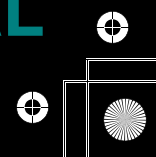


**Uniden®**

**UBC3500XLT**

**OWNER'S**

**MANUAL**



**OWNER'S MANUAL**

## Precautions

Before you use this scanner, please read and observe the following.

### EARPHONE WARNING!

Be sure to use only a monaural earphone with this scanner. You can also use an optional 32  $\Omega$  stereo headset. Use of an incorrect earphone or stereo headset might be potentially hazardous to your hearing. The output of the phone jack is monaural, but you will hear it in both headphones of a stereo headset.

Set the volume to a comfortable audio level coming from the speaker before plugging in the monaural earphone or a stereo headset of the proper impedance (32  $\Omega$ ). Otherwise, you might experience some discomfort or possible hearing damage if the volume suddenly becomes too loud because of the volume control or squelch control setting. This might be particularly true of the type of earphone that is placed in the ear canal.

### WARNING!


Uniden **does not** represent this unit to be waterproof. To reduce the risk of fire or electrical shock, **do not** expose this unit to rain or moisture.

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Close Call™ are proprietary trademarks of Uniden America Corporation.

Other trademarks used throughout this manual are the property of their respective holders.

Important: If you use the supplied AC adapter to power the scanner but have not installed batteries in the scanner, never turn the scanner off by disconnecting the AC adapter or unplugging it from the AC outlet. This might corrupt the scanner's memory.

Always use  to turn the scanner off before disconnecting AC power.

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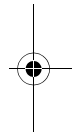



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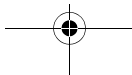


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## Contents



## Introduction

Your Bearcat UBC3500XLT scanning receiver is a state-of-the-art scanner radio with extended frequency. You can store frequencies such as police, fire/emergency, marine, air, amateur, and other communications into the scanner. You can carry it with you wherever you go. You can use the scanner's scroll control to quickly select channels and frequencies, and you can automatically program channels in a system using the AutoStore feature. Use your scanner to monitor:

- Police and fire departments (including rescue and paramedics)
- Business/Industrial radio and utilities
- Marine and amateur (ham radio) bands
- Air band
- Railroad

The chart below identifies the scanner band numbers, the frequency range, the modulation mode and the default step size settings.

To change the band plan:

1. Make sure the power is turned off.
2. While holding down 1, 2 or 3 (corresponding number of the band plan), turn on the scanner.

### Band Plan 1

Frequency (MHz)		Modulation	Step (kHz)
Lower Edge	Upper Edge		
25.0000	29.9950	FM	5
30.0000	79.9875	FM	12.5
80.0000	82.9900	FM	10
83.0000	87.2875	FM	12.5
87.3000	107.9500	FMB	50
108.0000	136.9875	AM	12.5 / 8.33 selectable
108.0000	136.9916		
137.0000	137.9950	FM	5
138.0000	157.9875	FM	12.5
158.0000	160.5900	FM	10
160.6000	162.5875	FM	12.5
162.6000	173.9900	FM	10
174.0000	215.9500	WFM	50
216.0000	224.9950	FM	5
225.0000	399.9500	AM	50
400.0000	405.9875	FM	12.5
406.0000	439.9937	FM	6.25
440.0000	465.9950	FM	5
466.0000	469.9900	FM	10
470.0000	512.0000	FM	6.25
806.0000	960.0000	FM	12.5
1240.0000	1300.0000	FM	12.5

**Band Plan 2**

Frequency (MHz)		Modulation	Step (kHz)
Lower Edge	Upper Edge		
25.0000	49.9950	FM	5
50.0000	84.0100	FM	5
84.0150	87.2950	FM	20.00 with 15kHz Offset
87.3000	107.9500	FMB	50
108.0000	136.9875	AM	12.5 / 8.33 selectable
108.0000	136.9916		
137.0000	143.9950	FM	5
144.0000	145.9875	FM	12.5
146.0000	155.9900	FM	10
156.0000	157.4250	FM	12.5
157.4375	160.5875	FM	12.5
160.6000	162.0250	FM	12.5
162.0300	173.9900	FM	10
174.0000	215.9500	WFM	50
216.0000	224.9950	FM	5
225.0000	399.9500	AM	50
400.0000	405.9875	FM	12.5
406.0000	439.9937	FM	6.25
440.0000	449.9937	FM	6.25
450.0000	469.9900	FM	10
470.0000	512.0000	FM	6.25
806.0000	960.0000	FM	12.5
1240.0000	1300.0000	FM	12.5

**Band Plan 3**

Frequency (MHz)		Modulation	Step (kHz)
Lower Edge	Upper Edge		
25.0000	29.9950	FM	5
30.0000	79.9937	FM	6.25
80.0000	82.9937	FM	6.25
83.0000	87.2937	FM	6.25
87.3000	107.9500	FMB	50
108.0000	136.9875	AM	12.5 / 8.33 selectable
108.0000	136.9916		
137.0000	137.9950	FM	5
138.0000	157.9937	FM	6.25
158.0000	160.5937	FM	6.25
160.6000	162.5937	FM	6.25
162.6000	173.9937	FM	6.25
174.0000	215.9500	WFM	50
216.0000	224.9950	FM	5
225.0000	399.9500	AM	50
400.0000	405.9875	FM	12.5
406.0000	439.9937	FM	6.25
440.0000	465.9937	FM	6.25
466.0000	469.9937	FM	6.25
470.0000	512.0000	FM	6.25
806.0000	960.0000	FM	12.5
1240.0000	1300.0000	FM	12.5

**Introduction**

## Feature Highlights

### General

**2500 Dynamic Channels** - Your scanner stores channels more efficiently than conventional scanners, letting you store and quickly tune greater numbers of interesting frequencies.

