press Func then 1, 2, or 3 to enable search keys in Scan Hold Mode.
	Press <4 to move the cursor to the left when editing text.
	Press Func then 4(ATT) to toggle channel/search/CC attenuation on/off in Receive/Hold Modes.
	Press Func then *press and hold* 4(ATT) to toggle Global Attenuation on/off in Scan Hold or Search Modes.
	Press Func then 5( ) to enter Wi-Fi menu (BCD536HP).
	Press 6> to move the cursor to the right when editing text.
	Press Func then 6(WX) to toggle Weather Alert Priority in Hold Modes.
	Press Func then *press and hold* 6(WX) to enter Weather Scan.
	Press Func then 7(IFX) to toggle Intermediate Frequency Exchange for a channel/frequency in Hold Modes.
	Press Func then *press and hold* 8(REV) to view the repeater frequency in Hold Modes.
	Press Func then 9(DISP) to toggle 3 Line Display Mode in BCD536HP or Channel Service Type/Unit ID Display in BCD436HP in Scan Hold Mode.
	Press Func then 0(LVL) to toggle the volume offset for a channel in Scan Hold Mode.
.no PRI	Press to enter a decimal point for a frequency.
	Press to enter an 'i' when entering an I-Call ID.
	Press to delete current character with Data Naming/Direct Entry.
	Press *twice* to delete all characters with Data Naming/Direct Entry.
	Press *twice* to enter a hyphen when entering an ID.

	Press to cancel Confirm? prompt.
	Press Func then .no(Pri) to toggle Priority Modes.
E/yes Q. SRCH	Press to select a menu item or save an entry in Menu Mode.
	Press to edit current Channel in Receive/Hold Modes.
	Press to add Channel to Favorites List in Receive/Hold Modes.
	Press to store a blinking CTCSS/DCS/NAC tone in Receive/Hold Modes.
	Press to store an ID in ID Search mode in Receive/Hold Modes.
	Press to store a Unit ID in Receive/Hold Modes.
	Press to 'Quick Store' a frequency in Search Modes.
	Press Func then E/yes to toggle ID Search Mode on/off in Scan Mode (Favorites Lists Only).
	Press Func then E/yes to start a Quick Search in Hold Modes.
	Press to store found tones in Tone-Out Search Mode.
	Press to select the current Tone-Out menu in Tone-Out Mode.

Set Your Location

Contents

Press Menu then scroll to Set Your Location and press E/yes.
Scroll to the options below and press E/yes.

Note: You may receive distant systems in other states that have a range that overlaps your area when using the database. This is due to the structure of the database.

Enter Zip/Postal Code
Auto Locate
Set Manual Location
Set Up GPS
Set Range
Edit Location
Save Location
Understanding Range

Enter Zip Code This will set the center of a zip/postal code as your location (not your exact location) and a default location range of 20 miles. You can then set the range, edit the location name, and save the location.
Select your country USA or Canada and press E/yes.
Enter your zip code or see Data Naming to enter a post code.
Note: You can also press the ZIP button to enter your zip/postal code.

Auto Locate The Auto Locate feature works by trying to monitor any Motorola or P25 system in your area that is also in the Radio Reference Database. The scanner will then set your location based on the system(s) it receives. This will set the center of the discovered radio tower as your location (not your exact location) and a default location range of 30 miles. You can then set the range, edit the location name, and save the location.
Press E/yes or .no to accept the location. Press Menu to cancel.

Set Manual Location This will set your exact location. You can then set the range, edit the location name and save the location.
Input Latitude - Using the keypad, enter your latitude.
Press .no to toggle N or S, and press E/yes.
Input Longitude - Using the keypad, enter your longitude.
Press .no to toggle E or W, and press E/yes.

Set Up GPS Sets the location format and serial port baud rate.
Location Format
DMS:DDD°MM'SS.ss or DEG:DDD.dddddd.
Set Serial Port (front and rear ports for the BCD536HP), default is 4800 bps for a GPS device.
Off, 4800, 9600, 19200, 38400, 57600, or 115200 bps.

Set Range This setting allows you override the default range setting for your current location to increase or decrease the number of Trunking Sites and Channel Departments you can receive when you are scanning from the Full Database and when you are scanning Favorites Lists with Use Location Control enabled. <> The default (and recommended) setting is 0 miles. See also Understanding Range.
Enter the range (0-50) and press E/yes.
Note: (BCD536HP Only) You can also enter your range by pressing the Rang button.

Edit Location This allows you to create, edit, and recall locations.
New Location or Saved Location
Edit Name See Data Naming.
Use Location

This will set the location as current for scanning the Database and Favorites Lists with Use Location Control enabled.
At Confirm? Press E/yes or .no.

Delete Location
You can only delete saved locations. The last location set will be retained for use when scanning the Database.
At Confirm Delete? Press E/yes or .no.

Set Location Information See Set Manual Location.

Set Range Enter the range (0-50) and press E/yes.

Save Location This will save the *current* location, the range, *and set* the location as current for scanning the Database and Favorites Lists with Use Location Control enabled.
See Data Naming to name the location.

Understanding Range

1. The range setting will only work with Favorites Lists that have Use Location Control set to On *and* with Departments/Sites that have locations programmed. Everything in the Full Database also has locations programmed. If you manually program Departments/Sites with no location information included and set 'Use Location Control' to Off, the range setting will have no effect on them because the scanner doesn't know where they are.

2. You will receive Departments/Sites that have a range equal to your location range setting plus the programmed range of the Departments and Sites. For example, if your location range is set to 10 miles and a Department/Site range is set to 30 miles, and that Department/Site is less than 40 miles away from your current location setting, it will be enabled in your Favorites List according to both range settings.

3. If you use Add Current dB Channels from a list with a 20 mile range (selected location by zip/postal code) and then set the range to 30 miles, Location Control will not add the other channels included in that extra 10 mile range.

Selecting Service Types

Contents

Make sure you enable the Service Type for the channels you want to listen to. Each channel can be tagged with a "Service Type" that allows you to hear specific services such as Fire, EMS, and Police when you are monitoring the Full Database and/or your Favorites Lists. The Appendix has a list of Service Types and their general descriptions.

Not all service types are enabled when you create a new profile or when you set your location in the scanner. By default only EMS Dispatch, Fire Dispatch, Law Dispatch, Custom 1, and Multi-Dispatch are enabled.

(BCD536HP) Press the Serv button.
(BCD436HP) Press Func then the Zip/Services button.
Scroll to each Service Type and press E/yes to enable or disable.
Press System or Avoid to exit.

When the scanner displays a Service Type that is not in the Favorite Lists, the scanner will display a "---" indication.

Display Options

Contents

Press Menu then scroll to Display Options and press E/yes.

Scroll to the options below and press E/yes.

Set Backlight The scanner will turn on/off the LCD and the Keypad backlight automatically according to backlight settings.
You can override these settings and turn on the backlight by pressing Vol on the BCD536HP, or the light button on the BCD436HP.

Set Mode - Note: (BCD536HP Only) These settings will work *only* when Set Dimmer is Off and then only at the High intensity.

Squelch Determines how the backlight acts with squelch.
Off - The backlight stays off when the squelch opens (default).
5 sec - The backlight stays on 5 seconds after the squelch opens.
10 sec - The backlight stays on 10 seconds after the squelch opens.
Open Squelch - The backlight stays on only when the squelch is open.

Keypress

Off - The backlight stays off when any key is pressed (default).
5 sec - The backlight is on for 5 seconds when any key is pressed.
10 sec - The backlight is on for 10 seconds when any key is pressed.

Timeout (BCD436HP Only)

10 sec - Turns the backlight on for 10 seconds when you press ☼/⏻.
30 sec - Turns the backlight on for 30 seconds when you press ☼/⏻ (default).
60 sec - Turns the backlight on for 60 seconds when you press ☼/⏻.
Infinite - The backlight always stays on.

Set Dimmer (BCD436HP)

High, Middle, or Low.

Set Dimmer (BCD536HP)

Manual (For non-vehicle use)

High, Middle, Low, or Off.

Auto (For vehicle use)

+ Polarity - If the orange wire gets 12V when you turn on the headlights.
- Polarity - If the orange wire is switched to chassis ground when you turn on the headlights.

Adjust Contrast This setting controls the displays contrast.

Contrast 1-15

Display Unit ID Allows you view the unit ID of the radio currently transmitting on Motorola, EDACS, and APCO P25 systems.

On or Off.

Note: (BCD436HP Only) This setting toggles Unit ID Display with Channel Service Type.

Set ID Format Sets the ID display format.

Set ID Format (Mot/P25)

Decimal Format or Hex Format. The default setting is Decimal.

Set ID Format (EDACS)

AFS Format or Decimal Format. The default setting is AFS.

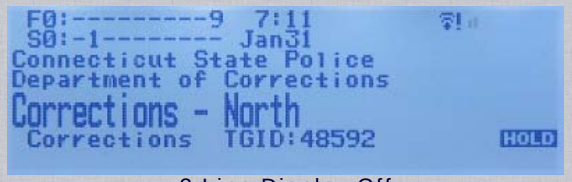
Set Upside-Down (BCD536HP Only)<> This allows you to reverse the display so you can mount the scanner upside-down and hear the speaker from the top. The default setting is Off.

On or Off.

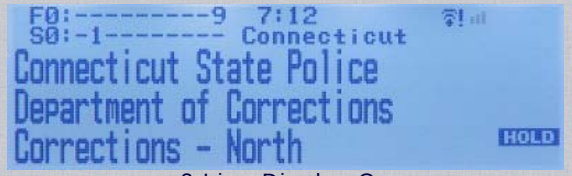
3-Line Display Mode (BCD536HP only)

Hold on any channel and press Func then 9(DISP).

Press Channel to resume.



3 Line Display Off



3 Line Display On

View the Battery Level (BCD436HP Only)

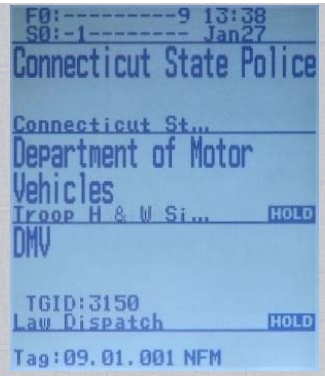
To view the battery level (in volts) press the scroll control and look at the small numbers in the upper right of the display. Press the scroll control again to close the volume level or let it disappear after 10 seconds.

A Look at the Display

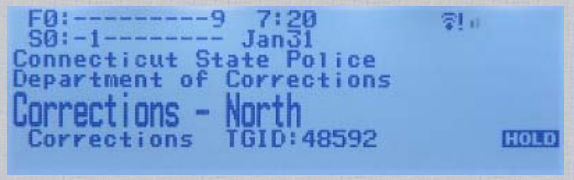
Contents

Conventional Receive

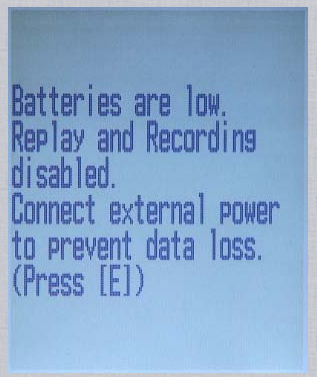
Display Unit ID On



Display Unit ID Off

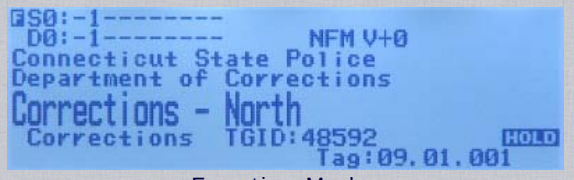


Trunked Receive



Replay and Recording Disabled

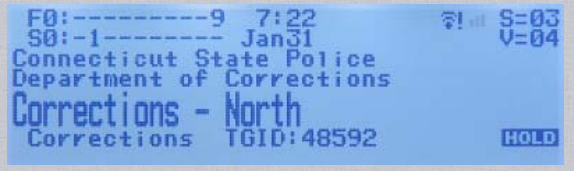
Priority Channel/Volume Offset



Function Mode

Custom Search

Search with Scan



Volume and Squelch

Note: (BCD536HP) not all items will appear in the display in 3-line display mode.

F appears to show *Function Mode*.
F0-9: shows the first digit of the current *Favorites List* QK on the left with the *blinking* second digit on the right in *Scan Mode*. A non-blinking number on the right indicates the QK is enabled waiting to be scanned. A - (dash) means nothing is enabled for, or assigned to the QK. An * (asterisk) means the QK is disabled.
SITE HOLD appears in *Site Hold Mode*.
SEARCH appears in *Search Mode*.
The Time appears.
appears when the keypad lock is enabled (BCD436HP Only).
? or ? appears to show the Scan or Search Direction.
GPS appears when connected to a GPS unit.
REC appears when Recording.
appears to show Wi-Fi status is *not* connected (BCD536HP Only). appears to show Wi-Fi status is connected.

AP appears when connected in *Access Point Mode* (BCD536HP Only).

 appears to show the signal strength.

PRI appears in *Priority Mode.*

PRI appears *reversed* in *Priority DND Mode*.

 appears and blinks if the battery is low. (BCD436HP Only)

 appears if the *Close Call Priority* feature is on.

 is *reversed* in *Close Call DND Mode*.

S=NN shows the squelch level for three seconds when you turn SQ (BCD536HP Only).

V=NN shows the volume level for three seconds when you turn SQ.

V.VV shows the battery level (in volts) when you press VOL (BCD436HP Only).

S0-9: shows the first digit of the current *System* QK on the left with the *blinking* second digit on the right in *Scan Mode*.

A non-blinking number on the right indicates the QK is enabled waiting to be scanned.

A - (dash) means nothing is assigned to the QK.

An * (asterisk) means the QK is disabled.

D0-9: shows the Department QK (Conventional system) or Site QK (trunked system) when you press Function in *Scan Mode*.

shows the Department QK when you press Function in *Receive/Hold Modes*.

0-9: shows the Custom Search key status in *Search Mode*.

MMM DD shows the Month and Date (3-line display Mode On).

Receive Mode shows the Modulation for the channel/site in *Receive/Hold Modes* (BCD436HP Only).

shows the Modulation for the channel/site in *Function Mode* (BCD536HP).

V+/- N shows Volume Offset for the channel in *Receive/Hold Modes* (BCD436HP Only).

shows Volume Offset for the channel in *Function Mode* (BCD536HP Only).

IFX appears if Intermediate Frequency Exchange is enabled for the frequency in *Receive/Hold Modes*.

ATT appears to show channel attenuation in *Receive/Hold Modes*.

appears to show search attenuation in *Search Mode.*

ATT *blinks* to indicate global attenuation.

P25 appears if the channel is receiving digitalized voice in *Receive/Hold Modes* (Disp. Unit ID Off-BCD436HP only).

PT0 appears if the channel is receiving Phase II time slot 0.

PT1 appears if the channel is receiving Phase II time slot 1.

LNK appears when data is received on a voice channel in *Receive/Hold Modes* (Disp. Unit ID Off-BCD436HP only).

DAT appears when data is received on a control channel in *Receive/Hold Modes* (Disp. Unit ID Off-BCD436HP only).

ENC appears if the channel is receiving encrypted voice and is muted in *Receive/Hold Modes* (Disp. Unit ID Off-BCD436HP only).

WX appears if the *Weather Alert Priority* feature is on.

System Name appears in *Scan/Hold/Receive Modes*.

Search with Scan appears to show the Search with Scan system in *Scan/Hold/Receive Modes*.

Avoid/Hold shows System Avoid/Hold status next to System name in *Hold/Pause Modes*.

Temporary Avoids appear reversed in the display-AVOID.

Department Name appears for a conventional system in *Scan/Hold/Receive Modes*.

appears for a trunked system in *Receive/Hold Modes*.

Avoid/Hold shows Department Avoid/Hold status next to Department name in *Hold/Pause Modes*.

Temporary Avoids appear reversed in the display-AVOID.

Custom Search Name shows the Custom Search or Close Call Hits department in the Search with Scan system in *Scan/Receive/Hold Modes*.

Site Name appears for a trunked system in *Scan Mode*.

Custom Search Name shows in *Search Mode* (3-line Display Mode Off).

Search Frequency appears in *Search Mode*.

Modulation appears in *Search Mode*.
Scanning... appears for a conventional system in *Scan Mode*.
ID Scanning/Searching... appears for a trunked system in *Scan Mode*.
Channel Name appears in *Receive/Hold Modes*.
Avoid/Hold shows Channel Avoid/Hold status next to Channel name in *Hold/Pause Modes*. Temporary Avoids appear reversed in the display-**AVOID**.
P appears for a priority channel in *Receive/Hold Modes* (3-line Display Mode Off).
Channel Service Type appears in *Receive/Hold Modes* (BCD536HP, 3-line Display Mode Off). appears in *Receive/Hold Modes* with Disp. Unit ID set to *Off* (BCD436HP).
TGID appears for a trunked site in *Receive/Hold Modes* (3-line Display Mode Off).
Tone/Code for a conventional channel in *Receive/Hold Modes* (3-line Display Mode Off). ***Blinking*** Tone/Code indicates *Tone/Code Search*. ****** appears to show tone/code lockout in *Hold Mode*.
Unit ID appears in *Receive/Hold Modes* with Disp. Unit ID set to *On* (3-line Display Mode Off).
Frequency, Mode for a conventional channel in *Receive/Hold Modes* (3-line Display Mode Off).
Favorites List Name appears when scanning any Favorites List in *Scan/Hold/Receive Modes* (BCD436HP). appears when scanning a Conventional System in *Scan/Hold/Receive Modes* (BCD536HP, 3-line Display Mode Off). appears when scanning a Trunked System in *Scan Mode* (BCD536HP, 3-line Display Mode Off).
Full Database<> when scanning the Full Database in *Scan/Hold/Receive Modes* (3-line Display Mode Off).
SCR appears if one or more broadcast/custom screen bands are turned on in *Receive/Search Modes*.
REP appears if Repeater Find is enabled in *Receive/Search Modes*.
Tag: NN.NNN.NNN shows Number Tag Info for a Favorites List in *Function Mode* (BCD536HP Only). shows Number Tag Info for a Favorites List in *Receive/Hold Modes* (BCD436HP Only).

Settings

Contents

Press Menu then scroll to Settings and press E/yes.

Scroll to the options below and press E/yes.

Adjust Key Beep Allows you to turn the key beep on or off and adjust the volume level. Auto sets the alert beep to the master volume level.