**Close Call™ RF Capture Technology** - You can set the scanner so it detects and provides information about nearby radio transmissions. See "Using the Close Call Feature" on Page 65 for more information.

**Dynamically Allocated Channel Memory** - Your scanner's memory is organized so that it more closely matches how radio systems actually work, making it easier to program and use your scanner and determine how much memory you have used and how much you have left.

**Quick Keys** - You can set the scanner so you can quickly select systems and groups by using the keypad. This makes it easy to listen to or quickly lock out those systems or groups you don't want to scan.

**Air Service Search** - frequencies are preset to make it easy to search and scan for the transmissions.

**Lockout** - You can lock out any system, group, frequency, or channel while scanning or searching. If you lock out a system or group, any channels belonging to that system or group are also locked out.

You can lock out up to 200 frequencies and review all locked-out frequencies. The scanner skips locked-out frequencies while using the Close Call feature or while searching.

**CTCSS and DCS Squelch Modes** - prevent interference from stations not using the mode you select.

**Fire Tone-Out Standby** - Lets you set the scanner to alert you if a two-tone sequential page is transmitted. You can set up to 10 settings (transmit frequency, tone frequencies) then select one for standby monitoring.



**Broadcast Screen** – Sets the scanner so it ignores Close Call™ or search hits on known broadcast frequencies.

**Custom Screen** – Lets you input up to 10 frequency ranges that the scanner will ignore during Close Call™ or search operation.

**Dropout Delay** – You can set whether the scanner pauses at the end of a transmission to wait for a reply. You can set the delay time for each system you scan, and while searching and using the Close Call™ feature.

**Attenuator** – You can set the scanner's attenuator to reduce the input strength of strong signals by about 25 dB.

**Repeater Reverse** – You can set the scanner so it switches to the input frequency on a conventional repeater system.

**Channel Alert** – You can set the scanner so it alerts you when there is activity on any channel you specify.

**Memory Check** – Lets you see at a glance how much total memory is left.

**Scan and Search Operation** – Lets you include service search or custom search ranges during normal scan operation.

**Custom Alerts** – For each alert in the scanner (such as channel alert, Close Call alert, emergency alert), you can select from 9 different tone patterns and also set the alert volume level independently from the main volume level.

**Automatic Channel Step** – Accepts frequencies on any valid channel step, even if it does not fall within the band plan's default step.

**Frequency Step** – Lets you select a frequency step (5, 6.25, 7.5, 8.33, 10, 12.5, 15, 20, 25, 50 or 100 kHz) for manual mode and chain search mode. The scanner's auto step feature lets you set the scanner so it automatically chooses the correct step.

## Feature Highlights

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**Quick Recall** – Lets you quickly select a specific channel by choosing the system, group, and channel.

**Scan/Search Delay** – You can set the scanner so it remains on a frequency up to 5 seconds after the last transmission to wait for a possible reply.

**Text Tagging** – You can name each system, group, channel and custom search range using up to 16 characters per name.

**Unique Data Skip** – Allows your scanner to skip unwanted data transmissions and reduces birdies.

**Duplicate Frequency Alert** – Alerts you if you try to enter a duplicate name or frequency already stored in a system.

**Memory Backup** – If power is lost or disconnected, the scanner retains the frequencies you programmed in its memory.

**Note:** The scanner's frequency coverage is not continuous.

## Search

**Air Service Search** – Lets you search the scanner's preprogrammed frequencies.

**Custom Search** – Lets you program up to 10 custom search ranges. You can search any of these ranges simultaneously.

**CTCSS/DCS Search** – Lets the scanner search for CTCSS or DCS tones. You can identify up to 50 CTCSS tones and 104 DCS tones.

**Quick Search** – Lets you search from the currently-tuned frequency if you are searching a conventional system.

## Auto Store

**Frequency AutoStore** – Automatically stores all active frequencies into the selected conventional system.

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## Priority

**Priority Scan** – Priority channels let you keep track of activity on your most important channel(s) while monitoring other channels for transmissions.

**Priority Plus** – You can set the scanner so it scans only the priority channels

## Backlight and Power

**Display and Keypad Backlight** – Makes the display and keypad easy to see in dim light. You can adjust the back light so it turns on when you press a key, when squelch breaks during a transmission, or manually.

**Low Battery Alert** – The scanner alerts you if the batteries need to be recharged or replaced.

**Battery Save** – You can set the scanner so it reduces the amount of power it needs if there are no transmissions.

## Key Controls

**Key Lock** – You can deactivate the scanner's keys to help prevent accidentally changing the scanner's programming.

## PC Control and Cloning

**PC Control** – You can transfer programming data to and from your scanner and your personal computer, and control the scanner using a computer and optional software available at <http://www.racescanner.eu>. This helps you find frequencies listed on the Internet and load them into the scanner.

**Clone Mode** – You can clone all programmed data, including the contents of the scanner's memory, menu settings, and other parameters from one UBC3500XLT scanner to another UBC3500XLT scanner.

## Feature Highlights

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## About This Manual

The screen displays used in this manual are representations of what might appear when you use your scanner. Since what you see depends on the frequencies for your area and the settings you select, you might notice some differences between what is in this manual and what appears on your scanner.

### *Using the Multifunction Scroll Control*

The scroll control on top of the UBC3500XLT lets you easily control channel selection, volume, and squelch, and how information appears on the display.

**To adjust menu settings, change channels in Hold mode, and resume scanning:** Simply rotate the scroll control.

**To change the scanner's volume:** Briefly press the scroll control once, then rotate it. `VOLUME LEVEL` and the current volume level appear on the display.

**To adjust the squelch:** While holding down `[Func]` on the left side of the scanner, briefly press the scroll control once then rotate it. `SQUELCH LEVEL` and the current squelch level appear on the display.

### *Entering Text*

To enter a letter, turn the scroll control until the character you want appears. To enter a number, press a number key. To enter a decimal point, press `•`.



To move the cursor to the left, press `</4`. To move the cursor to the right, press `6/>`.


To clear a character, press `•` twice. To clear all characters, press `•` three times.

To accept an entry, press down on the scroll control or press `E`.

## How the Scanner's Controls Are Represented in This Manual

To help navigate the scanner's menus, the steps shown in this manual show the displays you see and the keys you press or control you operate to get a desired result.

This example shows you how to use the scanner's menu to edit an existing system name. It shows you the key to press (**Menu**) to select a menu option and the option you see (**Program System**) when you press **Menu**. It also instructs you to turn the scroll control (shown as ) to view a series of choices then press the scroll control (shown as ) to select a choice (**Edit Name**).

**Menu** → Program System → ↓  
 Select the system ↓  
 → Edit Name ↓



```

-- M E N U --
Program System
Srch/CloCall Opt
Search for...
  
```

Follow these steps to enter/edit the system name.

1. The first character of the system name is covered by a cursor. Rotate the scroll control to select the character you want.
2. Press **6/ >** on the keypad to select the next character. The cursor moves to the next character. To move the cursor to a previous character, press **< /4**.
3. Repeat Steps 1 and 2 until you have entered the system name. Then press down on the scroll control or press **E** to accept the setting.

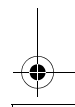
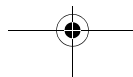
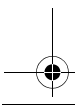
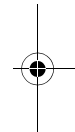
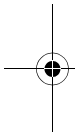
Hints:

- Each system name can be up to 16 characters. Abbreviate as necessary to fit.
- Press **•** twice to delete the current character.
- Press **•** three times to clear the entire alpha tag.

## Feature Highlights



To get the most from this manual, review the contents to become familiar with the basic functions available. If you are new to scanning, be sure to read “Understanding Scanning” on Page 15 for a quick background on the technology. The first thing you’ll need to do is install batteries in the scanner. Then you need to connect the included antenna to the scanner. See “Setting Up Your Scanner” on Page 20 if you need any help doing this.



## Understanding Scanning

This section provides you with background on how scanning works. You don't really need to know all of this to use your scanner, but some background knowledge will help you get the most from your UBC3500XLT.

### Understanding the Scanner's Memory

Your scanner's memory is organized in an architecture called *Dynamic Allocated Channel* memory. This type of memory is organized differently and more efficiently than the bank/channel architecture used by traditional scanners. Dynamic Allocated design matches how radio systems actually work much more closely, making it easier to program and use your scanner and determine how much memory you have used and how much you have left.

Instead of being organized into separate banks and channels, your scanner's memory is contained in a *pool*. You simply use as much memory as you need in the pool to store as many frequencies and alpha tags as you need. No memory space is wasted, and you can tell at a glance how much memory you have used and how much remains.

### What is Scanning?

Unlike standard AM or FM radio stations, most two-way communications do not transmit continuously. Your UBC3500XLT scans programmed channels until it finds an active frequency, then stops on that frequency and remains on that channel as long as the transmission continues. When the transmission ends, the scanning cycle resumes until the scanner receives another transmission.

### What is Searching?

The UBC3500XLT can search each of its bands and up to 10 bands together to find active frequencies.

## Understanding Scanning

This is different from scanning because you are searching for frequencies that have not been programmed into the scanner. When you select frequency bands to search, the scanner searches for any active frequency within the lower and upper limits you specify. When the scanner finds an active frequency, it stops on that frequency as long as the transmission lasts. If you think the frequency is interesting, you can program it into the scanner's memory. If not, you can continue to search.

## What is CTCSS/DCS?

Your scanner can monitor systems using a Continuous Tone Coded Squelch System (CTCSS) and Digital Coded Squelch (DCS) system, which allow squelch to open only when the tone you have programmed with a specific frequency is received along with a transmission.

CTCSS and DCS are subaudible tone signaling systems sometimes referred to as PL or DPL (Motorola's trademarked terms for Private Line and Digital Private Line respectively). CTCSS and DCS are used only for FM signals and are usually associated with both amateur and commercial two-way frequencies. These systems make use of a special subaudible tone that accompanies a transmitted signal.

CTCSS and DCS are used for many purposes. In many cases, CTCSS and DCS are used to restrict access to a commercial repeater, so that only those units which transmit the correct tone along with their signal can "talk" to the repeater.

CTCSS and DCS are also used in areas that receive interference where there are several stations with output frequencies close to each other. When this occurs, you might hear multiple communications on the same frequency. The stations might even interfere



with each other to the point where it is impossible to clearly receive any of the stations. A scanner equipped with CTCSS and DCS (like your scanner) can code each received frequency with a specific CTCSS or DCS frequency. Then, when you receive multiple signals, you only hear the transmission with the CTCSS or DCS tone you programmed. If you do not receive the correct tone with a signal, the scanner's squelch remains closed and you hear nothing.