Off, Level 1-15, or Auto

Battery Option (BCD436HP Only)

Set Battery Save Turns off RF power for 1 second and turns it on 300 ms to extend the battery life in Channel Hold Mode for a Conventional System (without Priority Scan), and in any Search Hold mode when there is no transmission over 1 minute.

On or Off

Set Charge Time - 1-14 (hours).

Set Battery Low

Set Alert

Set Alert Tone - 640, 780, 920, 1060, 1200 (Hz).

Set Alert Interval - 1-60 (seconds). Default is 15 sec.

Set Alert Volume - 1-15 or Auto. Default is Auto.

Set Voltage - 3100-3400 (mV). Default is 3300mV.

Band Defaults This allows you change the 'Auto' values you can select while programming frequencies, searches, etc. to whatever you feel Auto should be for each band (vs. the radio defaults). Since all of the step and modulation settings default to Auto, this allows you to skip those settings when programming. See also Default Bands.

Scroll to each band you wish to edit and press E/yes.

Set Modulation
AM, NFM, FM, WFM, or FMB (Broadcast).
Set Step
Auto, 5, 6.25, 7.5, 8.33, 10, 12.5, 15, 20, 25, 50, or 100 kHz.

Auto Shutoff Allows you to set the scanner to shut off after a set time.
Off, 5, 10, 15, 30, 45 min, 1, 2, 3, hours.

Set Clock Sets the clock for the display and the default tag for recordings.
Set Date
Set Year Enter the year (2013-2099).
Set Month Enter the month.
Set Day Enter the day.
Set Time
Set Hour Enter the Hour (0-23).
Set Minute Enter the minute.
Set Time Zone
Scroll to your time zone.
Daylight Saving Advances the clock one hour during DST when On.
On or Off

Replay Options Your scanner Replay feature acts as an instant replay of the transmissions you've just heard. You can set how long a period Replay records for instant playback. This period can range from 30 seconds to 240 seconds (4 minutes). While you can replay any recording immediately and continue replaying it, you cannot save it for future listening.

You can also record transmissions. When you begin recording, your scanner adds the Replay recording buffer to the recording. These recording sessions are saved and can be replayed on demand. Recording has to be started every time you turn on the scanner. Rename and delete sessions through the Review Recordings submenu. You can also copy your recordings from the SD card to your computer in "Mass Storage Mode".
Note: Batteries are required in the scanner for the replay and recording features to work.

Set Replay Duration
30, 60, 90, 120, 150, 180, 210, or 240 sec.
Review Recordings You can also *press and hold* Replay to review recordings.
Recording Session To play sessions you have to enable recording by pressing Func then Replay.
Play Session
Turn the Scroll Control to select recordings.
Press Channel to pause/resume replay. Press Replay to exit.
Delete Session
At Confirm Delete? Press E/yes or .no.
Rename Session See Data Naming.

Restore Options Allows you to clear all user data (full reset) or reset just profile settings to default.
Clear User Data
(Full Reset) will delete all Favorites Lists, locations, reset all profile options to default, clear all Avoids, delete all recording sessions, all discovery logs, and all weather event records.
Note: Pressing and holding 2, 9, and Dept when you power on the scanner will also clear all user data.
Reset User Settings
Will only reset all profile settings and Favorites List will be saved.

See Scanner Info This will show you how much memory is in use, the firmware version, and scanner serial number.

Using the Keypad Lock (BCD436HP Only)<> The only keys/knobs that work when the keypad is locked are Channel for Hold Mode, Func, ☼/⏻, and the Scroll Control for volume.
Press Func then ☼/⏻/🔒 to toggle the keypad lock.

Wi-Fi Setup (BCD536HP Only)

Contents

Note: The Wi-Fi feature is not yet ready for deployment yet.
The Wi-Fi dongle allows you to connect to the scanner wirelessly and control your scanner with the Remote software.
Be sure to download the newest firmware for the Wi-Fi Dongle at the BCD536HP Twiki.

< Mode. Point Access and Mode Infrastructure modes, connection Wi-Fi different two has scanner The>Infrastructure Mode is able to connect to an Access Point device. With this mode, all you need to do is a set a password. In a few cases, there is no password needed with the Access Point unit.

Note: A router must be broadcasting its SSID for the initial setup. See your router's manual to temporarily enable SSID broadcasting. You can then turn it off after setup.

Access Point Mode< 5 to up with connect able is> Setting parameters are as follows: SSID, Security type, and Password.

Make sure the Wi-Fi dongle is connected to the USB port behind the scanner.
Press Menu then scroll to Wi-Fi Setup and press E/yes.

Show Wi-Fi Information

Shows the IP address, MAC number, and version *when connected*.

Shows 'Wi-Fi not connected' when the Wi-Fi dongle is not connected.

Set Connection

Off Not connected.

Infrastructure Mode – Routers etc. The scanner will look for networks.

Select AP

Select the access point with the encryption type.

Input Password See Data Naming.

Access Point Mode – Laptops, Smart devices etc.

Input SSID

Enter (or use default) name of connection. See Data Naming.

Select Security

Open, WEP, or WPA/WPA2.

Input Password See Data Naming.

Reset to Factory

At Confirm? Press E/yes or .no.

Planning Favorites Lists

Contents

A Profile contains all your configuration settings as well as your Favorites Lists and settings, Systems, Avoids, etc., and is a complete image of what is in your scanner. Other settings such as range, service types selected, enabled Favorites Lists, weather settings, display and audio settings also define a profile. Remember that all Favorites Lists are common to all profiles. Enabling and disabling Favorites Lists within a profile is part of defining a profile. Deleting a profile will not delete the lists associated with a profile. However, deleting a Favorites List will delete it from all profiles.

You automatically start to create a profile once you enter your location. If you create a new profile in the software, your Favorites Lists will be included (but not enabled) with the new profile. The scanner only holds one profile at a time. Others can be created and uploaded to the scanner with the Sentinel Software.

Startup Keys

You can program each of your Favorites Lists with a Startup Key (0-9) so that when you power up the scanner and press the key number, just those Favorites List(s) assigned to the key will be enabled for scan. Systems are not affected. See also Using Startup Keys.

Number Tags

Numbers tags will allow you to tag each Favorites List, System, and Channel to locate easier in hold mode. Number tags can range from 0 to 99 for Favorites Lists and Systems, and 0-999 for Channels. You can assign number tags to channels even if the Favorites List does not have a number tag but, without a Favorites List number tag, you can only navigate to these channels while holding or scanning in that Favorites List.
See also Using Number Tags.

Alerts

You can program your scanner to alert you when, a Channel or Unit ID is received, you receive a Close Call hit, an ID is transmitted with an Emergency Alert or you receive a Tone-Out hit. For each alert in the scanner, you can select from 9 different tone patterns, 15 volume settings, and for the LED Alert Light, set 7 colors, and 3 flash patterns.

Worksheets

I have put together complete pdf worksheets ready to print to help you plan your Systems, Close Call, and Fire Tone-Out, etc. settings. Even if you don't fill them out, they are a good check list for programming.
Profile Worksheet Favorites Lists Worksheet Settings Worksheet Tone-Out Worksheet
Conventional Worksheet Motorola P25 Worksheet Motorola 800/900 Worksheet Motorola VHF/UHF Worksheet EDACS Worksheet LTR Worksheet

Manage Favorites Lists

Contents

Favorites Lists hold all your Systems, Sites, Departments, and Channels. You should assign a Quick Key to every Favorites List to quickly enable or disable the list.

New Favorites List/List Options

Press Menu then scroll to Manage Favorites and press E/yes.

To Create a New Favorites List scroll to New Favorites List and press E/yes.

To Edit a Favorites List scroll to the Favorites List and press E/yes.

Scroll to the options below and press E/yes.

Review/Edit System
Set FL Quick Key
Set FL Number Tag
Set FL Startup Key
Use Location Control
Review FL Avoids
Stop All Avoiding
Add Current dB Channels
Rename
Delete
Information
Understanding Location Control

Review/Edit System See Programming Systems.

Set FL Quick Key This assigns a QK to the Favorites List and will scan the list when the key is enabled. You can only use a FL QK *once*. The default setting is . (no QK). If you don't assign a QK to a Favorite List, it will always be scanned unless you turn it off in Select Lists to Monitor.

Scroll to the QK number (0-99 or . for no QK).

Note: Pressing the first number of a 2-digit QK will get you closer, 1 for 10, 2 for 20, etc., then scroll to second digit.

Set FL Number Tag This allows you to number a Favorites List so you can access it quickly from Channel Hold Mode. The default setting is no number tag (blank). See also Using Number Tags.

Enter the number tag (0-99) (Press .no to clear display).

Set FL Startup Key This allows you to turn on the scanner with the Favorites List enabled for scan. The default settings are all keys Off. See also Using Startup Keys.

Scroll to each key (0-9) and press E/yes to enable. Press Menu to save.

Use Location Control This enables Location Control for the Favorites List. The default setting is Off. See also Understanding Location Control.

On or Off

Review Avoids This allows you to review all Avoids for the Favorites List. Temporary Avoids appear reversed in the display-AVOID. See also Review Scan Avoids.

Scroll to each Avoid and press E/yes to Stop Avoiding.

Stop All Avoiding This will Stop Avoiding all Channels, Departments, and Systems in the Favorites List. See also Clear All Scan Avoids.

At Confirm? Press E/yes or .no.

Add Current dB Channels This allows you to add *all* channels enabled for scan to the Favorites List. This good to use after you have optimized the Full Database when selecting a location.

At Confirm? Press E/yes or .no.

Notes: 1. Any Avoided Systems, Sites, Departments, or Channels will not be added.

2.< new the added are Types Service selected from range, set inside that channels only Database, Full adding When> When adding channels from the Full Database, only channels that are inside the set location range, and from the selected Service Types are added to the new list.

3.< 'Use List Favorites a> When adding channels from a Favorites List that has 'Use Location Control' set to On, only channels that are inside the set location range, and from the selected service types are added to the new list.

4. When adding channels from a Favorites List that has 'Use Location Control' set to Off, only channels that are from the selected service types are added to the new list.

Rename This allows to you rename the Favorites List.

See Data Naming.

Delete This will delete the Favorites List.

At Confirm Delete? Press E/yes or .no.

Information This will show you the file size and number of Systems in the list.

Understanding Location Control

Location Control allows you to enable or disable channels scanned in a Favorites List based on your location. Actually, it enables/disables Sites and Departments in Favorites Lists (as long as they have locations programmed) based on your current location and location range settings. Location Control is always enabled when scanning from the Full Database.

Location Control can also save you the task of assigning, remembering, and enabling/disabling QK's to your Departments and Sites.

To use Location Control, you have to enable it for each Favorites List (default is Off). You also need to have locations programmed for Sites and Departments in each list (you can't program a location for a system).

With 'Use Location Control' set to On, the scanner only sees Departments/Sites with programmed locations. Any Department/Site with no location information programmed will not be scanned. If you append (add) a System/Department to a list from the Database, the locations will be brought in with each System/Department you append.

With 'Use Location Control' set to Off, the scanner will enable *all* Sites and Departments in your Favorites List no matter what the location range or Site/Department range is set to.

You don't need a GPS to scan by location if *all* of the following apply:

1. You have 'Use Location Control' set to On for each Favorites List you want to use with Location Control.
2. You set (by zip/post code, Auto Locate, or manually), or select a location.
3. Your Departments and Sites have locations programmed.

The scanner then compares your location data with Site and Department data to determine which channels to scan. Conceivably, you could program everything you want to hear into one Favorites List and scan just by selecting locations rather than enabling/disabling lists. If you are traveling long distances a GPS device would be a better way to go.

Programming Systems

Contents

Note for Motorola/P25 systems: If you are not sure if the system is Motorola or P25, look at the system type in the RR database for your system. Only those systems tagged as "Project 25 Phase I or Project 25 Phase 2" are Project 25 systems. Any system type that includes the word "Motorola" should be programmed as a Motorola system, even if it uses some or all digital channels.

New System/System Settings

Press Menu then scroll to Manage Favorites and press E/yes.

Scroll to the Favorites List and press E/yes.

Scroll to Review/Edit System and press E/yes.

To Create a New System scroll to New System and press E/yes.

Scroll to P25 Trunk, P25 X2-TDMA, P25 One Frequency, Motorola, EDACS, LTR, or Conventional and press E/yes. See also this post at RR about One-Freq Trunk systems.

At Confirm? press E/yes or .no.

To Edit System Settings scroll to the System and press E/yes.

Edit Name
See Data Naming.

Edit Unit IDs Disp. Unit ID must be set to On in the Display Options menu to view Unit IDs. The default setting is Off.

Note: You can also save any Unit ID in the display by pressing E/yes.

New Unit ID/Edit Unit ID
Enter the ID and press E/yes.

Edit Name See Data Naming.

Set Alert Tone
Alert 1-9 or Off.
Set Level
Level 1-15 or Auto (the master volume level).

Set Alert Light
Set Color
Off, Blue, Red, Magenta, Green, Cyan, Yellow, or White.
Set Pattern
On, Slow Blink, or Fast Blink.

Delete Unit ID
At Confirm Delete? press E/yes or .no.

Copy System Copying a system will copy all Sites, Departments, Channels, and settings including QK assignments into the current Favorites List.
See Data Naming to name the new system.

Delete System
At Confirm Delete? press E/yes or .no.

System Options

Press Menu then scroll to Manage Favorites and press E/yes.
Scroll to the Favorites List and press E/yes.
Scroll to Review/Edit System and press E/yes.
Scroll to the System you want to edit and press E/yes.
Scroll to Edit Sys Options and press E/yes.
Note: Not all options will appear for all types of systems.

Contents

Set System Quick Key
Set System Number Tag
Set Avoid
Set Hold Time
ID Search
Edit Fleet Map
Priority ID Scan
Set Status Bit
Set End Code
Emergency Alert
Review ID Avoids
Clear All ID Avoids
Set Audio AGC
P25 NAC Option
P25 Waiting Time
P25 Threshold Mode
P25 Threshold Level

Set System Quick Key<> This assigns a quick QK key to the System and the scanner will scan the System when the key is enabled. The default setting is . (no QK). If you don't assign a QK to a System, it will always be scanned unless you Avoid it.
Scroll to the QK number (0-99 or . for no QK).
<>Note: Pressing the first number of a 2-digit QK will get you closer, 1 for 10, 2 for 20, etc., then scroll to second digit.

Set System Number Tag This allows you to number a System so you can access it quickly from Scan Hold Mode. The default setting is no number tag (blank). See also Using Number Tags<>.
Enter the number tag (0-99) (Press .no to clear the display).

Set Avoid< the a is System This enabled). system if (even not or scanned be will whether determines> This determines whether a System will be scanned or not (even if the system is enabled). Temporary Avoids cancel when you cycle power. The default setting is Stop Avoiding.
See also Avoiding Transmissions.
Stop Avoiding, Temporary Avoid, or Permanent Avoid

Set Hold Time< and scanner The to the channels System This system scanned be will expires. time delay channel ends, transmission current any expires, hold after next moves setting. this of regardless once least at (Unavoided) All system. on moving before scan amount seconds) (in sets> This sets (in seconds) the amount of time the scanner will scan the System before moving on to the next system. All (Unavoided) channels will be scanned at least once regardless of this setting. The scanner moves to the next system after the hold time expires, any current transmission ends, and the channel delay time expires. The default (and recommended) setting is 0 seconds.
Enter the hold time 0-255 (sec.) and press E/yes to save.

ID Search This sets whether the scanner searches for all IDs in a trunking system (On), or scans only programmed IDs (Off). The default setting is Off. See also Toggle ID Scan or ID Search<>.
On or Off

Edit Fleet Map (Motorola Type I/IIi Systems Only) This allows you to program a fleet map for Motorola Type I Systems. You must program a system fleet map in order for the scanner to properly track and display talk group IDs.
Block 0 Scroll to the size code (0-14) and press E/yes.
The next *available* block is prompted to select the next size code (0-14).
Repeat for each block as needed (0-7).
Note: If you select size code 12, 13, or 14, these restrictions apply:
12 can only be assigned to Blocks 0, 2, 4 or 6.
13 can only be assigned to Blocks 0 and 4.
14 can only be assigned to Block 0.
Since these size codes require multiple blocks, you will be prompted for the next *available* block.
Example: If you assign Block 0 as 12, the scanner prompts you for block 2, the next block available, instead of block 1.

Priority ID Scan (no P25-One Freq)<> This allows you to use Priority Scan with IDs in the System. The default setting is Off. See also Priority Scanning.
On or Off

Set Status Bit (Motorola Only) This sets how your scanner works with Status Bits (also called S-bits), letting you control how the scanner interprets and displays Motorola talk group IDs. The default setting is Ignore.
Yes - the scanner treats all received IDs as unique IDs.
Ignore - the scanner rounds all IDs down to the next interval of 16.

Set End Code (Motorola Only) This sets how the scanner handles the transmission end code sent by most Motorola Systems. The default setting is Ignore.
Analog - The scanner recognizes only analog end transmission codes.
Analog+Digital - The scanner recognizes analog and digital end codes.
Ignore - The scanner waits for the carrier to drop before leaving a channel.

Emergency Alert (Motorola/EDACS Only) This sets how your scanner alerts you to IDs that have the emergency flag set. The default setting is Off.

Set Alert Tone
Alert 1-9 or Off.
Set Level
Level 1-15 or Auto (the master volume level).
Set Alert Light
Set Color
Off, Blue, Red, Magenta, Green, Cyan, Yellow, or White.
Set Pattern
On, Slow Blink, or Fast Blink.

Review ID Avoids This allows you to review Avoided IDs in the System. Temporary Avoids appear reversed in the display-**AVOID**.
< Stop>Scroll to the ID and press E/yes to Stop Avoiding.
Nothing Avoided appears if nothing is Avoided.

Clear All ID Avoids < Stop>This allows you to Stop Avoiding all Avoided IDs in the System.
At Confirm? press E/yes or .no.
Nothing Avoided appears if nothing is Avoided.

Set Audio AGC This allows you to turn AGC (Automatic Gain Control) on or off for the System. The default settings are Off.
Analog - Press E/yes to toggle On or Off.
Digital - Press E/yes to toggle On or Off.

P25 NAC Option (P25 One Freq)<> This allows you to have the scanner search for NAC codes or you can program a specific code for the System. The default setting is Search.
<>Search - The scanner opens squelch for any digital signal and displays the NAC being used.
Set P25 NAC - The scanner opens squelch only for signals that include the programmed NAC.
< P25 Input>See Data Naming<>.