You can search for the following CTCSS frequencies and DCS codes.

**CTCSS Frequencies (Hz)**

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

**DCS Codes (Octal)**

023	025	026	031	032	036	043	047
051	053	054	065	071	072	073	074
114	115	116	122	125	131	132	134
143	145	152	155	156	162	165	172
174	205	212	223	225	226	243	244
245	246	251	252	255	261	263	265
266	271	274	306	311	315	325	331
332	343	346	351	356	364	365	371
411	412	413	423	431	432	445	446

**Understanding Scanning**

452	454	455	462	464	465	466	503
506	516	523	526	532	546	565	606
612	624	627	631	632	654	662	664
703	712	723	731	732	734	743	754

## Conventional Scanning

Conventional scanning is a relatively simple concept. Each group of users in a conventional system is assigned a single frequency (for simplex systems) or two frequencies (for repeater systems). Any time one of them transmits, their transmission always goes out on the same frequency.

Today there are still many 2-way radio users who operate using a conventional system:

- Aircraft
- Amateur radio
- LPD/PMR users
- Broadcast AM/FM/TV stations
- Many business radio users

When you want to store a conventional system, all you need to know is the frequencies they operate on. When you are scanning a conventional system, the scanner stops very briefly on each channel to see if there is activity. If there isn't, the scanner quickly moves to the next channel. If there is, then the scanner pauses on the transmission until it is over.

### **Simplex Operation**

Simplex systems use a single frequency for both transmit and receive. Most radios using this type of operation are limited to line-of-sight operation. This type of radio is frequently used at construction job sites, and with inexpensive consumer radios such as LPD/PMR radios. The range is typically 1-5 km, depending upon the terrain and many other factors.

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## **Repeater Operation**

Repeater systems use two frequencies: one transmits from the radio to a central repeater; the other transmits from the repeater to other radios in the system. With a repeater-based system, the repeater is located on top of a tall building or on a radio tower that provides great visibility to the area of operation. When a user transmits (on an input frequency), the signal is picked up by the repeater and retransmitted (on an output frequency). The user's radios always listen for activity on the output frequency and transmit on the input frequency. Since the repeater is located very high, there is a very large line of sight.

## **Where To Get More Information**

By itself, this manual really only provides part of what you need to know to have fun scanning – how to program and use the scanner.

### **Information On The Internet**

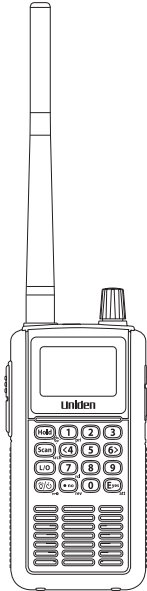
The Internet is a great source for current frequencies and information about scanning. Many web sites have lists of frequencies for your area. You can use a search engine to find and use them.

Make a list of the agencies you want to listen to, then look up the frequencies and systems used by those agencies.

- [www.racescanner.eu](http://www.racescanner.eu) - Race frequency information, programming software and accessories.

## **Understanding Scanning**

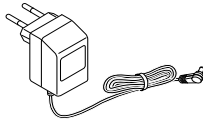
## Included With Your Scanner



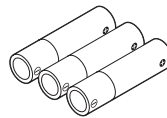
Scanner  
(with antenna  
attached)



Wrist Strap



AC Adapter



Batteries



Belt Clip



BNC/SMA Adapter



*Owners  
Manual  
and other  
printed  
material*

## Setting Up Your Scanner

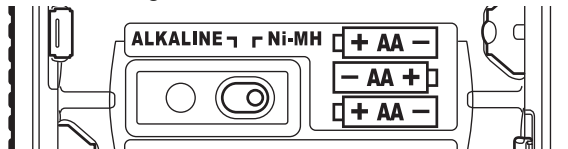
These guidelines will help you install and set up your new scanner:

- If your scanner receives interference or electrical noise, move the scanner or its antenna away from the source.
- To improve the scanner's reception, use an optional external antenna designed for multi-band coverage. (You can purchase this type of antenna at a local electronics store). If the optional antenna has no cable, use 50-75  $\Omega$  coaxial cable for lead-in. A mating plug might be necessary for the optional antennas.
- Use an optional mono earphone or mono headset with proper impedance (32  $\Omega$ ) for private listening. Read the precautions on the inside front cover of this Owners Manual.
- Do not use the scanner in high-moisture environments such as the kitchen or bathroom.
- Avoid placing the scanner in direct sunlight or near heating elements or vents.

### Using Internal Batteries

You can power your scanner using three alkaline or rechargeable AA batteries.

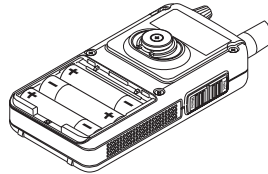
Before installing batteries, set the switch in the battery compartment to match the type of batteries you will use. Select **ALKALINE** for non-rechargeable battery types and **Ni-MH** for rechargeable battery types. See also "Using Rechargeable Batteries" on Page 22 when you use rechargeable batteries.



1. Remove the battery cover and set the battery switch.

## Setting Up Your Scanner


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



### **WARNING!**

Set **ALKALINE/Ni-MH** to **Ni-MH** for use only with rechargeable batteries. Never attempt to recharge non-rechargeable batteries. Non-rechargeable batteries can get hot and can even burst if you try to recharge them.

3. Replace the cover.

When  flashes and the scanner beeps every 15 seconds, replace the batteries.