P25 Waiting Time (Conventional Only) *This setting gives the scanner time to determine if channels on Conventional Systems have digital or analog transmissions. During this time, the scanner will evaluate the received signal and, if it detects digital data, will open squelch immediately. If digital is not detected before the delay expires, the scanner will open squelch at the end of this delay. This is to prevent "false decode" problems. This setting only affects conventional channels with an Audio Type set to **All**. The default setting is **400** ms.*
0 to 1000
Note: Any analog transmissions will lose the first part of the transmission, up to the wait time you set here.

P25 Threshold Mode (Conventional Only) This mode sets the algorithm for P25 decode [1]. The default setting is Auto.
<>Auto - Automatically sets the decode threshold based on received signal.
Manual - Allows you to manually set the threshold by using the P25 Threshold Level setting (below) or P25 Adjustment Mode.
Default - Sets the scanner to the default threshold of 8, Auto.

P25 Threshold Level (Conventional Only) Sets the RSSI value below which the scanner will not attempt to make P25 fine tune adjustments. If the signal is too low, RX reliability is not high enough to make P25 adjustments correctly [1]. The default setting is 8.
0 to 20

Programming Departments

Contents

New Department/Department Options

Press Menu then scroll to Manage Favorites and press E/yes.
Scroll to the Favorites List and press E/yes.
Scroll to Review/Edit System and press E/yes.
Scroll to the System and press E/yes.
Scroll to Edit Department and press E/yes.

To Create a New Department scroll to New Department and press E/yes.

To Edit an Existing Department scroll to the Department and press E/yes.

Edit Name
Set Department Quick Key
Edit Channel
Set Location Information
Set Avoid
Delete Department
New Department

Edit Name
See Data Naming. Tip: add QK number to name.

Set Department Quick Key This assigns a QK to the Department and the scanner will scan the Department when the key is enabled. The default setting is . (no QK). If you don't assign a QK to a Department, it will always be scanned unless you Avoid it.

Scroll to the QK number (0-99 or . for no QK)

Note: Pressing the first number of a 2-digit QK will get you closer, 1 for 10, 2 for 20, etc., then scroll to second digit.

Edit Channel

See Channel Options.

Set Location Information This allows you program a location for the Department with Use Location Control enabled or with a GPS. You can program a circle with a radial range or multiple rectangles as a location.

See Set Up GPS first to setup your GPS format.

Circle

Set Latitude

Enter the latitude. Press .no to toggle N or S, and press E/yes.

Set Longitude

Enter the longitude. Press .no to toggle E or W, and press E/yes.

Set Range See also Understanding Range.

0-6000.

Rectangles

New Rectangle

Latitude -Top Left

Enter the latitude. Press .no to toggle N or S, and press E/yes.

Longitude -Top Left

Enter the longitude. Press .no to toggle E or W, and press E/yes.

Latitude - Right Bottom

Enter the latitude. Press .no to toggle N or S, and press E/yes.

Longitude - Right Bottom

Enter the longitude. Press .no to toggle E or W, and press E/yes.

Stored Rectangle

Edit Rectangle See Rectangles above.

Delete Rectangle

At Confirm Delete? press E/yes or .no.

Set Avoid This determines whether a Department will be scanned or not. Temporary Avoids cancel when you cycle power. The default setting is Stop Avoiding. See also Avoiding Transmissions.

Stop Avoiding, Temporary Avoid, or Permanent Avoid

Delete Department< Deletes>

At Confirm Delete? press E/yes or .no.

New Department See New Department<>.

Programming Sites

Contents

New Site/Site Options

Press Menu then scroll to Manage Favorites and press E/yes.

Scroll to the Favorites List and press E/yes.

Scroll to Review/Edit System and press E/yes.

Scroll to the System and press E/yes.

Scroll to Edit Site and press E/yes.

To Create a New Site scroll to New Site and press E/yes.

To Edit an Existing Site scroll to the Site and press E/yes.

Note: Not all options will appear for all sites.

Edit Name
Set Site Quick Key
Set Site Type
Set Modulation
Set Attenuator
Set Avoid
P25 Threshold Mode
P25 Threshold Level
Delete Site

Edit Band Plan | Set Location Information | New Site
Set Frequencies | P25 Waiting Time

Edit Name
See Data Naming. Tip: add QK number to name.

Set Site Quick Key This assigns a QK to the Site and the scanner will scan the Site when the key is enabled. The default setting is . (no QK).
If you don't assign a QK to a Site, it will always be scanned unless you Avoid it.
Scroll to the QK number (0-99 or . for no QK)
Note: Pressing the first number of a 2-digit QK will get you closer, 1 for 10, 2 for 20, etc., then scroll to second digit.

Set Site Type (EDACS Only) EDACS Wide is the same as EDACS Standard and uses a 9600 baud control channel. EDACS Narrow-band sites use a 4800 baud control channel. The default setting is Wide.
< (Standard) Wide>Wide or Narrow

Edit Band Plan (Motorola/P25 Only) Band plans are required so the scanner can correctly determine the voice channel frequencies.
P25 Systems
Explicit mode systems (which comprise most systems in use) include all information needed to determine voice frequencies on the control channel, leave all entries blank. The system will automatically detect the band plan and fill in the entries. *Implicit* systems need you to supply the systems band plan with the Custom option for the scanner to correctly determine voice frequencies.
Select Plan - Scroll to each Band Plan 0-9, A-F, and press E/yes.
Input Base Freq - Enter the base frequency press E/yes.
Input Spacing - Enter the step size and press E/yes.
Press Menu to return and repeat for each band plan as needed.

Motorola Systems
800/900 Standard or 800 Splinter (analog 800Mhz systems with frequencies between 866-869 MHz [or rebanded 851-854 MHz] ending with 0 instead of 5 e.g. 852.1250, not 852.1375).
The scanner will use the regular Motorola band plan.

Motorola Rebanded and Motorola/VHF/UHF Systems
Custom band plans require that you enter both a lower and an upper base frequency value. The l*ower base frequency* (or base) is always the base frequency as provided in the Radio Reference Database.
Use this Excel spreadsheet to calculate the *upper base frequency* value. If you don't have Excel you can download and install a viewer here.
The upper base frequency can also be found using the Band Plan Calculator at the online Wiki.
For Standard 800 MHz Rebanded Systems, you need to set Band Plan 1 and Band Plan 2 as follows:

Band Plan	Lower Base Freq	Upper Base Freq	Offset	Polarity	Spacing
1	851.025	854.000	440	+	25 kHz
2	851.0125	868.9875	0	+	25 kHz

Select Plan 1-6 Select for each Band Plan.
Set Base Freq
Input Lower - Enter the lower base frequency and press E/yes.
Input Upper - Enter the upper base frequency and press E/yes.
Set Offset
Input Offset - Enter the offset and press E/yes.
Select Polarity - Scroll to + (default) or - and press E/yes.
Set Spacing - Scroll to the step size and press E/yes.
Press Menu to return and repeat for each band plan as needed.

Set Frequencies This is where you program trunking frequencies for the Site.
New Frequency/Edit Frequency. Enter the frequency and press E/yes.
For EDACS and LTR sites only:
Input LCN - Enter the LCN number and press E/yes.
Delete Frequency
At Confirm Delete? press E/yes or .no.

Set Modulation (no P25/One Freq) This setting selects the modulation used for the Site. The default setting is Auto. See also Site Modulation.
Auto, NFM, or FM

Set Attenuator This setting controls whether the scanner attenuates signals on the Site by about 20dBs. The default setting is Off. See also Attenuation.
On or Off

Set Avoid< a This or scanned be will whether determines not. Site> This determines whether a Site will be scanned or not. Temp< a This or scanned be will whether determines not. Site>orary

Avoids cancel when you cycle power. The default setting is Stop Avoiding. See also Avoiding Transmissions.
Stop Avoiding, Temporary Avoid, or Permanent Avoid

Set Location Information This allows you program a location for the Site to use with Use Location Control enabled or with a GPS. You can program a circle with a radial range or multiple rectangles as a location.
See Set Up GPS first to setup your GPS format.

Circle
Set Latitude
Enter the latitude. Press .no to toggle N or S, and press E/yes.
Set Longitude
Enter the longitude. Press .no to toggle E or W, and press E/yes.
Set Range See also Understanding Range.
0-6000.
Rectangles
New Rectangle
Latitude -Top Left
Enter the latitude. Press .no to toggle N or S, and press E/yes.
Longitude -Top Left
Enter the longitude. Press .no to toggle E or W, and press E/yes.
Latitude - Right Bottom
Enter the latitude. Press .no to toggle N or S, and press E/yes.
Longitude - Right Bottom
Enter the longitude. Press .no to toggle E or W, and press E/yes.
Stored Rectangle
Edit Rectangle See Rectangles above.
Delete Rectangle
At Confirm Delete? press E/yes or .no.

P25 Waiting Time (Motorola Only) This setting gives the scanner time to determine if channels on mixed Motorola Systems have digital or analog transmissions. During this time, the scanner will evaluate the received signal and, if it detects digital data, will open squelch immediately. If digital is not detected before the delay expires, the scanner will open squelch at the end of this delay. This is to prevent "false decode" problems. This setting only affects channels with an Audio Type set to All. The default setting is 400 ms.
0 to 1000
Note: Any analog transmissions will lose the first part of the transmission, up to the wait time you set here.

P25 Threshold Mode (Motorola/P25 Only) This mode sets the algorithm for P25 decode [1]. The default setting is Auto.
Auto - Automatically sets the decode threshold based on received signal.
Manual - Allows you to manually set the threshold by using the P25 Threshold Level setting (below) or P25 Adjustment Mode.
Default - Sets the scanner to the default threshold of 8, Auto.

P25 Threshold Level (Motorola/P25 Only) Sets the RSSI value below which the scanner will not attempt to make P25 fine tune adjustments. If the signal is too low, RX reliability is not high enough to make P25 adjustments correctly [1]. The default setting is 8.
<>0 to 20

Delete Site<>
At Confirm Delete? press E/yes or .no.

New Site See New Site.

Programming Frequencies/TGIDs

Contents

Quickly Storing a Frequency/ID

In Scan Mode press Channel to hold on any channel.
Enter the Frequency or ID and press E/yes.
See also Edit Frequency or ID.

Notes: You can also save any Frequency/ID in the display by pressing E/yes.
You have to enter a TGID/frequency in the proper format for the system you are holding on. Example: You can't enter a Motorola Type II TGID when holding on an LTR system.
Quick Save is not allowed for I-Call IDs.

Store a Frequency into a "Quick Save" Favorites List

At Quick frequency save? Press ***E/yes***.
The scanner will save the Frequency in a Favorites List called Quick Save Favorites List, in a System called Quick Save System, in a Department called Quick Save Department (with no quick keys assigned).

Store a TGID into a "Quick Save" Department in Current System

At Quick TGID Save? Press ***E/yes***.

The scanner will save the ID in a Department called Quick Save Department (with no quick key assigned) in the current system.

Store a Frequency or ID into an Existing Favorites List

At Quick frequency/TGID Save? Press ***.no***.

Select Favorites List Scroll to the Favorites List and press E/yes.

Select System Scroll to the System and press E/yes.

Select Department Scroll to the Department and press E/yes.

After storing the Frequency/ID, you will be at the Channel Options menu to complete the settings for the new channel. If you don't want to edit the channel settings press Avoid to return.

New Channel/Channel Options

Press Menu then scroll to Manage Favorites and press E/yes.

Scroll to the Favorites List and press E/yes.

Scroll to Review/Edit System and press E/yes.

Scroll to the System and press E/yes.

Scroll to Edit Department and press E/yes.

Scroll to the Department and press E/yes.

Scroll to Edit Channel and press E/yes.

To Create a New Channel scroll to New Channel and press E/yes.
At Input Frequency/TGID enter the frequency or ID and press E/yes.
See also Edit Frequency or ID<>

To Edit an Existing Channel scroll to the Channel and press E/yes.

Note: You can also edit any Channel in the display by pressing E/yes.

Note: Not all options will appear for all channels.

Contents

Edit Name
Edit Frequency or TGID
Set Audio Type
Set Channel Number Tag
Set Modulation
Set Attenuator
Set Service Type
Set Delay Time
Set Priority
Set Alert
Set Avoid
Volume Offset
Delete Channel
New Channel

Edit Name

See Data Naming.

Edit Frequency or TGID See also Entering IDs for Partial IDs.

Enter the frequency or ID and press E/yes to save.

To enter a Conventional Frequency, enter the Frequency and press E/yes.
To enter a Motorola Type II ID, enter the ID and press E/yes.
To enter a Motorola Type I ID, enter the Block Number and Fleet Number, press .no ***twice*** for a hyphen, then enter the Subfleet and press E/yes.
To enter an EDACS ID in AFS format, enter the Agency Number, press .no twice for a hyphen, then enter the Fleet and Subfleet and press E/yes.
To enter an EDACS ID in Decimal format, enter the ID and press E/yes.
To enter a LTR ID, enter the Area Code (0 or 1), enter the Home Repeater Number (01-20), then the User ID (1-254) and press E/yes. Example: 001134.
To enter an I-Call ID, press .no once for an 'i' then enter the ID and press E/yes.
To enter a Wildcard I-Call (any) ID, press .no once for an 'i' then enter 0 and press E/yes.
To enter Hexadecimal IDs, see Data Naming< see>.
To enter a Unit ID, see Edit Unit IDs.

Notes: If the channel is already stored in the group TGID or Frequency Exists Accept? (Y/N) appears. Press .no to return. You can also Avoid wildcard and partial IDs.

Set Audio Type (Conventional/Motorola Only) Select All if this channel might contain both digital and analog signals. If you are *sure* the channel is analog, set the channel to Analog Only. This will prevent the P25 Waiting Time for the conventional system or Motorola site from losing the first part of the transmission up to the wait time you set there.

All - The scanner determines whether the audio is analog or digital.

Digital Only - The scanner will receive the channel *only* if it is carrying APCO 25 digital audio.

P25 NAC Option **(Conventional Only)**
Search - the scanner searches and displays any NAC tone received.
Set P25 NAC - allows you to program a NAC code. See Data Naming.
Note: You can also store a (blinking) NAC code when receiving the frequency in scan mode by pressing E/yes.
Analog Only - The scanner will *only* receive analog audio.
Set CTCSS/DCS (Conventional only)
Search - The scanner searches and displays any CTCSS or DCS tone.
Note: You can also store a (blinking) CTCSS/DCS tone when receiving a frequency in scan mode by pressing E/yes.
CTCSS - Scroll to the desired CTCSS tone. Press E/yes to save.
DCS - Scroll to the desired DCS code. Press E/yes to save.
Set Lockout - Scroll to CTCSS or DCS and press E/yes.
Scroll to the desired tone you want avoided and press E/yes to save.

Set Channel Number Tag<> This allows you to number a Channel so you can access it quickly from Channel Hold Mode. The default setting is no number tag (blank). See also Using Number Tags.
Enter the number tag (0-999) (Press .no to clear display).

Set Modulation (Conventional Only) <>This setting selects the modulation used for the channel. The default setting is Auto. See also Channel Modulation.
<>Auto, AM, FM, NFM, WFM, or FMB (FM Broadcast)

Set Attenuator (Conventional Only) This setting controls whether the scanner attenuates signals on the Channel by about 20dB. The default setting is Off. See also Attenuation.
<>On or Off

Set Service Type<> This sets the Service Type for The Channel. The Appendix has a list of Service Types and their general descriptions. Default is Custom 1.
Scroll to the Service Type and press E/yes.

Set Delay Time <>This sets (in seconds) the amount of time the scanner stays on a channel after the transmission has ended before moving to the next channel. A negative delay will force a resume after that number of seconds. The default setting is 2 seconds.
-10 -5, 0, 1, 2, 3, 4, 5, 10, or 30 sec.

Set Priority <>This sets the channel as a priority channel while scanning. The default setting is Off. Note: To use Priority ID Scan you must also enable Priority ID Scan for ***each*** System. See also Priority Scanning.
<>On or Off

Set Alert <>This setting controls when and how the scanner alerts you if the channel becomes active. The default setting is Off.
<> <>Set Alert Tone
<> <>Alert 1-9 or Off.
<> <>Set Level
<> <>Level 1-15 or Auto (the master volume level).
<> <>Set Alert Light
<> <>Set Color
<> <>Off, Blue, Red, Magenta, Green, Cyan, Yellow, or White.
<> <>Set Pattern
<> <>On, Slow Blink, or Fast Blink.

Set Avoid This determines whether a channel will be scanned or not. Temporary Avoids cancel when you cycle power. The default setting is Stop Avoiding. See also Avoiding Transmissions.
Stop Avoiding, Temporary Avoid, or Permanent Avoid

Volume Offset This sets the Volume Offset for the Channel. S< the sets This Channel. for Offset Volume>ee also Channel Volume Offset.
-3, -2, -1, 0, +1, +2, or +3

Delete Channel<>
At Confirm Delete? press E/yes or .no.

New Channel See New Channel.<>

Set Scan Selection

Contents

Press Menu then scroll to Set Scan Selection and press < E>E/yes.

Scroll to the options below and press E/yes.

Select Lists to Monitor This setting enables or disables your Favorites Lists, Search with Scan, and the Database for scanning. You must first enable each list here, before you can enable the quick key for the list or you will see Nothing to Scan. Note: You will need to set a location to enable the Full Database.
Scroll to each Favorites List, the Full Database, or Search with Scan and press E/yes to enable or disable.
For Search with Scan, see also Search with Scan and Edit Custom Search.

Manage Quick Key Status This is one way to enable or disable your System QK's and Favorites Lists QK's. The other way is using the number keys on the keypad. < to is System or This your disable enable way one>< and Favorites Lists s>
Department/Site QK's can *only* be enabled/disabled with the keypad. See also Selecting Quick Keys.

Favorites Quick Key

Scroll to each Favorites List QK and press E/yes to enable or disable.

System Quick Key

Scroll to each Favorites List and press E/yes.

Favorites List

Scroll to each System QK and press E/yes to enable or disable.

Set Nationwide Systems (Full Database Only) *This setting enables or disables Nationwide Systems in the Full Database, only when the Full Database is being scanned.*
Scroll to each Nationwide System and press E/yes to enable or disable.

Set All Lists Off/On These settings disable or enable all Favorites Lists, Search with Scan, and the Full Database for scanning.
Press E/yes to toggle each setting.

Manage Full Database

Contents

Press Menu then scroll to Manage Full Database and press E/yes.

Scroll to the options below and press E/yes.