## **Using Rechargeable Batteries**

You can also use three rechargeable batteries to power your scanner. Before you use rechargeable batteries, you must charge them. The scanner has a built-in circuit that lets you recharge batteries while they are in the scanner. To charge the batteries, set **ALKALINE/Ni-MH** inside the battery compartment to **NI-MH**, install the batteries in the scanner, and connect the supplied AC adapter to the scanner's DC 6V jack (see "Using AC Power" on Page 23).

### **WARNING!**

Do not connect the AC adapter to the scanner if non-rechargeable batteries (such as alkaline batteries) are installed in the scanner and **ALKALINE/Ni-MH** is set to **NI-MH**, or if you are unsure of the switch's position. Non-rechargeable batteries can get hot and can even burst if you try to recharge them. Before you use rechargeable batteries for the first time, charge them for 14 hours to bring them to a full charge. Discharged batteries take about 14 hours to fully recharge.

If an AC adapter is connected to the scanner, the scanner checks the condition of the installed batteries. If the scanner is turned off and the batteries require a full charge, `Normal Charging` appears as the batteries are recharged. When the batteries are fully charged, `Charge Complete` appears.

If no batteries are installed in the scanner, `No Battery` appears. If there is a problem with the installed batteries, `Battery Error` appears. If the installed batteries are Ni-MH batteries but **ALKALINE/Ni-MH** is set to **ALKALINE**, `Charge Off` appears and the scanner does not charge the batteries.

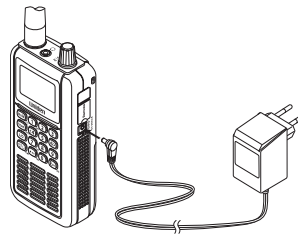
## Removing the Display Sticker

Before you use the scanner, remove the protective plastic sticker over the display.

## Using AC Power

You can power the scanner using the supplied 6V, 800 mA AC adapter.

To use the scanner on AC power, plug the adapter into **6V 800 mA** on the right side of the scanner, then plug the AC adapter into a standard AC outlet.



If rechargeable batteries are installed and **ALKALINE/Ni-MH** is set to **Ni-MH**, the adapter powers the scanner and recharges the installed batteries at the same time.

### **WARNING!**

To prevent damage to Ni-MH batteries, never charge them in an area where the temperature is above 45°C (113°F) or below 4°C (40°F).

## Setting Up Your Scanner

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## Connecting the Antenna

To attach the supplied flexible antenna to the connector on the top of your scanner, simply screw it onto the scanner's SMA connector.

### ***Connecting an Optional Antenna***

The scanner's SMA connector makes it easy to connect a variety of optional antennas, including an external mobile antenna or outdoor base station antenna.

**Note:** Always use 50- or 75-ohm, RG-58, or RG-8, coaxial cable and the supplied BNC/SMA adapter to connect an outdoor antenna. If the antenna is over 50 feet from the scanner, use RG-8 low-loss dielectric coaxial cable. Cable loss increases with higher frequency.

## Connecting an Earphone/Headphone

For private listening, you can plug a  $\frac{1}{8}$ -inch (3.5 mm) mini-plug earphone or headphones (not supplied) into the headphone jack on top of your scanner. This automatically disconnects the internal speaker. See "Earphone Warning" at the front of the manual for important information about using an earphone/headphone.

## Connecting an Extension Speaker

In a noisy area, an optional amplified extension speaker, positioned in the right place, might provide more comfortable listening. Plug the speaker cable's  $\frac{1}{8}$ -inch (3.5-mm) mini-plug into your scanner's jack.

### **WARNING!**

Never connect anything other than an earphone or the recommended amplified extension speaker to the scanner's headphone jack. This might damage the scanner.



**WARNING!**

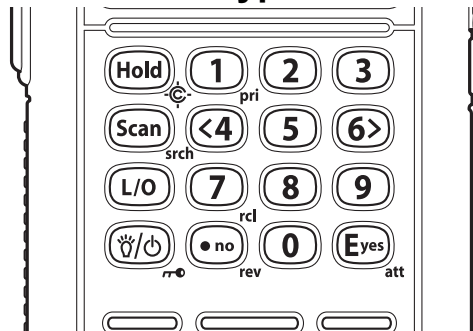
Never connect any part of the headphone jack to the antenna jack or connect the radio to an installation where the antenna and audio connection are grounded. This might damage the scanner.

**Attaching the Belt Clip**

To make your scanner easier to carry when you are on the go, use the supplied belt clip. Rotate the scanner upside down to remove it from the clip.

**Attaching the Wrist Strap**

To keep your scanner safely close at hand, use the supplied wrist strap. Push the small loop on one end of the wrist strap through the lug on the right side of the scanner, then thread the other end of the wrist strap back through the small loop to secure it.



**A Look At The Keypad**






Your scanner's keys have various functions labeled on the key tops and below the keys.

To select the function labeled on a key, simply press the key. To select the function labeled below a key, hold down **Func** on the left side of the scanner then press the key. **F** appears on the display.

**Setting Up Your Scanner**

If your scanner's keys seem confusing at first, the following information should help you understand each key's function.

Key Name	Description
<b>Hold/</b> 	<p><b>Hold</b> – Holds the scan or the frequency search when pressed. Resumes the scan or the frequency search when pressed again. Release the mute when pressed in Tone-Out Standby mode.</p> <p><b>[Func] +</b>  – Quickly turns the Close Call feature on or off (see “Setting Close Call Options” on Page 66).</p>
<b>Scan/srch</b>	<p><b>Scan</b> – Scans the stored channels.</p> <p><b>[Func] + srch</b> – Starts quick search or quickly accesses the search menu.</p>
<b>L/O</b>	<p><b>L/O</b> – Lets you lock out a selected channel or skip a specified frequency. Press and hold for more than 2 seconds to unlock all channels in a system or all frequencies in a Search mode and Close Call mode. Also use to exit a menu.</p> <p><b>[Func] + L/O</b> – Press quickly to lock and unlock a selected system in Scan or Scan Hold mode and review search lockout frequencies in Search or Search Hold mode.</p>

Key Name	Description
 /  / 	<p> – Turns the display backlight on or off.</p> <p>Press and hold for more than 2 seconds to turn the scanner on or off.</p> <p><b>[Func]</b> +  – Locks and unlocks the keypad.</p>
<b>0-9</b>	<p><b>0-9</b> – Enters a frequency, enters quick key numbers, and selects a custom search range in Custom Search mode.</p> <p>Selects systems by quick key in scan mode.</p> <p><b>[Func]</b> + <b>0-9</b> – Selects groups by quick key in scan mode.</p>
<b>1/pri</b>	<p><b>1</b> – Enters a 1.</p> <p><b>[Func]</b> + <b>pri</b> – Selects the priority mode in scan hold mode.</p>
<b>&lt;/4</b>	<p><b>4</b> – Enters a 4.</p> <p><b>[Func]</b> + <b>&lt;</b> – Moves the active character to the left while editing data.</p>
<b>6/&gt;</b>	<p><b>6</b> – Enters a 6.</p> <p><b>[Func]</b> + <b>&gt;</b> – Moves the active character to the right while editing data.</p>
<b>7/rcf</b>	<p><b>7</b> – Enters a 7.</p> <p><b>[Func]</b> + <b>rcf</b> – Displays a series of prompts to quickly select a specific channel in the scan hold mode.</p>

## Setting Up Your Scanner

Key Name	Description
<ul style="list-style-type: none"> <li>• <b>/no/rev</b></li> </ul>	<ul style="list-style-type: none"> <li>• – Enters a decimal point or dash in a frequency, enters or selects an extended 2-digit Quick Key.</li> </ul> <p>At a prompt, answers “No.”</p> <p><b>[Func] + rev</b> – Monitors the currently-tuned frequency’s reverse frequency.</p>
<p><b>E/yes/att</b></p>	<p><b>E</b> – Press to select input and menu items, to quickly edit a channel in Scan Hold Mode, and store a frequency into memory in Search Hold mode.</p> <p>At a prompt, answers “Yes.”</p> <p><b>[Func] + att</b> – Turns the scanner’s attenuator on or off for the current channel or frequency.</p>


## A Look At The Display


The display has indicators that show the scanner's current operating status. The display information helps you understand how your scanner operates.

**S<sub>n</sub>** : - appears with a number to show the currently-selected System Quick Key number. **n** appears to show the first digit of the Quick Key number. For example, if System Quick Key 75 is selected, **S7** : appears. The currently active system indicator flashes.

**ATT** - appears when the attenuation feature is turned on. See “Setting Attenuation” on Page 73, and “Setting Channel Attenuation” on Page 56.

**PRI** - appears when the priority feature is turned on (see “Priority Scan” on Page 39).

 - appears when you lock the keypad (see “Locking/Unlocking the Keypad and Scroll” on Page 38).


 - alerts you when the battery power gets low.


GRP - shows the currently activated group or selected group Quick Key number, appears with numbers (0-9). The currently active group indicator flashes.

AM/FM/NFM/WFM/FMB - appears to show the type of reception mode.

L/O - appears when you manually select a channel you locked out or a skip frequency.

**F** - appears when you hold down **Func** to select a function.

 - appears when the scanner is set to CC Pri Mode (see “Using the Close Call Feature” on Page 65).

 - appears when the scanner is set to Close Call DND Mode. (see “Using the Close Call Feature” on Page 65).


SCAN - scrolls while the scanner is scanning.

DSKP - appears when data skip is turned on.

HOLD - appears while the scanner is set to scan or search hold mode.

**P** - appears if priority is turned on

SCR - appears when one or more broadcast screen bands are turned on.

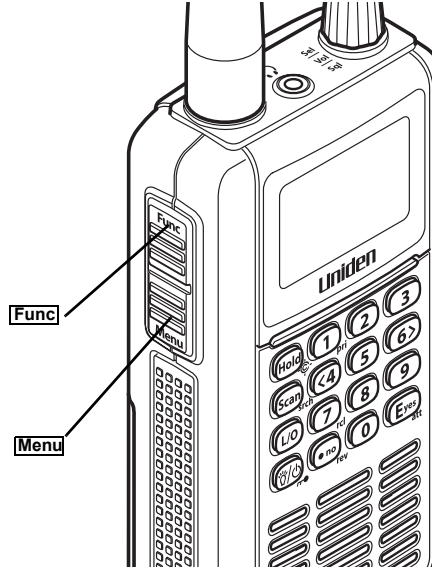
 - appears to show signal strength (0 to 5).

## Setting Up Your Scanner

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## Using Menu



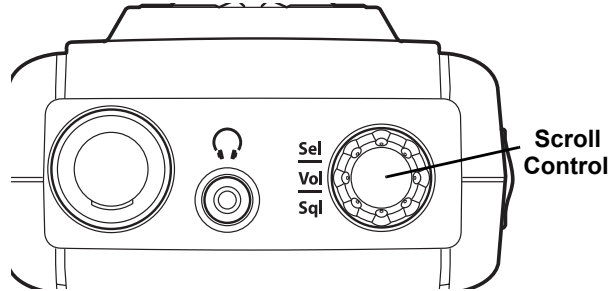
Press **Menu** on the left side of the scanner to enter the menu. See “Using the Menu” on Page 36 for more information about the scanner’s menu options.