Review Avoids You can review all Database Avoids and Stop Avoiding each one. Temporary Avoids appear reversed in the display-AVOID. Note: The Full Database must be enabled to Review Avoids.
See also Review Scan Avoids.
Scroll to each System, Department, or Channel and press E/yes to stop avoiding.

Stop All Avoiding This will stop avoiding all Systems, Departments, Sites, and Channels in the Full Database. See also Clear All Scan Avoids.
At Confirm? press E/yes or .no.

Information This will show the database version in the scanner.

Using Startup Keys

Contents

You can program each of your Favorites Lists with a Startup Key (0-9) so that when you power up the scanner and press the key number, just those Favorites List(s) assigned to the key will be enabled for scan. Systems are not affected. Caution: If you press the wrong key when you press the power key to set your startup configuration, and that wrong key doesn't have any Favorites Lists assigned to that key, you will start up your scanner with all systems Avoided-Nothing to Scan. You will have to re-power the scanner with the correct Startup Key, or re-enable them in Set Scan Selection>Select Lists to Monitor.

1. Turn the scanner off.
2. *Press and hold* the number key that corresponds to the startup key when you turn the scanner on.
3. Continue holding the number key until the scanner display shows the number of the startup key configuration.

When you use Startup Configuration, the scanner checks all Favorites Lists and:

1. Favorites Lists that are assigned to the Startup Key pressed are changed to Monitor Status On.
2. Favorites Lists that are *not* assigned to the Startup Key pressed are changed to Monitor Status Off.

Priority Scanning

Contents

Conventional Priority Scan When the scanner is scanning a *Conventional* System, it interrupts scanning, based on the Priority Interval and Max Channels settings, to check priority channels for activity. The more channels you have set to priority, the longer the interruption will be. The Favorites List(s) and System(s) containing the priority channel(s) have to be enabled (and not Avoided) or the scanner will display Priority Scan No Channel.

Conventional Priority DND The scanner checks priority channels, based on the Priority Interval and Max Channels settings, only when *not* receiving other conventional channels so there is no interruption in scanning with conventional systems.

Priority ID Scan This function is similar to conventional priority although there is no interruption during the transmission. Priority ID Scan is always on for a system if enabled in the system setting. Priority is checked in between transmissions, when the scanner is receiving the control channel, and during the channel delay period. The scanner can only look for priority IDs in the trunked system it is *currently* scanning.

Preemptive Priority ID Scanning For Motorola systems that have channel priority active on the system, if you flag a channel as priority and the system also has that TGID identified as a priority channel, the scanner will preempt any current transmission if the TGID becomes active.

The highest priority is for channels in System QK 0. The lowest priority is for channels in System QK 99. Priority for channels in the same Department follows the order in which they were created.

To use Priority Scan you must first set your Priority Channels.

To use Priority ID Scan you must also enable Priority ID Scan for *each* system.

To Toggle Priority Modes press Func then .no(Pri) to select On, DND On, or Off.

Priority Options

Press Menu then scroll to Priority Scan and press E/yes.

Set Priority Sets the Priority Mode. You can also toggle these modes in Scan mode by pressing Func then .no(Pri).

Off - The Priority feature is off.

Priority DND - The scanner checks Priority channels only when *not* receiving other conventional channels.

PRI appears in the display *reversed*-PRI.

Priority Scan - The scanner checks conventional priority channels.

PRI appears in the display.

Set Interval This sets (in seconds) how often the scanner will check the priority channels.

1-10 sec.

MaxChannels/Pri-Scan This sets the maximum number of priority channels that are scanned during one priority scan interrupt. If there are more priority channels than the value you select, the channels are divided into more than one group and the scanner scans each group in turn. Example: If you set the maximum channels to 20 and there are 100 priority channels, the scanner checks those 100 channels in groups of 20 and takes a total of 5 intervals to complete the priority scan.

1-100

Scanning Order

Contents

With previous scanners, you selected banks to scan. With this scanner, you select Favorites Lists, Systems, Departments, and Sites to scan by assigning Quick Keys to them. See also Understanding Quick Keys.

Scanning is performed with a mixture of FLQK order *and* SQK order. The scanner will *not* scan all Systems in one Favorites List and then move to the next List.
For each Favorites List, starting with 0, the scanner will scan each 0 SQK in FLQK order and then move to the next set of SQK's for each list. All Department and Site QK's are scanned with each System.

Example:
FLQK 0, SQK 0, DQK 0-99; FLQK 1, SQK 0, DQK 0-99….
FLQK 98, SQK 99, DQK 0-99; FLQK 99, SQK, 99, DQK 0-99.
Systems, Departments, and Sites with the same QK are scanned in order of creation.
Conventional Channels in Departments are also scanned in order of creation.

The Database is scanned next, in order of creation. Then, Systems with no QK (including created Quick Save Systems) are scanned in order of creation.

Next, the 'Search with Scan' System, containing any Custom Searches or the Close Call Hits Department, is scanned in order (if Unavoided, Hits with Scan last). 'Close Call Hits' is a special department that automatically stores the frequencies found by Close Call. If the 'Close Call Hits' department has no frequencies, the scanner will not scan the system.

The scanner scans a system for the duration you set using the System Hold Time option. For trunked systems, the scanner moves to the next system after the hold time expires, the current transmission ends, and the channel delay expires. Conventional systems operate similarly, but all (Unavoided) channels are scanned at least one time regardless of the hold time setting.

IDs are not really scanned. The scanner checks for any activity in the trunking system and:
Will display *all* IDs when ID Search Mode is set to On.
Will display *only programmed* IDs when ID Search Mode is set to Off.

Scanning

Contents

Scanning Checklist:
1. A location has to be set in Set Your Location to monitor the Database.
2. You must enable at least one Favorites List or the Full Database in Select Lists to Monitor.
3. Favorites Lists or Systems with QK's assigned to them must be enabled with QK's *or* in Manage Quick Key Status.

4. Make sure ID Search is On for the system *if* no IDs are programmed.
5. Service Types for the channels you want to monitor must be set to On.
6. Any FL with Use Location Control set to On must have locations programmed for the Departments and/or Sites.

Any Favorites List *not* assigned to a quick key, not Avoided, *and* set to *On* in Select Lists to Monitor *will* be scanned.

Any System, Department, or Site not assigned to a QK and not Avoided, will be scanned.

If you are programming everything in Sentinel first and sending it to the scanner:

Edit Profile>Scan Selection tab: Make sure 'Monitor' and 'Download' are On for FL's you want to scan. Check or uncheck 'Monitor Full Database'.

Edit Profile>Service Types tab: Make sure Service Types you want to monitor are checked. Custom 1 is needed for miscellaneous channels.

Edit Profile>Location Settings tab: Make sure you have a location programmed for scanning the Full Database or FL's with 'Use Location Control' set to On.

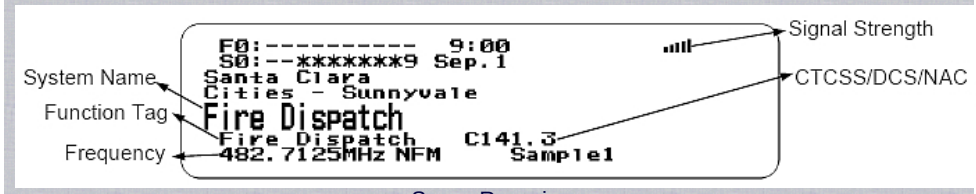
Edit Profile>Quick Key Status tab: Make sure FLQK's are checked for FL's you want to monitor.

Edit Favorites List>System QK Status tab: Make sure SQK's are checked for systems you want to monitor.

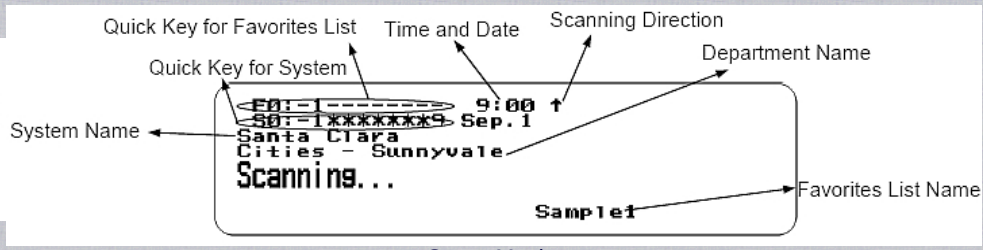
Edit Favorites List>System>Options tab: Make sure 'ID Search' is On *if* no IDs are programmed.

Edit Favorites List>System>Dept/Site Quick Keys Status tab: Make sure Department/Site QK's are checked for departments/sites you want to monitor.

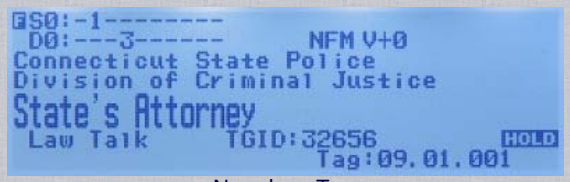
Edit Favorites List>System>Dept/Site>Location tab: Make sure Departments/Sites have locations programmed *if* 'Use Location Control' is set to On for the FL.



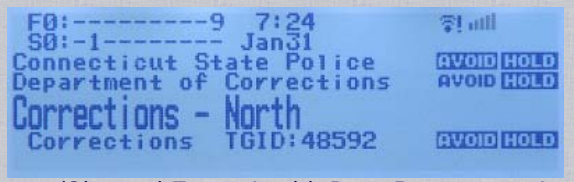
Scan Receive



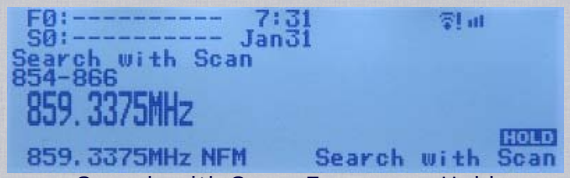
Scan Mode



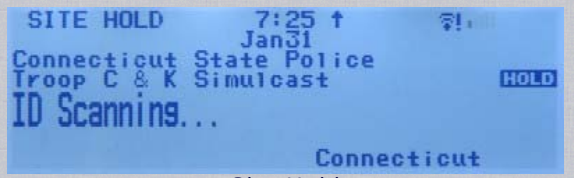
Number Tag



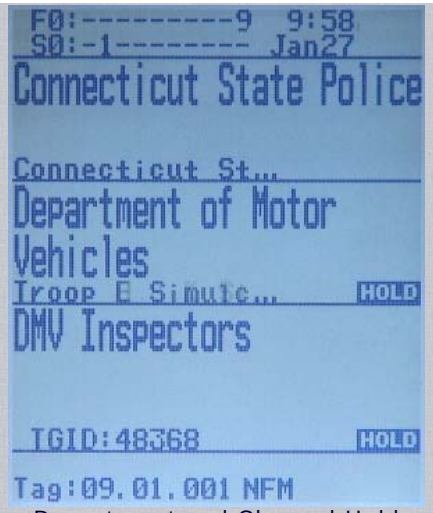
System/Channel Temp Avoid, Dept Permanent Avoid



Search with Scan, Frequency Hold

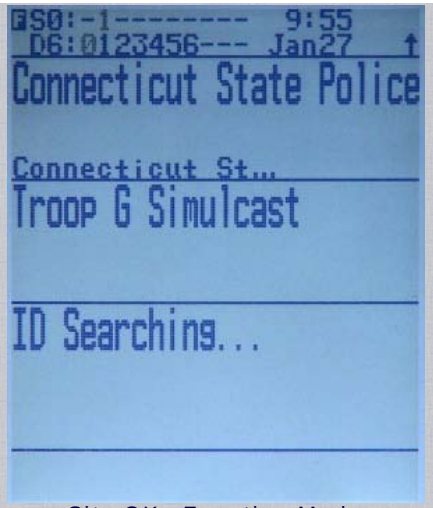


Site Hold



Department and Channel Hold

System Pause



Site QK - Function Mode

Department QK - Hold Mode

Change Direction or Resume Scan

Turn the Scroll Control.

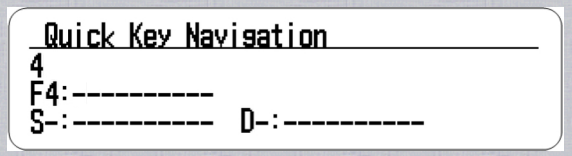
Contents

Selecting Quick Keys Leading 0's not required but will show QK status.

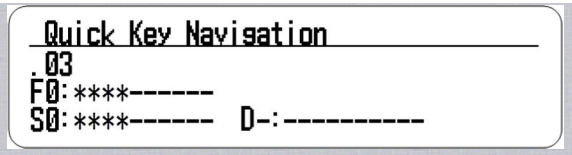
See also View Current QK Status and View Any QK Status. See also Understanding Quick Keys.

Notes: You can press Menu or Avoid to cancel entry. If you make a mistake entering numbers, you can use the scroll control to backup and correct entries.
If you disable all System QK's *or* all Department/Site QK's in a Favorites List, you will need to use the full entry to enable the QK. Example: 3.1.4 to enable Department/Site QK 4. (..4 won't work).

Favorites List Quick Key Press the number key(s) assigned to the Favorites List, then press E/yes.
Example: 4, E/yes toggles FL 4.

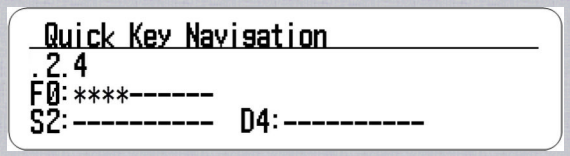


System Quick Key in the ***Current List*** Press .no, the number key(s) assigned to the System(s), then E/yes.
Example: .3, E/yes toggles *all* Systems with SQK 3.



System Quick Key in a ***Different List*** Press the number key(s) assigned to the Favorites List, .no, the number key(s) assigned to the System(s), then E/yes.
Example: 0.4, E/yes toggles *all* Systems with SQK 4 in FL 0.

Department/Site Quick Key in the ***Current List*** Press .no, the number key(s) assigned to the System(s), .no, the number key(s) assigned to the Department(s) or Site(s), then E/yes.
Example: .2.4, E/yes toggles *all* Departments/Sites with QK 4, in *all* Systems with SQK 2.



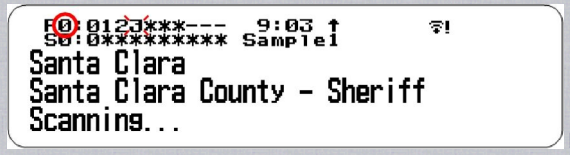
Department/Site Quick Key in a ***Different List*** Press the number key(s) assigned to the Favorites List, .no, the number key(s) assigned to the System, .no, the number key(s) assigned to the Department(s) or Site(s), then E/yes.
Example: 3.1.4, E/yes toggles *all* Departments/Sites with QK 4, in *all* Systems with SQK 1, in List 3.

Department/Site Quick Key in the ***Current System*** Press .no *twice*, the number key(s) assigned to the Department(s) or Site(s), then E/yes.
Example: ..3, E/yes toggles *all* Departments/Sites with QK 3.

View Current QK Status

Scan Menu
Contents

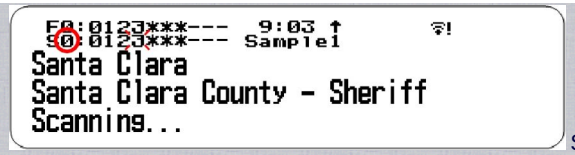
F#: Favorites List QK - F# is first digit of FLQK. Blinking number on the right is second digit of current FLQK in Scan/Receive modes.



FLQK 3 active.

F0: 0 1 2 3 * * * - - - indicates:
FLQK's 0-3 are On in Select List to Monitor and On in Set Quick Key Status.
FLQK's 4-6 are On in Select List to Monitor and Off in Set Quick Key Status.
FLQK's 7-9 are Off in Select List to Monitor (or not assigned).

S#: System QK - S# is first digit of SQK. Blinking number on the right is second digit of current SQK in Scan/Receive modes.



System QK 3 active.

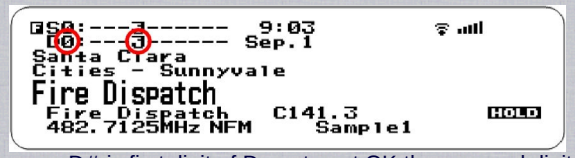
S0: 0 1 2 3 * * * - - - indicates:
SQK's 0-3 are On in Set Quick Key Status.
SQK's 4-6 are Off in Set Quick Key Status.
SQK's 7-9 are not assigned.

D#: Site QK - Press Func to display *Site* QK in *Scan* mode. D# is first digit of Site QK. Blinking number on the right is second digit of Site QK. System QK for the Site is shown above.

Site QK 52 active.

D5: 0 1 2 3 * * * - - - indicates:
Site QK 50-53 are On using the keypad.
Site QK 54-56 are Off using the keypad.
Site QK 57-59 are not assigned.

D#: Department QK - Conventional System - Press Func to display *Department* QK in Scan/Receive/Hold modes.
Trunked System - Press Func to display *Department* QK in *(Channel) Hold* mode.



D# is first digit of Department QK then second digit of Department QK on the right. System QK for the Department is shown above.
D0: - - - 3 - - - - - - indicates:
Department QK 3 is current in System QK 3.

View Any QK Status Use the examples below. Press Avoid to exit the QK Navigation screen, or .no until display clears.
Leading 0's required to view complete status.

Scan Menu
Contents

.. shows status of SQK's in current FL.
..# shows status of Department/Site QK's #0-#9 in current System.

FLQK's 0-9 - Press 0.

FLQK's 0-3 On, 4-6 Off (in Set QK Status), 7-9 Off (in Select Lists to Monitor or not assigned).

FLQK's 10-19 - Press 1.

FLQK's 10-13 On, 14-19 Off (in Select Lists to Monitor or not assigned).

FLQK 0 - SQK's 0-9 Press 0.0.

SQK's 0-3 On, 4-9 not assigned.
FLQK 0 On.

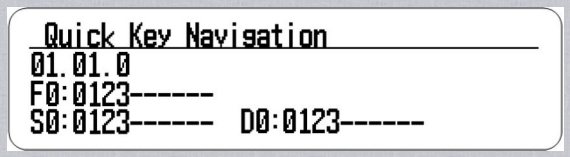
FLQK 33 - SQK's 40-49 Press 33.4.

SQK's 40-43 On, 47-49 not assigned.
FLQK 33 On.

FLQK 0 - SQK 0 - Dept/Site QK's 0-9 Press 0.0.0.