## Using Func


To select the function labeled below a key on the front of the scanner, hold down **Func** on the left side of the scanner, then press that key. To hold on a system while scanning or temporarily stop on a channel while searching, press **Func**. To select a system in Scan or Scan Hold mode, hold down **Func** and rotate the scroll control.

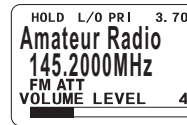
## Basic Operation

### Turning On the Scanner and Setting the Squelch



**Note:** Make sure the scanner's antenna is connected before you turn it on.

1. Press and hold  for about 2 seconds to turn on the scanner.
2. Briefly press the scroll control once. `VOLUME LEVEL` and a number appear on the display.



3. While `VOLUME LEVEL` appears, rotate the scroll control to set the volume to a comfortable listening level.

**Note:** If you do not press any key or turn the scroll control within about 10 seconds, `VOLUME LEVEL` disappears. If this happens, simply press the scroll control again.

4. While holding down `[Func]` on the left side of the scanner, briefly press the scroll control once. `SQUELCH LEVEL` and a number appear on the display.
5. While `SQUELCH LEVEL` appears, rotate the scroll control to set the squelch to the level you want.

**Note:** If you do not press any key or turn the scroll control within about 10 seconds, `SQUELCH LEVEL` disappears. If this happens, hold down `[Func]` and the scroll control again.

## Basic Operation

## Scanning Systems

To begin scanning programmed systems, press **Scan**. The UBC3500XLT scans all unlocked systems in all activated quick-key groups and any searches unlocked for search and scan.

Notes:

- If no systems are programmed, or all systems are locked out, an error message appears. Program a system or select a system to scan.
- When scanning multiple systems, the UBC3500XLT scans systems according to the assigned quick key. Systems assigned to quick key 1 are scanned first, then 2, 3, 4, etc. Systems not assigned to a quick key are scanned last, then unlocked searches. Within a quick key, systems are scanned in the order they were assigned.
- Within a system, channels are scanned according to the assigned channel group, with the same priority as described above for systems.
- The UBC3500XLT scans a system for the duration you set using the System Hold Time option (see "Setting the System Hold Time" on Page 47). Conventional systems operate similarly, but all unlocked channels are scanned at least one time regardless of the hold time setting.
- Each search range is searched for the amount of time you set using the "Set Hold Time" option. See "Setting the System Hold Time" on Page 47 for more information.

## Selecting Systems to Scan

To select systems to scan, press **Scan** then press the quick key assigned to the system or systems you want to scan. For quick keys 0-9, press the quick key's number. For quick keys 10-99, press **•** then press the



quick key's 2-digit number. To stop scanning the system(s), press **•** (if the quick key is a 2-digit quick key) then the number button or buttons again.

The Sx: (system) indicators on the display show the systems that are currently selected.

To select or lock out a system that is not assigned to a key, press and hold **Func** while you rotate the scroll control until the desired system is selected. Then, continue to hold **Func** and press **L/O** to either lock out or unlock the system.

## Selecting System Channel Groups

Within a system, you can assign groups of channels to a group quick key (see "Setting the Group Quick Key" on Page 50).

Follow these steps to activate or deactivate a channel group within a system while scanning.

1. Press **Func** to hold on the system (or hold down **Func** then rotate the scroll control to select the system).
2. Continue to hold **Func** and press the number key corresponding to the channel group you want to activate or deactivate.

## Locking/Unlocking Systems

Follow these steps to lock out a system so that it does not scan even if its quick key is selected.

1. While holding down **Func**, rotate the scroll control to select the system.
2. Continue to hold down **Func** and press **L/O** to lock out the system. *System Locked* appears.
3. Repeat Steps 1 and 2 to unlock a system you have previously locked. *System Unlocked* appears.

## Basic Operation

## Locking/Unlocking Channels

Follow these steps to lock out a channel so that it does not scan even if its system and channel group are selected.

1. While holding down **Func**, rotate the scroll control to select the system where the channel is stored.
2. Release **Func** then press **Hold** within 2 seconds to hold on the system.
3. Rotate the scroll control to select the channel you want to lock or unlock.
4. Press **L/O** to lock or unlock the channel.

You can also lock out an active channel by pressing **L/O** while the scanner is stopped on the channel.

## Temporarily Holding On a System

To temporarily hold on a system, press and hold **Func**. To hold on a different system, continue to hold **Func** and rotate the scroll control to select the system. Normal scanning resumes 2 seconds after you release **Func**.

## Holding On a Channel

To hold on a channel, press **Hold** while the channel is active. To select a different channel, rotate the scroll control. If you scroll past the beginning or end of the current system, the scanner selects channels in the previous or next system. To resume scanning, press **Scan**.

## Quick-Storing Channels

1. Hold on an existing channel in any system.
2. Enter the frequency you want to store.
3. To quick-store the channel, press **E**. Otherwise, press **•**.

If you enter a frequency then press **E**, the scanner stores it in the *Qck Save Grp* group in a system

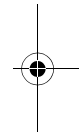


called *Qck Save Cnv Sys*. These are created if they do not exist. Then, the scanner prompts you to save other channel settings.