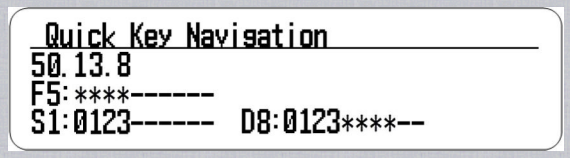
Dept/Site QK's 0-3 On, 4-7 Off, 8 and 9 not assigned.
SQK 0 On.
FLQK 0 On.

FLQK 1 - SQK 1 - Dept/Site QK's 0-9 Press 01.01.0.



Dept/Site QK's 0-3 On, 4-9 not assigned.
SQK 1 On.
FLQK 1 On.

FLQK 50 - SQK 13 - Dept/Site QK's 80-89 Press 50.13.8.



Dept/Site QK's 80-83 On, 84-87 Off, 88 and 89 not assigned.
SQK 13 On.
FLQK 50 Off (in Set QK Status).

Scan Menu Contents

Select Service Types

(BCD536HP) Press Serv.
(BCD436HP) Press Func then Zip/Services.
Scroll to each Service Type and press E/yes to enable or disable.

Toggle Display Modes

Press Channel to hold on any channel and press Func then 9(DISP).
Press Channel to resume.
With the BCD536HP, you can turn 3-Line Display on and off.
With the BCD436HP, you can toggle Unit ID display or Channel Service Type.

Toggle ID Scan or ID Search

While scanning *each* Trunked System, press Func then E/yes.
Note:< available Search> ID Search is not available with the Database.

Replay the Last Transmissions

Your scanner Replay feature acts as an instant replay of the transmissions you've just heard. You can set how long a period Replay records from 30 seconds to 240 seconds (4 minutes). While you can replay those recordings immediately and continue replaying them, you cannot save them for future listening. See also Replay Options.

While scanning, press Replay.
Turn the Scroll Control to select recordings.
Press Channel to pause/resume replay. Press Replay to exit.
Note: Replay is not available when recording is enabled.

Start/Stop Recording

With your scanner, you can record transmissions. When you begin recording, your scanner adds the Replay recording buffer to the recording. These recording sessions are saved and can be replayed on demand. See also Replay Options<>.

While scanning, press Func then Replay. Resets to Off when you turn off the scanner.

Review Recordings

While scanning, *press and hold* Replay. Scroll to the session and press E/yes.
At Play Session press E/yes. Turn the Scroll Control to select recordings.
Press Channel to pause/resume recordings. Press Replay to exit.

Scan Hold

Channel Hold

Press Channel to hold on a Channel. You can now scroll all Channels.
Press Channel to release Channel Hold.

Department Hold

Press Dept to pause for 2 seconds then hold on *any* Department.
(Department is reversed in the display for Pause Mode)
Double press Dept to hold< without> without a pause.< without>
Press Dept then *quickly* scroll to any Department in Pause Mode.

Double press Dept to release Department Hold.

System Hold

Press System to pause for 2 seconds then hold on *any* System.
(System is reversed in the display for Pause Mode)
Double press System to hold without a pause.
Press System then ***quickly*** scroll to any System in Pause Mode.
Double press System to release System Hold.

Site Hold

Press Func then Dept <>to hold<> on any Site in the *current* System.
Press Dept then *quickly* scroll to the Site in Pause Mode.
(Site is reversed in the display for 2 seconds in Pause Mode)
Press Func then Dept <>to release Site Hold.

Scan Menu Contents

Avoiding Transmissions

Avoids are common to every System in the Favorites List. Temporary Avoids cancel when you cycle power. See also Review Scan Avoids.

Channel Avoid

When the Channel is in the display or in Channel Hold Mode:
To Temporary Avoid press Avoid.
To Permanent Avoid press Avoid twice *quickly*.

Department Avoid

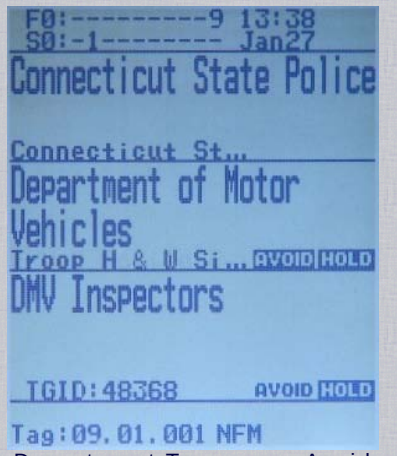
When the Department is in the display or Department Hold Mode:
To Temporary Avoid press Dept then *quickly* press Avoid.
To Permanent Avoid press Dept then *quickly* press Avoid *twice*.

System Avoid

When the System is in the display or in System Hold Mode:
To Temporary Avoid press System then *quickly* press Avoid.
To Permanent Avoid press System then *quickly* press Avoid *twice*.

Site Avoid

In Site Hold Mode (Func then Dept):
To Temporary Avoid press Dept then *quickly* press Avoid.
To Permanent Avoid press Dept then *quickly* press Avoid *twice*.
Press Func then Dept to release Site Hold.



Department Temporary Avoid
Channel Permanent Avoid

Store a Channel from the Full Database

See Add to Favorites List in the Advanced Channel Menu below.

Advanced Channel Menu

While the channel is in the display, press E/yes.

Edit Current Channel - See Channel Options.

Add to Favorites List

At Saving channel to Favorites List, press E/yes.
Scroll to the Favorites List and press E/yes.
For a New Favorites List See Data Naming.
The channel will be saved in the new or stored list with the channel's System and Department (and *all* Sites in the System for an ID).

Save Sub Audio/P25 NAC - CTCSS Tone or DCS/NAC Code (blinking).

At Are you sure?, press E/yes.

Save Talk Group ID Into the current System, Unknown Talk Group ID with ID Search.

At Are you sure?, press E/yes.
At Select Department, scroll to the Department and press E/yes.
New Department Data Naming.
After storing the ID, you will be at the Channel Options menu to complete the settings for the new channel. If you don't want to edit the settings press Avoid to return.

Save Unit ID - The Unit ID will be stored in the current system.

At Are you sure?, press E/yes.
After storing the Unit ID, you will be at the Edit Unit ID menu to complete the settings for the Unit ID. If you don't want to edit the settings press Avoid to return.

Store a Search Frequency (Search with Scan)

Scan Menu Contents

Press E/yes. Then see Storing Search Frequencies.

Attenuation

Channel Attenuation - Press Channel to hold on the channel.

Press Func then 4(ATT) to toggle attenuation. Press Channel to resume.

Global Attenuation - Press Channel to hold on any channel.
<>Press Func then *press and hold* 4(ATT) to toggle global attenuation. Press Channel to resume.
ATT<> blinks in the display when global attenuation is on.

Modulation

Conventional Channel Modulation - Press Channel to hold on the Channel. Press Func then Channel(MOD) to toggle modulation.
Press Channel to release Channel Hold.

Site Modulation Press Func then Dept to hold on the Site.
Press Channel to hold<> on any Channel.
Press Func then Channel(MOD)<> to toggle modulation<>< ,>.
Press Channel to release Channel hold<>.
Press Func then Dept to release Site Hold Mode.

Intermediate Frequency Exchange

See also Intermediate Frequency Exchange.
Press Channel to hold on the channel.
Press Func then 7(IFX) to toggle on or off. Press Channel to resume.

View Repeater Frequency for a Conventional Channel

Press Channel to hold<> on the channel.
Press Func then *press and hold* 8(REV<>). Press Channel to resume.

Channel Volume Offset

Press Channel to hold<> on the channel. < the on channel.>
Press Func then press 0(LVL< the on channel.>) to<> toggle +1, +2, +3, -3, -2, -1, or 0. < the on channel.>Press Channel to resume.

Scan Priority Modes

Press Func then .no(PRI<>) to toggle Priority Mode Off, On, or DND On.

Weather Alert Priority

Press Channel to hold on any channel.
Press Func then 6(WX) to toggle on or off. Press Channel to resume.

Close Call Modes

Scan Menu Contents

To toggle CC Off, CC Pri, or CC DND:
(BCD536HP) Press SQ( ).
(BCD436HP) Press Channel to hold on any channel. Press Func then Avoid( ). Press Channel to resume.

Close Call Hit

See Using Close Call.

Wi-Fi-Setup (BCD536HP Only)

Press Channel to hold on any channel.
Press Func then press 5( ).

New Zip/Postal Code Location

(BCD536HP) Press the Zip button.
(BCD436HP) Press Zip/Services.
Select your Country, and enter a zip/postal code. See also Set Your Location.

Set the (Current) Location Range

(BCD536HP) Press the Range button. Enter new range and press E/yes to save.
(BCD436HP) See Set Range.
See also Understanding Range and Understanding Location Control.

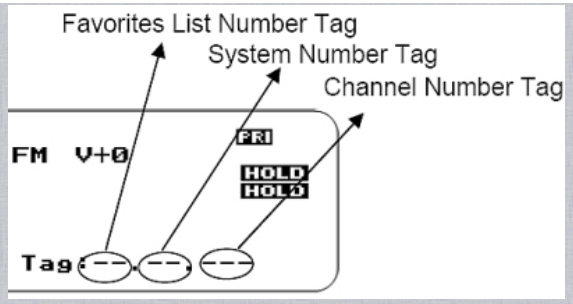
Direct Frequency/ID Entry

Press Channel to hold on any Channel.
Enter the Frequency/ID and press Channel.
Press Func then System to exit.

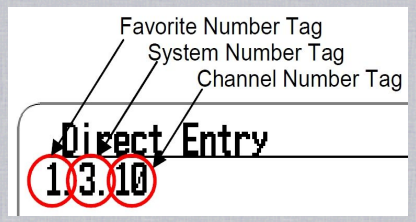
Using Number Tags

If two Favorites Lists have the same number tag, they will be selected in sequence. The first time you select the number tag, the scanner will go to the first Favorites List assigned to that number tag; if you select the same number tag again, it will go to the 2nd Favorites List assigned to that number tag, and so on. The same rule applies to System and Channel number tags (So don't start with 0 for all your systems and channels).

View Number Tags
(BCD536HP) Press Func in Channel Hold/Receive Modes.
(BCD436HP) Number Tag is always displayed.



Go To Number Tag (Leading 0's *not* required)
Press Channel to hold on any channel<>.
Enter the Favorites number tag, .no, the System number tag, .no, then the Channel number tag and press Channel.
Press Channel to resume.<>
Examples:
2.5.6< 6 Channel go> <>to go to Channel 6 in System 5 in Favorites List 2.< 6 Channel go>
1.10.36< 10 36> <>to go to Channel 36 in System 10 in Favorites List 1.< 10 36>
.10.36 *<>to go to Channel 36 in System 10 in current Favorites List.*
..36 *<>to go to Channel 36 in current System.*
2. *to go to Favorites List 2 (1st channel in 1st department in 1st system)<>.*
2.5. *to go to System 5 in Favorites List 2 (1st channel in first department).*



Review Scan Avoids (BCD536HP Only) You can Review Avoids for the Database *or* for *each* Favorites List.

Scan Menu Contents

Press Channel to hold on any channel.
Press Func then Avoid and scroll to select each Avoid. Temporary Avoids appear reversed in the display-AVOID.
Press E/yes to Stop Avoiding.
Press Avoid to return. Press Channel to release Hold Mode.
See also Manage Full Database< and> and Manage Favorites Lists. See also System Options<> to review ID Avoids.

Clear Scan Avoids in Current System

Press Channel to hold on any channel in the current System.
Press and hold Avoid.
Press Channel to release Hold Mode.

Clear All Scan Avoids (BCD536HP Only) See also Manage Full Database< and> and Manage Favorites Lists.

You can Clear all Avoids for the Database *or* for *each* Favorites List.
Press Channel to hold on any channel in the *current* Favorites List *or* the Database.
Press Func then *press and hold* Avoid.
At Stop Avoiding All Systems?, press E/yes.
Press Channel to release Hold Mode.

Custom Search by Search Quick Key

Press Channel to hold on any channel.
Press Func then 1(SRCH1), 2(SRCH2), or 3(SRCH3), to start a Custom Search, Close Call Only, or Tone-Out Search assigned to a Search Key. Then see Searching.

Quick Search at Current Frequency

Press Channel to hold on the frequency.
Press Func then E/yes. At Quick Search? Press E/yes.

Close Call Only

(BCD536HP) *Press and hold* SQ(◎).
(BCD436HP) Press Func then *press and hold* Avoid(◎).

Weather Scan

Press Channel to hold on any channel.
Press Func then *press and hold* 6(WX).

Tone-Out Standby/Search

(BCD536HP Only) Press Func then SQ.
(BCD436HP) Assign Tone-Out Standby/Search to a Search Key.

P25 Adjustment Mode

Scan Menu Contents

You may be able to optimize the scanner's performance with digital APCO 25 frequencies.

These steps work only when you can clearly receive the frequencies. If you are in a weak-signal area or receive interference, these steps will not work. These steps do not compensate for weak signals or signals subject to interference.

If you set an incorrect decode threshold level, the scanner might stop decoding digital signals. If this happens, change the P25 Threshold Mode to Auto then repeat these steps.

Set the P25 Threshold Mode to Manual in Site Options for the Site, System Options for any conventional channel in the System, Srch/CloCall Opt, or Edit Custom Search.

Hold on any Site, or digital conventional Frequency.
(BCD536HP) Press Func then Vol.
(BCD436HP) Press Vol then Func then Vol.

The first line on the display now shows the digital error rate and the decode threshold setting (0-20). The second line on the display shows the decode threshold levels.

Allow the scanner to monitor the site or frequency for several minutes. The error rate should drop for each transmission and the threshold levels should automatically adjust to a more optimal setting. Then, once the threshold level settles to a stable setting, make a note of the value. This is the site's or frequency's optimum decode threshold.

Press Func and rotate the Scroll Control to set the decode threshold start level to a setting that most closely matches the optimum decode threshold. Whatever you set at this point will be remembered as the starting point for the auto-tuning function for subsequent transmission.

To exit P25 Adjustment Mode:
(BCD536HP) Press Func then Vol.
(BCD436HP) Press Vol.

Using a GPS

Contents

You can connect the scanner to a compatible GPS device and set the scanner to automatically Avoid and Unavoid Departments and Sites based on your current location. This frees you from having to manually enable and disable Departments and Sites as you change locations. All Sites/Departments with locations set and not within range of your current location will be temporarily Avoided. All Sites/Departments *without* locations set will still be scanned.

For all Favorites Lists with 'Use Location Control' set to On, all Sites/Departments with locations set and not within range of your current location will be temporarily Avoided. For all Favorites Lists with 'Use Location Control' set to Off, All Sites/Departments without locations set will still be scanned.

For the BCD436HP, use the 4-pin mini plug to connect to the scanner using a NMEA compatible GPS device. The BCD536HP has a 9-pin RS232 male serial connector and you should select a baud rate of (4800 bps) for the serial port.

A good application of this feature would be to set the longitude and latitude for each multi-site system transmitter as usually you can receive at least a handful in any given location. Set the range to 0 for your location and the scanner will automatically Avoid or Unavoid Sites when in and out of range. It may also be relevant to set different locations/ranges for the *Departments* within the site.

You can find the physical location of antennas using the databases available at Radio Reference or the FCCs Antenna Structure Registration site. Both sites list the latitude, longitude, and height of the antenna and both sites can map the exact location for you.

Once the scanner completes the initial GPS review, if you move into or out of an area covered by a Site/Department, the scanner will Avoid and Unavoid Sites and Departments according to Range settings for the scanner and Sites/Departments. If you cycle power, all Sites/Departments are Unavoided until the scanner reacquires the GPS signal and completes the initial GPS review.

Note: If you unplug your GPS device or it loses reception to satellites, the scanner will use the last known location as the current location.
See also Set Your Location to set your Location, Range, and relevant GPS options and Understanding Location Control and Understanding Range.

Discovery Mode

Contents

Trunking Discovery Mode allows you to monitor a trunked radio Site for channels not currently in the database. It can automatically record audio and log newly discovered channels for later review and identification.

Conventional Discovery Mode lets you monitor a range of frequencies that are not already known to be in use in your area. This includes frequencies used conventionally as well as in trunked radio systems. It can automatically record audio and log newly discovered channels for later review and identification so that you can more easily identify the users.

Both modes allow you to listen while discovering, have the option to compare hits to the Database, and log all hits or just new hits. You can create and save several sessions with different settings.

Every time you start a session you create a Run. Review Discovery allows you to review the Run results, resume Runs, or restart saved Discovery Sessions.

If you use the Auto Store option, Discovery will create a new Favorites List called Trunking Discovery, or Conventional Discovery. Each Session will create a new System, and each Run will create a new Department for IDs or frequencies found.

Before using this mode, set your location and location range, and enable the Database or Favorites Lists to use for Discovery.

New Session

Press Menu then scroll to Discovery and press E/yes.

Scroll to Trunking Discovery or Conventional Discovery and press E/yes.

Scroll to New Session and press E/yes.

Conventional Discovery

Input Session Name - Enter the Name and press E/yes. See Data Naming.

Trunking Discovery

Input System Name - Press E/yes to display *enabled* systems and scroll to system. Press E/yes to select.

Notes: To select the trunked system:
1. The trunked system must be enabled in 'Select Lists to Monitor',
2. The system/site QKs must be enabled for scan in 'Set Quick Key Status' (if assigned to one), and
3. The service types for channels in the system must be enabled.

Select Site - Scroll to the Site to use in the system and press E/yes.

Input Session Name - Enter the Name and press E/yes. See Data Naming.

Session Options

Press Menu then scroll to Discovery and press E/yes.

Scroll to Trunking/Conventional Discovery and press E/yes.

Scroll to the Discovery Session and press E/yes.

Edit Session Name	Set Logging	Set Auto Store
Set Limit Frequencies	Set Compare to Database	Delete Session
Set Modulation	Set Record Duration	Change System
Set Step	Set Time-Out Timer	Start Discovery
Set Delay	System Info	Review Discovery

Edit Session Name<> This allows you to name a Session.
See Data Naming.

Set Limit Frequencies (Conventional Only) This sets the lower and upper frequencies for conventional discovery session.
Set Lower Limit - Enter the lower limit.

Set Upper Limit - Enter the upper limit.

Set Modulation (Conventional Only) <>This sets the modulation for conventional discovery session.
Auto<>, AM, FM, NFM, WFM, or FMB (FM Broadcast)

Set Step (Conventional Only) <>This sets the step size for conventional discovery session.
Auto, 5, 6.25, 7.5, 8.33, 10, 12.5, 15, 20, 25, 50, or 100 kHz.

Set Delay<> This sets the Delay when monitoring a site or frequencies.
0, 1, 2, 3, 4, or 5 sec.

Set Logging<> This will log all hits or just new hits.
< All>All or New Only

Set Compare to Database<> Select On to compare hits against all channels currently enabled (Database and Favorites Lists) and the scanner will not record hits for known channels.<> Only *new* channels will have audio recorded (if recording is enabled). Select Off to treat *all* hits as new channels.
< On>On or Off

Set Record Duration< recorded audio much how> This sets the record duration of the transmission.
None 30, 60, 90, 120, 150, 180, 300, or 600 sec.

Set Time-Out Timer< This> <>This is used to keep a stuck channel from stealing the whole Run in a session<>.
Off, 10, 30, or 60 sec.

System Info (Trunking Only) This will show you the Database used, the system type, system used, and site used.

Set Auto Store This turns Auto Store on and will create a Favorites List called Conventional or Trunking Discovery.
< On>On or Off

Delete Session<> This deletes the session.
At Confirm Delete? Press E/yes or .no.

Change System (Trunking Only) This allows you to select or change the System and Site used for the session.

Input System Name

Press E/yes to display *enabled* systems and scroll to system. Press E/yes to select.
Notes: To select the system:
1. The trunked system must be enabled in 'Select Lists to Monitor',
2. The system/site QKs must be enabled for scan in 'Set Quick Key Status' (if assigned to one), and
3. The service types for the channels in the system must be enabled .

Select Site

Scroll to the Site to use for the session.

Start Discovery

Before using this mode, set your location and location range, and enable the Database or Favorites Lists to use for Discovery.

Press Menu then scroll to Discovery and press E/yes.

Scroll to Trunking/Conventional Discovery and press E/yes.

Scroll to the Discovery Session and press E/yes.

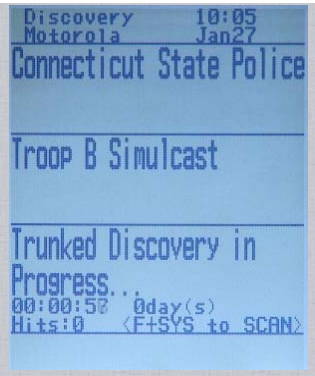
At Start Discovery press E/Yes.

To Exit Discovery Mode press Func then System.

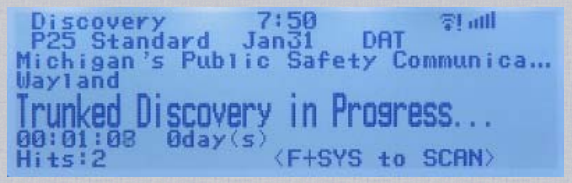
Press Avoid to Avoid a hit.
Press Menu to stop and review the Run information. See Review Discovery.
Press Func then System to exit.

Conventional Discovery

Conventional Discovery



Trunking Discovery



Trunking Discovery

Review Discovery

In Review Discovery mode, you can review the results of discovery mode runs, resume runs, or restart saved discovery sessions. You can download and review sessions in the Sentinel software. You can also listen to recordings from the SD card in "Mass Storage" mode.
See Connecting the USB Cable.

Press Menu then scroll to Discovery and press E/yes.

Scroll to Review Discovery and press E/yes.

Scroll to Trunking/Conventional Discovery Results and press E/yes.

Scroll to select each Run and press E/yes.

Review Run Results

Summary - List by each frequency.

Detail - List by each hit.

Restart this Run - Delete all log files.

Restart? Press E/yes or .no.

Resume this Run - Continue without deleting log files.

Resume? Press E/yes or .no.

Delete this Run

Confirm Delete? Press E/yes or .no.

Rename this Run

See Data Naming.

Run Information

This will show you the location info, range, the Database used, the system used, system type, site used, and other Session options.

Search/Close Call Options

Contents

These are the settings you should look at before you perform a Quick Search, or Close Call Search.

Press Menu. Scroll to Srch/CloCall Opt and press E/yes.

Scroll to the options below and press E/yes.

Freq Avoids
Broadcast Screen
Repeater Find
Set Delay Time
Set Attenuator
Set Audio AGC
P25 Waiting Time
P25 Threshold Mode
P25 Threshold Level

Freq Avoids This allows you to review Avoided Frequencies or Stop Avoiding all Frequencies for Searching and Close Call search. Temporary Avoids are noted with a T.

Stop All Avoiding See also < also See>Clear All Search Avoids.

At Confirm? Press E/yes or .no.

Rvw Search Avoid See also Review Search Avoids.

Scroll to the Frequency and press E/yes to Stop Avoiding.

Broadcast Screen Automatically ignores transmissions that are on common broadcasts, paging systems, and other annoyance radio sources during Custom Search, Quick Search, or Close Call Search. You can select common bands you want to ignore or program custom bands. The default setting is Pager On.

- Set All Band On/Off Turns Broadcast Screen On or Off for All Bands.
- Set Each Band
  - Scroll to each Band and press E/yes to enable or disable.
- Program Band
  - Band 0-9 Select for each band.
    - Set Lower Limit - Input the lower frequency limit.
    - Set Upper Limit - Input the upper frequency limit.
  - Press Menu to return and repeat for each band as needed.

Repeater Find Sets whether the scanner tries to tune to a repeater output frequency when it detects a transmission on a repeater input frequency in Search and Close Call modes. Turning this feature on can let you hear both sides of the conversation on the output frequency. The default setting is Off.

- On or Off

Set Delay Time Determines how long the scanner waits after a transmission ends before resuming Quick Search and Close Call Search operations. A negative delay will force a resume after that number of seconds. The default setting is 2 seconds.

- -10, -5, 0, 1, 2, 3, 4, 5, 10, or 30 sec.

Set Attenuator This controls the attenuator for Quick Search and Close Call operations by about 20dB. The default setting is Off. See also Search Attenuation.

- On or Off

Set Audio AGC This allows you to turn AGC (Automatic Gain Control) on or off for Quick Search and Close Call Modes. The default settings are Off.

- Analog - Press E/yes to toggle On or Off.
- Digital - Press E/yes to toggle On or Off.

P25 Waiting Time This setting gives the scanner time to determine if frequencies have digital or analog transmissions. During this time, the scanner will evaluate the received signal and, if it detects digital data, will open squelch immediately. If digital is not detected before the delay expires, the scanner will open squelch at the end of this delay. This is to prevent "false decode" problems. The default setting is 400 ms.

- 0 to 1000 ms
  - Note: Any analog transmissions will lose the first part of the transmission, up to the wait time you set here.

P25 Threshold Mode This mode sets the algorithm for P25 decode [1]. The default setting is Auto.

- Auto - Automatically sets the decode threshold based on received signal.
- Manual - Allows you to manually set the threshold by using the P25 Threshold Level setting (below) or P25 Adjustment Mode.
- Default - Sets the scanner to the default threshold of 8, Auto.

P25 Threshold Level Sets the RSSI value below which the scanner will not attempt to make P25 fine tune adjustments. If the signal is too low, RX reliability is not high enough to make P25 adjustments correctly [1].
The default setting is 8.

- 0 to 20

Search for... Menu

Contents

Press Menu. Scroll to Search for... and press E/yes.

Scroll to the options below and press E/yes.

Edit Custom Search Set Search Key Search with Scan

Edit Custom Search

You can edit the 10 Custom Search ranges. The default custom search range names appear as Custom 0, Custom 1, and so on. See also Broadcast Screen and Repeater Find.

- Custom 0-9 Select for each Custom Search.
  - Edit Name See Data Naming.
  - Edit Srch Limit
    - Set Lower Limit - Enter the lower limit.
    - Set Upper Limit - Enter the upper limit.
  - Set Delay Time
    - -10, -5, 0, 1, 2, 3, 4, 5, 10, or 30 sec.
  - Set Modulation
    - Auto, AM, NFM, FM, WFM, or FMB (Broadcast)
  - Set Attenuator

On or Off

Set Step

Auto, 5, 6.25, 7.5, 8.33, 10, 12.5, 15, 20, 25, 50, or 100 kHz

Set Audio AGC

Analog - Press E/yes to toggle On or Off.

Digital - Press E/yes to toggle On or Off.

P25 Waiting Time

This setting gives the scanner time to determine if frequencies have digital or analog transmissions. During this time, the scanner will evaluate the received signal and, if it detects digital data, will open squelch immediately. If digital is not detected before the delay expires, the scanner will open squelch at the end of this delay. This is to prevent "false decode" problems. The default setting is 400 ms.

0 to 1000 ms. Note: Any analog transmissions will lose the first part of the transmission, up to the wait time you set here.

P25 Threshold Mode This mode sets the algorithm for P25 decode [1]. The default setting is Auto.

Auto - Automatically sets the decode threshold.

Manual - Allows you to manually set the threshold by using the P25 Threshold Level setting (below) or P25 Adjustment Mode.

Default - Sets the scanner to the default threshold of 8, Auto.

P25 Threshold Level Sets the RSSI value below which the scanner will not attempt to make P25 fine tune adjustments.

If the signal is too low, RX reliability is not high enough to make P25 adjustments correctly [1].
The default setting is 8.

1 to 20

Search with Scan

This setting allows you to enable the Custom Search in the 'Search with Scan' system. See also Select Lists to Monitor and Search with Scan in the Search for... menu.

Set Avoid

Stop Avoiding, Temporary Avoid, or Permanent Avoid

Set Hold Time Sets how long to search.

Enter the hold time 0-255 (sec.) and press E/yes to save.

Note: 0 will scan the complete range.

Set Search Key The scanner has three search keys that you can assign to a search range. The search keys are number keys 1, 2, and 3. This allows you to start a Custom, Tone-Out, or Close Call Search without having to go into the menus.

Search Key 1-3 < search Select>

. (nothing assigned), Custom Search 0-9, Tone-Out, or Close Call.

Search with Scan This is a special system that allows you to include Custom Searches and the 'Hits with Scan' department in Scan Mode. To search and scan at the same time you have to enable Search with Scan in Select Lists to Monitor, "Stop Avoiding" the Search with Scan *System* with this setting, and "Stop Avoiding" each Custom Search *Department* in Edit Custom Search.

Set System Avoid

Stop Avoiding, Temporary Avoid, or Permanent Avoid.

Searching

Contents

Quick Search

Allows you to start searching at the displayed frequency, or enter a frequency and start searching from that frequency in Search Hold or Channel Hold.
Quick Search will search all the way up to 1300 MHz or all the way down to 25 MHz then start over.

To Start a Quick Search from the ***Displayed*** Frequency:

Press Channel to hold on the Frequency.

Press Func then E/yes. At Quick Search? Press E/yes.

To Start a Quick Search from a ***New*** Frequency:

Press Channel to hold on *any* Channel or Frequency.

Enter the new frequency then press Channel to *set* the starting frequency.

Press Channel again to release Hold Mode and start searching.

To exit Searching press Func then System.

Custom Search

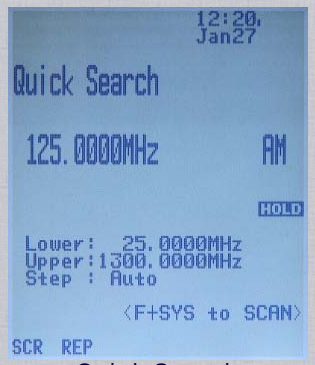
< the frequency 10 search ranges. programmed scanners>Allows you to search the scanners 10 programmed frequency ranges. See also Search/Close Call Options<> and Search for Menu.

Press Menu. Scroll to Search for... and press E/yes.

Scroll to Custom Search and press E/yes.

You can also start a Custom Search assigned to a QK by holding on any Channel in Scan Mode and pressing Func then 1, 2, or 3.

To exit Custom Search press Func then System.



Quick Search

Custom Search

Quick Search

Custom Search

Change Direction or Resume Search

Turn the Scroll Control.

Select Custom Search Bands

Press the number keys to enable or disable each Custom Search band.

Replay the Last Transmissions

Your scanner Replay feature acts as an instant replay of the transmissions you've just heard. You can set how long a period Replay records from 30 seconds to 240 seconds (4 minutes). While you can replay those recordings immediately and continue replaying them, you cannot save them for future listening. See also Replay Options.

While searching, press Replay.
Turn the Scroll Control to select recordings.
Press Channel to pause/resume replay. Press Replay to exit.
Note: Replay is not available when recording is enabled.

Start/Stop Recording

With your scanner, you can record transmissions. When you begin recording, your scanner adds the Replay recording buffer to the recording. These recording sessions are saved and can be replayed on demand. See also Replay Options<>.

While searching, press Func then Replay.
Resets to Off when you turn off the scanner.

Review Recordings

While searching, *press and hold* Replay. Scroll to the session and press E/yes.
At Play Session press E/yes. Turn the Scroll Control to select recordings.
Press Channel to pause/resume recordings. Press Replay to exit.

Frequency Hold

Press Channel to hold on a Frequency.
You can now scroll all Frequencies.
Press Channel to release Hold Mode.

Avoiding Search Frequencies

Avoids are common to all Searches.
Temporary Avoids cancel when you cycle power. See also Review Search Avoids.

To Temporary Avoid press Avoid.
To Permanent Avoid press Avoid twice *quickly*.

Storing Search Frequencies

Store a Frequency into a "Quick Save" Favorites List

Press E/yes when the Frequency is in the display.

At Quick Freq/TGID Save? Press ***E/yes***.

The scanner will save the Frequency in a Favorites List called Quick Save Favorites List, in a System called Quick Save System, in a Department called Quick Save Department (with no quick keys assigned).

Store a Frequency into an Existing Favorites List

Press E/yes when the Frequency is in the display.

At Quick Freq/TGID Save? Press ***.no***.

At Saving channel to Favorites List, press E/yes.

Select Favorites List Scroll to the Favorites List and press E/yes.

For a New Favorites List See Data Naming.

Select System Scroll to the System and press E/yes.

Select Department Scroll to the Department and press E/yes.

After storing the Frequency/ID, you will be at the Channel Options menu to complete the settings for the new channel. If you don't want to edit the channel settings press Avoid to return.

Search Attenuation

Band Attenuation<> Press Func then 4(ATT<>) for each band.
Global Attenuation<> <>Press Func then *press and hold* 4(ATT).
ATT<> blinks in the display when global attenuation is on.

Modulation

Press Func <>then Channel(<>MOD<>)<> for each band<>.

Intermediate Frequency Exchange See also Intermediate Frequency Exchange.

Press Channel to hold on any Frequency.
Press Func then 7(<>IFX) to toggle on or off. Press Channel to resume.

View Repeater Frequency

Press Channel to hold on any Frequency.
Press Func then *press and hold* 8(<>REV). Press Channel to resume.

Weather Alert Priority

Press Func then 6(<>WX) to toggle on or off.

Close Call Modes

To toggle CC Off, CC Pri, or CC DND:
(BCD536HP) Press SQ(). (BCD436HP) Press Func then Avoid().

Close Call Hit See Using Close Call.

Direct Frequency Entry

Press Channel to hold on any Frequency<>
Enter the frequency and press Channel. Press Func then System to exit.

Review Search Avoids (BCD536HP Only)

You can Review Avoids for all Searches including Close Call. See also Freq Avoids.
Press Channel to hold< Mode. any on in Search Frequency> on any Frequency in any Search Mode. < Mode. any on in Search Frequency>
Press Func then Avoid and scroll to select each Frequency.
Temporary Avoids are noted with a T.
Press E/yes to Stop Avoiding.
Press Avoid to return. Press Channel to release Hold Mode.

Clear All Search Avoids

Press Channel to hold<> on any Frequency in any Search Mode. <>
Press and hold Avoid. Press Channel to release Hold Mode. See also Freq Avoids.

Search Menu

Press Func then Menu.

Close Call

Contents

Your scanner's Close Call feature lets you set the scanner so it detects, alerts you to, and displays the frequency of a nearby strong radio transmission. You can set the scanner so the Close Call feature checks for a Close Call hit every 2 seconds in the background while you are scanning or searching or use Close Call Only mode. You can also select the frequency band(s) to look for transmissions. When the scanner detects a Close Call hit, it alerts you according to the alert settings.

Close Call 'Do-Not-Disturb' will only check for close call signals when you are not receiving transmissions.

'Hits with Scan' is a special system that automatically stores the last 10 Close Call hits until you cycle power.

The Close Call feature works well for locating the source of strong local transmissions such as mobile and handheld two-way radios in areas with no other strong transmission sources. Performance is increased with higher transmit power, a receive antenna tuned to the target band, and a low background RF level.

The Close Call feature works better with some types of transmissions than others. It might not correctly display frequency information for transmitters using a highly directional antenna (such as an amateur radio beam antenna) or if there are many transmitters operating at the same time in the same area.

Close Call Options

Important! There are many options and settings in Search/Close Call Options that affect and compliment the settings for Close Call. Please review those first.
Note:< Standby Tone-Out Weather operate does> Close Call does not operate in Weather Scan or Tone-Out Standby/Search.< Standby Tone-Out Weather operate does>

Press Menu. Scroll to Close Call and press E/yes.

Scroll to the options below and press E/yes.

Hits with Scan This is a special *Department* that automatically stores the last 10 close call hits and allows you to scan them. To scan the 'Hits with Scan' department you have to enable Search with Scan in Select Lists to Monitor, "Stop Avoiding" the Search with Scan *system*, and "Stop Avoiding" the *department* with this setting. The scanner will delete the frequencies in this department when you turn the power off. To store each frequency, you will have to 'Hold' on the department then 'Hold' on each channel in the department and use the 'Advanced Channel Menu' to add them to a Favorites List.

Set Avoid
Stop Avoiding, Temporary Avoid, or Permanent Avoid
Set Hold Time Sets how long to search in Search with Scan.
Enter the hold time 0-255 (sec.) and press E/yes to save.

Set CC Mode selects the Close Call mode when scanning or searching.
Off- Close Call is turned off.
CC DND- Close Call checks for frequencies every two seconds between transmissions.
CC Priority- Close Call checks for frequencies every two seconds.
Note: You can also toggle these modes by:
(BCD536HP) Pressing SQ(-⊙-).
(BCD436HP) Holding on any channel and pressing Func then Avoid/-⊙-.

Set CC Alert This allows you to set an Alert Tone, Alert Light, and sets the Pause time for Close Call when you receive a hit.
Set Alert Tone
Alert 1-9 or Off.
Set Level
Level 1-15 or Auto (the master volume level).
Set Alert Light
Set Color
Off, Blue, Red, Magenta, Green, Cyan, Yellow, or White.
Set Pattern
On, Slow Blink, or Fast Blink.
Set CC Pause - How long the scanner displays the Close Call Hit.
3, 5, 10, 15, 30, 45, 60, sec. or Infinite.

Set CC Bands lets you select the Close Call bands to be searched.
Scroll to each Band and press E/yes to toggle On or Off.
Press Menu to return.

VHF Low 1 - 25-54 MHz
VHF Low 2 - 54-108 MHz
Air Band - 108-137 MHz
VHF High1 - 137-225 MHz
VHF High2 - 225-320 MHz
UHF - 320-512 MHz
800MHz+ - 758-960, 1240-1300 MHz
(Cellular frequencies not scanned)

Using Close Call

(BCD536HP) *Press and hold* SQ(-⊙-).
(BCD436HP) Press Channel to hold on any channel/frequency.
Press Func then *press and hold* Avoid(-⊙-). See also Set Search Key.
You can also turn on Close Call Only from the Close Call Menu.
To exit Close Call Only press Func then System.

You will see activity on the 7 bands in the display. Bands with a * (asterisk) under them are turned off.

When the scanner detects a Close Call signal, CC Found! and Press Any Key appear for the length of time set in Close Call Pause or until the signal is lost.

Toggle Close Call Bands
Press the number keys to enable or disable each Close Call band.

Cancel a Hit
Turn the Scroll Control.

Holding on a Hit
Press System, Department, or Channel to hold on the Close Call Hit.
Press Channel to cancel Hold Mode.

View Last Hit
Press System, Department, or Channel to recall the last hit.
Press Channel to cancel Hold Mode.

Replay the Last Transmissions Your scanner Replay feature acts as an instant replay of the transmissions you've just heard. You can set how long a period Replay records from 30 seconds to 240 seconds (4 minutes). While you can replay those recordings immediately and continue replaying them, you cannot save them for future listening. See also Replay Options.
While searching, press Replay.
Turn the Scroll Control to select recordings.
Press Channel to pause/resume replay. Press Replay to exit.
Note: Replay is not available when recording is enabled.

Start/Stop Recording With your scanner, you can record transmissions. When you begin recording, your scanner adds the Replay recording buffer to the recording. These recording sessions are saved and can be replayed on demand. See also Replay Options<>.
While searching, press Func then Replay.
Resets to Off when you turn off the scanner.

Review Recordings
During Close Call, *press and hold* Replay. Scroll to the session and press E/yes.
At Play Session press E/yes. Turn the Scroll Control to select recordings.
Press Channel to pause/resume recordings. Press Replay to exit.

Avoiding Hits See also Review Search Avoids.
Avoids are common to all Searches.
Temporary Avoids cancel when you cycle power.
To Temporary Avoid, press Channel to hold, then Avoid.
To Permanent Avoid, press Channel to hold, then Avoid twice *quickly*.
Press Channel to cancel Hold Mode.

Storing Hits
Press Channel to hold on the hit. Then see Storing Search Frequencies<>.

Close Call Attenuation
Band Attenuation - Press Func then 4(ATT) for ***all*** bands.
Global Attenuation - Press Func then ***press and hold*** 4(ATT).
ATT blinks in the display when global attenuation is on.

Modulation
Press Func <>then Channel(MOD)<> for *all* bands<>.

Intermediate Frequency Exchange See also Intermediate Frequency Exchange.
Press Channel to hold on any Frequency.

Press Func then 7(IFX) to toggle on or off. Press Channel to resume.

View Repeater Frequency

Press Channel to hold on any Frequency.
Press Func then *press and hold* 8(REV). Press Channel to resume.

Quick Search at Current Frequency

Press Channel to hold on the Frequency.
Press Func then E/yes. At Quick Search?, press E/yes.
Press Channel again to release Hold Mode and start searching.

Weather Alert Priority Mode

Press Func then 6(WX) to toggle on or off.

Close Call Menu Press Func then Menu.

Weather Operation

Contents

Weather Options

Press Menu. Scroll to WX Operation and press E/yes.

Scroll to the options below and press E/yes.

Program SAME SAME (Specific Area Messaging System) is a system developed by the National Weather Service to reduce the number of alerts received by consumers by allowing them to hear alerts only for the counties they are interested in. Each alert contains information about the type and severity of the alert, as well as the specific geographic locations affected by the alert. See also SAME Event Codes.

To receive SAME alerts, you can program up to 5 groups of 8 FIPS codes.

To find the FIPS codes for your scanner call the NWS toll free at 1-888-697-7263 (follow the instructions you hear) or see FIP codes for the United States and its Possessions.

SAME 0-4 Select for each SAME group.
Edit Name See Data Naming.
Edit County
Code 1-8 Select for each FIP code.
Enter the FIPS code and press E/yes to save.

Set Delay Time Sets the number of seconds the scanner should wait after a transmission stops before moving on to the next channel during weather scan. A negative delay will force a resume after that number of seconds. The default setting is 2 seconds.
-10, -5, 0, 1, 2, 3, 4, 5, 10, or 30 sec.

Set Attenuator< the for Sets attenuator operation. weather dB) (20> Sets the attenuator (20 dB) for weather operation. < the for Sets attenuator operation. weather dB) (20>The default setting is Off.
On or Off

Set Audio AGC This allows you to turn AGC (Automatic Gain Control) on or off for Weather operations. The default setting is Off.
Analog - Press E/yes to toggle On or Off.

Weather Alert Priority Turning the weather alert priority feature on allows the scanner to check the weather channels every 5 seconds for a 1050 Hz weather alert signal and still scan or search. If you should receive an alert, you will hear a loud warbling then the weather channel audio.
On or Off
Note: You can also toggle weather alert priority in scan or search modes by holding on any channel and pressing Func then 6(WX).

Weather Scan

Press Channel to hold on any channel/frequency.
Press Func then *press and hold* 6(WX).
You can also start Weather Scan from the WX Operation Menu.
To exit Weather Scan press Func then System.

The scanner starts scanning the preprogrammed weather frequencies and stops on the first good signal. If the signal is lost, the scanner resumes searching for another weather transmission.

Change Channel
Turn the Scroll Control.

Attenuation
Press <>then 4(ATT)<>.
Global Attenuation Press Func then ***press and hold*** 4(ATT).
ATT blinks in the display when global attenuation is on.

Intermediate Frequency Exchange See also Intermediate Frequency Exchange.
Press Func then 7(IFX) to toggle on or off.

Store Frequency
See Storing Search Frequencies.

Weather Menu Press Func then Menu.

Weather Alert

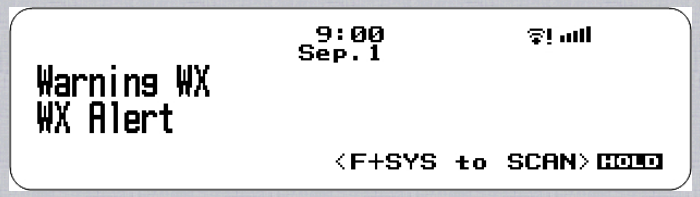
This setting turns on Weather Alert and determines which types of signals will trigger an alert. See also Program SAME.
Press Menu and scroll to WX Operation.
Scroll to Weather Alert and press E/yes.
To exit Weather Alert press Func then System.

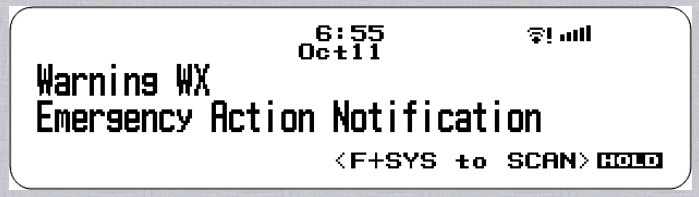
Alert Only - The scanner will scan all the weather channels and immediately sound a weather alert siren when it detects the 1050 Hz weather alert tone. Press any key to stop the siren which opens the squelch and the scanner remains on the weather channel.

SAME 0-4 - The scanner sounds a weather alert siren for any *programmed counties*. The scanner displays warning level as "Warning WX", "Watch WX" or "Advisory WX" and it displays decoded Event Code. When an alert is received, press any key to listen to the alert.

All FIPS - The scanner sounds a weather alert siren for any county.
The scanner displays warning level as "Warning WX", "Watch WX" or "Advisory WX" and it displays decoded Event Code.
When an alert is received, press any key to listen to the alert.

The scanner will mute and scan *only* the weather channels.
When an alert is received, press any key to listen to the alert.
Warning! If you receive an alert it will be at ***FULL volume***.





Review WX Alerts

Replay and review WX/SAME alert event results. The scanner drops these alert events after the alert time expires.

Weather alerts are always recorded and you can review the alerts in the WX Operations menu by scrolling to Review WX Alerts.

Tone-Out For... Menu

Contents

Your scanner can be set to respond to fire tone-outs, a system comprised of standardized two-tone sequential paging, short one-tone paging, and long group tone paging. Fire-Tone-Out will monitor up to 32 different channels for paging tones (two-tone sequential, single tone, and group tone). For more information on Fire Tone-Out see this webpage at Radio Reference.

Tone-Out Standby Mode is used if you use programmed tones.

Tone-Out Search Mode is used if you don't know the tones.

All Tone-Outs (channels) that have the same frequency (and modulation and attenuation) as the one you select will also (and only) be monitored so you can monitor up to 32 Tone-Out channels for one frequency.

In this case, the scanner displays each Tone-Out channel for two seconds. It does not scan them; Tone-Out monitors the frequency for all Tone-Out channels with the same frequency.

Regardless of the current display, the scanner will alert on any received tone out that matches a stored setting (channel) for the frequency.

Tone-Out Setup

Press Menu. Scroll to Tone-Out for... and press E/yes.

Scroll to Tone-Out Setup and press E/yes.

Scroll to Tone-Out 0-31 and press E/yes.

Edit Name
Set Frequency
Set Tone
Set Delay Time
Set Alert
Set Audio AGC
Fire Tone-Out Standby/Search

Edit Name See Data Naming.

Set Frequency

Edit Frequency
Enter the frequency and press E/yes.
Set Modulation
Auto, NFM, FM
Set Attenuator
On or Off

Set Tone

Edit Tone A and press E/yes. Enter the tone and press E/yes to save.
Edit Tone B and press E/yes. Enter the tone and press E/yes to save.
Press Menu to return.
For two-tone pages, enter the tones (in Hz) for tone A and tone B.
For one-tone pages using short tones between 1.25 and 3.75 seconds, enter tone for tone A, and 0 for tone B.
For long-tone pages, such as group pages of more than 3.75 seconds, enter 0 for tone A, and the tone for B.
To Search for Tones, leave the tones for A *and* B at 0.

Set Delay Time The scanner resumes Standby as soon as the carrier drops after a page. A negative delay will force a resume after that number of seconds. The default setting is 2 seconds.

0 - the scanner resumes standby as soon as the carrier drops after a page.
1, 2, 3, 4, 5, 10, 30 - (seconds) the scanner resumes standby mode after the carrier drops and the selected time expires.
Infinite - you must press Channel after a page to resume standby mode.

Set Alert

Set Alert Tone
Alert 1-9 or Off.
Set Level
Level 1-15 or Auto (the master volume level).
Set Alert Light
Set Color
Off, Blue, Red, Magenta, Green, Cyan, Yellow, or White.
Set Pattern
On, Slow Blink, or Fast Blink.

Set Audio AGC This allows you to turn AGC (Automatic Gain Control) on or off for Tone-Out operations. The default setting is Off.

Analog - Press E/yes to toggle On or Off.

Fire Tone-Out Standby/Search

Press Menu. Scroll to Tone-Out for... and press E/yes.

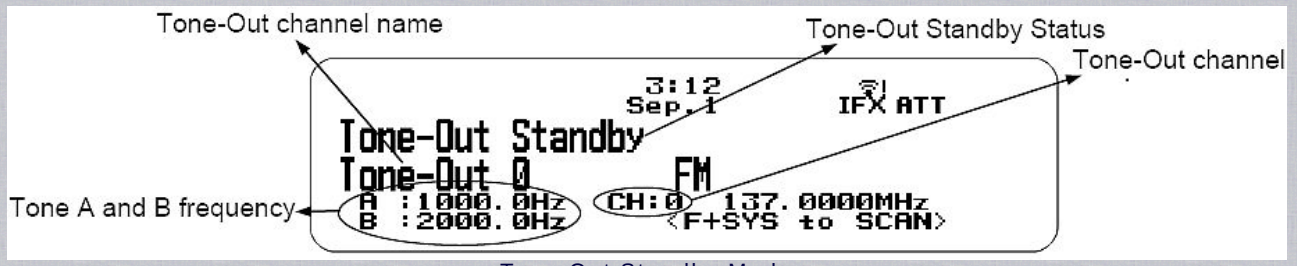
Scroll to Tone-Out Standby and press E/yes.

(BCD536HP Only) press Func then SQ.

See also Set Search Key.

Scroll to monitor a Tone-Out channel (0-31).
Press Func then System to exit.

Note:< do Priority Alert Pri DND> Close Call DND/Pri and Weather Alert Priority do not operate in this mode.



Tone-Out Standby Mode

Any transmission received on the frequency will not be heard but you will still see the signal strength bars.
To monitor a different *frequency*, scroll to a Tone-Out (channel) with a different frequency.

If you press Channel while in Standby/Search mode, the scanner temporarily exits and you will be able to hear any transmissions on that frequency. No alerts sound, even if a Tone-Out matches one you have programmed in Hold Mode.

Press Channel again to return to Standby/Search Mode.

Tone-Out Search Mode

Note: Tone-Out *Search* Mode will not display each Tone-Out channel for two seconds, even when multiple channels have the same frequency, modulation and attenuator settings with other channels.
If the scanner finds tones in Tone-Out Search Mode, you will see the tones in the display. Press E/yes and you will see Set Found Tone A and B? Press E/yes to save.

Select a Different Tone-Out

Turn the Scroll Control.

Listen to Tone-Out Frequency

Press Channel.

Attenuation

Press Func then 4(ATT) for *each* Tone-Out.

Global Attenuation Press Func then ***press and hold*** 4(ATT).
ATT blinks in the display when global attenuation is on.

Modulation

Press Func then Channel(MOD) for *each* Tone-Out..

Intermediate Frequency Exchange See also Intermediate Frequency Exchange.

Press Func then 7(IFX) to toggle on or off for *each* Tone-Out..

Start/Stop Recording With your scanner, you can record transmissions. When you begin recording, your scanner adds the Replay recording buffer to the recording. These recording sessions are saved and can be replayed on demand. See also Replay Options<>.

Press Func then Replay.

Note: Resets to Off when you turn off the scanner.

Review Recordings

In Tone-Out Standby/Search, *press and hold* Replay. Scroll to the session and press E/yes.
At Play Session press E/yes. Turn the Scroll Control to select recordings.
Press Channel to pause/resume recordings. Press Replay to exit.

Store Found Tones

Press E/yes when you hear a Tone-Out.
Press E/yes at Set Found Tone A and B?.
After storing the tones, you will be at the Tone-Out setup menu to complete the settings for the new channel. If you don't want to edit the channel settings or are done editing the channel, press Avoid to return to searching.

Tone-Out Menu

Press Func then Menu.

Related Links/Info

Contents

How to view these pages in your browsers I have formatted these pages so that you can view them with any monitor, in any browser (Opera, I.E., Foxfire, or Netscape), at any zoom level, and in any screen area size (ex: 1024x768 preferred)-small or large fonts. So if the print is too small, go to the 'view' menu in your browser and adjust it to a bigger level (or smaller if you want to see more on the screen).

Determining Type I Motorola Fleetmaps You can try a method I found at Radio Reference.com. Determining Type I Motorola Fleet Maps. By Dave Goodson.

Determining Motorola VHF/UHF Base and Offset Frequencies I have found an explanation at Radio Reference.com that describes how to do this if you don't have the information. The Trunked Radio Systems User's Page also has an explanation. Look for 'Determining Base and Offset Frequencies for the BC245xlt' by John C.

Finding EDACS LCN order EDACS frequencies have to be programmed in LCN (Logical Channel Number) order. I have found a procedure at the Trunked Radio Systems User's Page which explains how to find the LCN order for an EDACS system if you don't know the order. Look for 'Finding EDACS Logical Channel Numbers' by Todd Hartzel near the bottom of the page.

Finding LTR LCN order LTR frequencies have to be programmed into certain channel slots for the system to trunktrack properly. Radio Reference has a good webpage here: Mapping LTR Systems.

Decimal/AFS Conversion Chart Here is a Conversion Chart to help convert your IDs.

Newsgroups and Forums

You will have to register for the groups.

Radio Reference Uniden Forum
HomePatrol Forum
BCD436HP Post Release Thread
BCD436HP Yahoo group
BCD536HP Yahoo group
BCD536HP Post Release Thread

Links

Radio Reference BCD436HP Wiki
Radio Reference BCD536HP Wiki
How it Works: Location, Location, Location
Radio Reference Data Base
Radio Reference.com
Uniden DMA FAQ
Excel file for converting Conventional systems in FreeSCAN to Sentinel
Excel file for converting Trunked systems in FreeSCAN to Sentinel

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Appendix

Contents

Troubleshooting

Scan Mode, Nothing to Scan:

1. Make sure you Set Your Location to scan the Database.
2. Make sure Favorites Lists are enabled in Set Scan Selection.
3. Make sure Service Types are enabled for the Channels you want to hear.
4. Make sure you have locations programmed if Use Location Control is On.
5. Make sure longitude and latitude are N and W (for N America).
6. Make sure Systems/Departments/Channels are not Avoided.
7. Make sure Favorites List/System/Department/Site QK is enabled.
8. (Search with Scan) Make sure Search with Scan is enabled in Select Lists to Monitor and the Search for Menu and for the Custom Search or Hits with Scan department.

All Channels out of Range:

1. Increase your range.
2. Change your location.
3. Turn Use Location Control Off for the Favorites List.

Scanning Interrupted:

1. Turn off Priority Scan.
2. Change Priority Interval.
3. Turn off Close Call Priority.
4. Turn off Weather Priority.
5. Set Channel Delay longer.
6. Set positive Channel Delay.

Characters

Characters for a File/Folder Name are as follows: “A-Z, a-z, 0-9, _()-“

System Name and Set Discovery Name of Discovery Menu.
Review Recordings of Replay Options Menu.

Characters for a Name Tag are as follows: “A-Z, a-z, 0-9, [\]^_`{|}~!”#$%&’()*+,-./:;<=>?@ “

Edit Channel, Department, Site, System.
Edit Custom Menu.
Edit Location.
Edit Tone-Out.
Edit Review WX Alerts.
Edit Unit IDs.
Program SAME.

Default Band Coverage

Frequency Range		Mode	Step (kHz)	Band
Lower	Upper			
25.0000	26.9600	AM	5	Petroleum Products & Broadcast Pickup
26.9650	27.4050	AM	5	CB Class D Channel
27.4100	27.9950	AM	5	Business & Forest Products
28.0000	29.6800	NFM	20	10 Meter Amateur Band
29.7000	49.9900	NFM	10	VHF Low Band

54.0000	71.9500	WFM	50	VHF TV Broadcast 2 – 4
72.0000	75.9500	FM	5	Intersystem & Astronomy
76.0000	87.9500	WFM	50	VHF TV Broadcast 5 – 6
88.0000	107.900	FMB	100	FM Broadcast
108.0000	136.9916	AM	8.33	Commercial Aircraft
137.0000	143.9875	NFM	12.5	Military Land Mobile
144.0000	147.9950	NFM	5	2 Meter Amateur Band
148.0000	150.7875	NFM	12.5	Military Land Mobile
150.8000	161.9950	NFM	5	VHF High Band
162.0000	173.9875	NFM	12.5	Federal Government
174.0000	215.9950	FM	5	TV Broadcast 7 – 13
216.0000	224.9800	NFM	20	1.25 Meter Amateur Band
225.0000	379.9750	AM	25	UHF Aircraft Band
380.0000	399.9875	NFM	12.5	Trunked Military Band
400.0000	405.9875	NFM	12.5	Miscellaneous
406.0000	419.9875	NFM	12.5	Trunked Federal Government Band
420.0000	449.9875	NFM	12.5	70 cm Amateur Band
450.0000	469.9875	NFM	12.5	UHF Standard Band
470.0000	512.0000	NFM	12.5	UHF TV Band
758.0000	787.99375	NFM	6.25	Public Service Band
788.0000	805.99375	NFM	6.25	Public Service Band
806.0000	823.9875	NFM	12.5	Public Service Band
849.0125	868.9875	NFM	12.5	Public Service Band
894.0125	960.0000	NFM	12.5	Public Service Band
1240.0000	1300.0000	NFM	25	25 cm Amateur Band

When you select AUTO for a channel, modulation, or step, the above values are used unless you've edited the Band Defaults.
Steps can be selected from 5/6.25/7.5/8.33/10/12.5/15/20/25/50/100/AUTO (kHz).
Although TV bands are listed, the scanner cannot decode digital TV audio.

Service Types

Service Type *=default	Description
Aircraft	For civilian aircraft and air traffic control operations in the 118-136 MHz and 225-380 MHz bands in AM mode.
Business	Most business related entities not covered by other tags.
Corrections	Jail/prison operations, corrections activities, federal prisons.
Emergency Ops	Emergency Operation Centers and similar emergency management or disaster related operations.
EMS Dispatch*	Ambulance dispatch, including rescue squads.
EMS-Tac	Ambulance on-scene communications, tactical operations and secondary channels.
EMS-Talk	Ambulance talk-around, car-to-car and supervisor operations.
Federal	All federal government operations (except corrections, traditional law enforcement patrol and fire/EMS operations).
Fire Dispatch*	Fire dispatch, including combined fire/ambulance dispatch.
Fire-Tac	Fireground, tactical and on-scene communications, including combined fire/ambulance operations.
Fire-Talk	Fire talk-around and car-to-car operations, chiefs, supervisors, including combined fire/ambulance operations.
Ham	Any amateur radio assignment.
Hospital	Ambulance-to-Hospital communications and patient reports.
Interop	Interoperability communications, cross-agency communications, mutual aid, etc.
Law Dispatch*	Law enforcement dispatch.
Law-Tac	Law enforcement tactical, SWAT, on-scene, surveillance and specific sub-agency communications.
Law Talk	Law enforcement talk-around, car-to-car and supervisor operations.
Media	Newspapers, television and broadcast radio operations.
Military	Military operations, e.g., range control, air-to-air combat, etc.
Multi-Dispatch*	Combined law enforcement and fire/ambulance dispatch.

Multi-Tac	Combined law enforcement and fire/ambulance tactical and on-scene communications.
Multi-Talk	Combined law enforcement and fire/ambulance tactical talk-around and car-to-car operations.
Other	Miscellaneous
Public Works	Public agency non-public safety communications. This includes any non-public safety government services, such as trash, streets, roads, sewer, zoos, administration, maintenance, animal control, community initiatives, code compliance, etc.
Railroad	All common carrier railroad communications.
Schools	School-related communications (schools, school buses, football games, etc.).
Security	Non-law enforcement security operations, including private security companies, noncommissioned government agency security, school security, etc.
Transportation	Public and private bus, taxi, and public passenger rail communications.
Utilities	Private electric, water, natural gas, phone, cable TV, etc. operations.
Race Officials	Available for use to identify officials' frequencies for racing events.
Race Teams	Available for use to identify team frequencies for racing events.
Custom 1*-8	Custom 1 is default for new channels. Custom 2-8 can be used for custom groups of channels in systems, sites, etc.

Removing the Micro SD Card

Carefully remove the SD Card on the BCD536HP by using a thumbnail or pencil eraser to push the card in so it will spring out. With the BCD436HP, slide the metal cover under the batteries to the right and the card will spring up. Pull the card and bracket all the way up and carefully slide the card out. Handle with care if you are going to use it in a card reader. Gently install the SD Card the reverse way it was removed.

Reformatting the Micro SD Card

SD cards should only be formatted using the special SD Card Formatter. Cards up to 32GB are supported. After formatting, the scanner may not be automatically detected (since it is wiped clean), so you may need to uncheck "Hide empty drives" in (Windows 7) Tools>Folder Options>View before doing the next "Clear User Data" step. Then, you need to "Clear User Data" and check "Display all drives" using Sentinel to restore all files and directories to the card. You will also need to "Write to Scanner" in the "Scanner" menu to restore your Favorites Lists.

Entering IDs

These are the acceptable entry formats for IDs.
Partial IDs can be used to receive all IDs in a Fleet, Sub-Fleet, Agency, etc.
Partial IDs can also be Avoided.
Partial IDs cannot be used with decimal formats.
Direct entry (Quick Save) not allowed for I-Call IDs.

System Type	TGID Format
Motorola Type I Systems B=Block (0-7) FF(F)=Fleet S(S)=Sub-Fleet	BFF-SS < Normal>Normal ID BFFF-S< (Fleet> Normal ID (Fleet is 100 - 127) BFF-< Fleet Partial> Fleet ID BFFF-< (Fleet Fleet Partial> Fleet ID (Fleet is 100 - 127) B-< Partial Block> = Block ID
N=Decimal Number i=I-Call ID	NNNNN (size code 0) iNNNNN (size code 0)
Motorola Type II Systems N=Decimal Number i=I-Call ID	***Decimal Format***
	NNNNN iNNNNN
H=Hexadecimal Character i=I-Call ID	***Hexadecimal Format***
	HHH iHHHH
P25 Systems N=Decimal Number i=I-Call ID	***Decimal Format***
	NNNNN iNNNNNNNN
H=Hexadecimal Character i=I-Call ID	***Hexadecimal Format***
	HHHH iHHHHHH

EDACS Systems AA=Agency (00-15) FF=Fleet (00-15) S=Sub-Fleet (0-7) N=Decimal Number i=I-Call ID	***AFS Format*** AA-FFS< Normal> Normal ID AA-FF-< Fleet Partial> Fleet ID AA-< Partial Agency> Agency ID ***Decimal Format*** NNNN iNNNNN
LTR Systems A = Area number (0 or 1) RR = Home Repeater Number (01-20) UUU = Decimal Number (000-254)	A-RR-UUU< Normal> Normal ID < Normal>A-RR-< Partial Repeater> Repeater ID

Motorola Type II Special Status Bits

Type II Motorola Smartnet systems use these status bits for special transmissions such as emergency, patches, DES/DVP scrambled transmissions, and multiselects. Motorola trunking radios directly interpret them for their special functions, thus no difference is noticed by the person with the radio. The scanner however interprets these special talk group status bits as different talk groups entirely. Below is the conversion chart for these special status bits.

TT ID + # Usage	TT ID + # Usage
ID+0 Normal Talk group	ID+8 DES/DVP Encryption talk group
ID+1 All Talk group	ID+9 DES All Talk group
ID+2 Emergency	ID+10 DES Emergency
ID+3 Talk group patch to another	ID+11 DES Talk group patch
ID+4 Emergency Patch	ID+12 DES Emergency Patch
ID+5 Emergency multi-group	ID+13 DES Emergency multi-group
ID+6 unassigned	ID+14 unassigned
ID+7 Multi-select (initiated by dispatcher)	ID+15 Multi-select DES TG

Therefore, if a user was transmitting a multi-select call on talk group 1808, the scanner would actually receive those transmissions on 1815.
Some common uses of these status bits are as follows:

When a user hits their emergency button, all conversations on the talk group revert to the emergency status talk group (ID+2) until the dispatch clears the emergency status. Therefore, if someone hit their emergency button and their radio was on talk group 16, all communications would switch to talk group 18.

A lot of Fire and EMS departments dispatch tone-outs and alarms as Multi-select communications (ID+7). Therefore, if your fire department dispatch talk group is 1616, and they do dispatch tone-outs and alarms as Multi-selects, then those communications will be on talk group 1623.

Weather Channels

Channel	Frequency	Channel	Frequency
1	162.550	5	162.450
2	162.400	6	162.500
3	162.475	7	162.525
4	162.425		

SAME Event Codes

		Warning	Watch	Advisory	
Standard	Event Code				
ADR	Administrative Message			X	Admin Message
AVA	Avalanche Watch		X		Avalanche
AVW	Avalanche Warning	X			Avalanche
BHW	Biological Hazard Warning	X			Biological
BWW	Boil Water Warning	X			Boil Water
BZW	Blizzard Warning	X	X		Blizzard
CAE	Child Abduction Emergency			X	Child Emergency

CDW	Civil Danger Warning	X			Civil Danger
CEM	Civil Emergency Message	X			Civil EMG
CFA	Coastal Flood Watch		X		Coastal Flood
CFW	Coastal Flood Warning	X			Coastal Flood
CHW	Chemical Hazard Warning	X			Chemical
CWW	Contaminated Water Warning	X			Contam. Water
DBA	Dam Watch		X		Dam Break
DBW	Dam Break Warning	X			Dam Break
DEW	Contagious Disease Warning	X			Contagious
DMO	Practice/Demo			X	System Demo
DSW	Dust Storm Warning	X			Dust Storm
EAN	Emergency Action Notification	X			EMG Notify
EAT	Emergency Action Termination			X	EMG Terminate
EQW	Earthquake Warning	X			Earthquake
EVA	Evacuation Watch		X		Evacuate Note
EVI	Immediate Evacuation	X			Evacuate Note
FCW	Food Contamination Warning	X			Food
FFA	Flash Flood Watch		X		Flash Flood
FFS	Flash Flood Statement			X	Flash Flood
FFW	Flash Flood Warning	X			Flash Flood
FLA	Flood Watch		X		Flood
FLS	Flood Statement			X	Flood
FLW	Flood Warning	X			Flood
FRW	Fire Warning	X			Fire
FSW	Flash Freeze Warning	X			Flash Freeze
FZW	Freeze Warning	X			Freeze
HLS	Hurricane Statement			X	Hurricane
HMW	Hazardous Material Warning	X			Hazardous
HUA	Hurricane Watch		X		Hurricane
HUW	Hurricane Warning	X			Hurricane
HWA	High Wind Watch		X		High Wind
HWW	High Wind Warning	X			High Wind
IBW	Iceberg Warning	X			Iceberg
IFW	Industrial Fire Warning	X			Industrial Fire
LAE	Local Area Emergency			X	Local EMG
LEW	Law Enforcement Warning	X			Law Enforcement
LSW	Land Slide Warning	X			Land Slide
NAT	National Audible Test			X	National Audible
NIC	National Information Center			X	National Info
NMN	Network Notification Message			X	Network Message
NPT	National Periodic Test			X	Nation Period
NST	National Silent Test			X	Nation Silent
NUW	Nuclear Power Plant Warning	X			Nuclear Plant
POS	Power Outage Advisory			X	Power Outage
RHW	Radiological Hazard Warning	X			Radiological
RMT	Required Monthly Test			X	Monthly
RWT	Required Weekly Test			X	Weekly
SMW	Special Marine Warning	X			Special Marine
SPS	Special Weather Statement			X	Special WX
SPW	Shelter In-Place Warning	X			Shelter
SVA	Severe Thunderstorm Watch		X		Thunderstorm
SVR	Severe Thunderstorm Warning	X			Thunderstorm
SVS	Severe Weather Statement			X	Severe WX
TOA	Tornado Watch		X		Tornado
TOE	911 Telephone Outage Emergency			X	911 Phone Outage

TOR	Tornado Warning	X			Tornado
TRA	Tropical Strom Watch		X		Tropical Storm
TRW	Tropical Storm Warning	X			Tropical Storm
TSA	Tsunami Watch		X		Tsunami
TSW	Tsunami Warning	X			Tsunami
TXB	Transmitter Backup On			X	TX Backup On
TXF	Transmitter Carrier Off			X	TX Carrier Off
TXO	Transmitter Carrier On			X	TX Carrier On
TXP	Transmitter Primary On			X	TX Primary On
VOW	Volcano Warning	X			Volcano
WFA	Wild Fire Watch		X		Wild Fire
WFW	Wild Fire Warning	X			Wild Fire
WSA	Winter Storm Watch		X		Winter Storm
WSW	Winter Storm Warning	X			Winter Storm
**A	Unrecognized Watch		X		Unrecognized
**E	Unrecognized Emergency			X	Unrecognized
**S	Unrecognized Statement			X	Unrecognized
**W	Unrecognized Warning	X			Unrecognized

Continuous Tone Coded Squelch System (CTCSS) and Digital Coded Squelch (DCS) are two methods used to prevent interference by other radio communications. Your scanner can receive transmissions that use these codes.

CTCSS and DCS systems all use some form of coded squelch. Coded squelch involves the transmission of a special code signal along with the audio of a radio transmission. A receiver with coded squelch only activates when the received signal has the correct code. This lets many users share a single frequency, and decreases interference caused by distant transmitters on the same channel. In all major metropolitan areas of the United States, every available radio channel is assigned to more than one user.

CTCSS Tones

The scanner can detect the following 50 CTCSS tones.

67.0Hz	94.8Hz	131.8Hz	171.3Hz	203.5Hz
69.3Hz	97.4Hz	136.5Hz	173.8Hz	206.5Hz
71.9Hz	100.0Hz	141.3Hz	177.3Hz	210.7Hz
74.4Hz	103.5Hz	146.2Hz	179.9Hz	218.1Hz
77.0Hz	107.2Hz	151.4Hz	183.5Hz	225.7Hz
79.7Hz	110.9Hz	156.7Hz	186.2Hz	229.1Hz
82.5Hz	114.8Hz	159.8Hz	189.9Hz	233.6Hz
85.4Hz	118.8Hz	162.2Hz	192.8Hz	241.8Hz
88.5Hz	123.0Hz	165.5Hz	196.6Hz	250.3Hz
91.5Hz	127.3Hz	167.9Hz	199.5Hz	254.1Hz

DCS Codes

The scanner can detect the following 104 hexadecimal DCS codes.

006	031	054	116	145	205	245	266	332	411	452	506	612	703
007	032	065	122	152	212	246	271	343	412	454	516	624	712
015	036	071	125	155	214	251	274	346	413	455	523	627	723
017	043	072	131	156	223	252	306	351	423	462	526	631	731
021	047	073	132	162	225	255	311	356	431	464	532	632	732
023	050	074	134	165	226	261	315	364	432	465	546	654	734
025	051	114	141	172	243	263	325	365	445	466	565	662	743

026	053	115	143	174	244	265	331	371	446	503	606	664	754

Reverse List

Range (MHz)	Offset (MHz)	Range (MHz)	Offset (MHz)
29.5200 - 29.5800	+ 0.1	450.0000 - 454.9875	+ 5
29.6200 - 29.6800	- 0.1	455.0000 - 459.9875	- 5
52.0100 - 52.9900	+ 1	460.0000 - 464.9875	+ 5
53.0100 - 53.9900	- 1	465.0000 - 469.9875	- 5
143.7500	+ 4.375	470.0000 - 472.9875	+ 3
143.9000	+ 4.25	473.0000 - 475.9875	- 3
144.5100 - 144.8900	+ 0.6	476.0000 - 478.9875	+ 3
145.1100 - 145.4900	- 0.6	479.0000 - 481.9875	- 3
146.0100 - 146.3850	+ 0.6	482.0000 - 484.9875	+ 3
146.4150 - 146.5050	+ 1	485.0000 - 487.9875	- 3
146.5950	+ 1	488.0000 - 490.9875	+ 3
146.6100 - 146.9850	- 0.6	491.0000 - 493.9875	- 3
147.0000 - 147.3900	+ 0.6	494.0000 - 496.9875	+ 3
147.4150 - 147.5050	- 1	497.0000 - 499.9875	- 3
147.5950	- 1	500.0000 - 502.9875	+ 3
147.6000 - 147.9900	- 0.6	503.0000 - 505.9875	- 3
148.1250	- 4.375	506.0000 - 508.9875	+ 3
148.1500	- 4.25	509.0000 - 511.9875	- 3
222.1200 - 223.3800	+ 1.6	758.0000 - 775.99375	+30
223.7200 - 224.9800	- 1.6	788.0000 - 805.99375	-30
420.0000 - 424.9875	+ 5	806.0000 - 823.9875	+ 45
425.0000 - 429.9875	- 5	851.0000 - 868.9875	- 45
440.0000 - 444.9875	+ 5	896.0000 - 901.0000	+ 39
445.0000 - 449.9875	- 5	935.0000 - 940.0000	- 39

Repeater Frequency List

Base Frequency (MHz)	Offset (MHz)	Base Frequency (MHz)	Offset (MHz)
455.0151 - 459.9950	- 5	497.0001 - 500.0000	- 3
465.0101 - 469.9950	- 5	503.0001 - 506.0000	- 3
473.0001 - 476.0000	- 3	509.0001 - 512.0000	- 3
479.0001 - 482.0000	- 3	758.0000 - 775.99375	+30
485.0001 - 488.0000	- 3	806.0051 - 823.9875	+45
491.0001 - 494.0000	- 3	894.0125 - 921.0000	+39

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