If you pressed **No** in Step 3, the scanner prompts you to select the system where you want to store the frequency.

### Quickly Recalling Channels

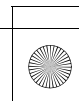
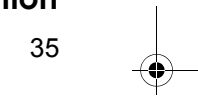
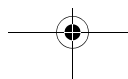
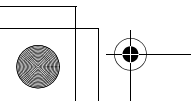
1. Press **Hold** to hold on any channel.
2. Press **[Func] + rcl**. The scanner prompts you to select the system where the channel is stored.
3. Rotate the scroll control to select the system, then press **E**. The scanner prompts you to select the channel group where the channel is stored.
4. Rotate the scroll control to select the group, then press **E**. The scanner prompts you to select a channel.
5. Rotate the scroll control to select the channel, then press **E** to hold on that channel.



### Toggling Channel Alpha Tags

To change the display so the frequency appear instead of the alpha tag, press **[Func] + 5**.

## Basic Operation



## Using the Menu

The scanner's menu lets you select options that let you set up and use the scanner.

To use the menu, press **[Menu]** on the left side of the scanner. To select a menu item, rotate the scroll control clockwise or counterclockwise. The currently-selected menu item is highlighted with a bar on the display. When the menu item you want to select is highlighted, briefly press the scroll control to select it. To back up a level, press **[Menu]**. To exit the menu mode, press **[Menu]** again or the **L/O** key.

This table shows the scanner's menu structure. To find information about a particular menu setting in this manual, go to the page number shown in parentheses next to the setting.

Note: Not all of the options shown in this table may appear at the same time. To view all available options on any screen, rotate the scroll control.

Menu Item	Submenu
<pre>-- M E N U -- Program System Srch/CloCall Opt Search for ...</pre>	<pre>Select System (32) New System</pre>
<pre>-- M E N U -- Program System Srch/CloCall Opt Search for ...</pre>	<pre>Srch/CloCall Opt Freq Lockouts (70) Broadcast Screen (71) CTCSS/DCS Search (16) Max Auto Store (72) Set Delay Time (74) Set Modulation (55) (72) Set Attenuator (73) Set Data Skip (73) Set Step (74) Air Band Step (75)</pre>
<pre>-- M E N U -- Program System Srch/CloCall Opt Search for ...</pre>	<pre>Search for ... Service Search (59) Edit Service (62) Custom Search (60) Edit Custom (61) Search and Store (63)</pre>

Menu Item	Submenu
<pre>-- M E N U -- Srch/CloCall Opt Search for ... <b>Close Call</b></pre>	<pre>Close Call <b>Close Call Only</b> (66) CC Auto Store (66) Set CC Mode (66) Set CC Override (67) Set CC Alert (67) Set CC Bands (68)</pre>
<pre>-- M E N U -- Search for ... Close Call <b>Set Priority</b></pre>	<pre>Set Priority (39) <b>Off</b> (39) On (39) Plus On (39)</pre>
<pre>-- M E N U -- Set Priority <b>Tone-Out for ...</b> Wired Clone</pre>	<pre>Tone-Out for ... <b>Tone-Out Standby</b> (76) Tone-Out Setup (76)</pre>
<pre>-- M E N U -- Set Priority Tone-Out for ... <b>Wired Clone</b></pre>	<pre>Wired Clone <b>Master</b> (42) Slave (42)</pre>
<pre>-- M E N U -- Tone-Out for ... Wired Clone <b>Settings</b></pre>	<pre>Settings <b>Set Backlight</b> (39) Adjust Key Beep (38) Set Battery Save (39) Set Audio AGC (40) Adjust Contrast (40) PC Control (40) See Scanner Info (38)</pre>

## Using the Menu

## Settings

### Displaying System Information

#### Viewing Memory Used

**Menu** → ⤴ Settings → ⤵  
⤴ See Scanner Info ⤵ ⤴  
% Memory Used ⤵

A bar showing the percent of memory used appears.  
Press any key to return to the previous menu.

#### Viewing the Firmware Version

**Menu** → ⤴ Settings → ⤵  
⤴ See Scanner Info ⤵ ⤴  
Firmware Version ⤵

Press any key to return to the previous menu.

### Adjusting the Key Beep

**Menu** → ⤴ Settings → ⤵  
⤴ Adjust Key Beep ⤵ ⤴

*Auto* - the scanner automatically sets the key beep to match the master volume setting level you select.

*Level 1 - 15* the scanner lets you select a key beep level. You can choose any of 15 different key beep levels.

*Off* - the scanner turns the key beep off.

### Locking/Unlocking the Keypad and Scroll

Press and hold down **Func** then press **⏻ / ⏹ / 🔒** to lock or unlock the keypad. *Keypad Lock* and *On* (if the keypad is locked) or *Off* (if the keypad is unlocked) appears. This does not affect the volume setting. The scroll control still controls the volume when you lock the controls.

## Turning Power Save On or Off

**Menu** → ⤴ Settings → ↓  
 ⤴ Set Battery Save ↓ ⤴

- **On** The scanner goes into low-power mode when you monitor a conventional channel that has no activity.
- **Off** Power save is off.

## Priority Scan

**Menu** → ⤴ Set Priority → ↓

Or, while holding on any channel in Scan Mode, press **Func** + **1/pri** to select one of these priority modes:


- **Off** Normal scanning
- **On** While scanning a conventional system, the scanner interrupts every 2 seconds and checks the priority channels in each unlocked conventional system. Priority channels in lower quick key numbered systems (starting from 1) have highest priority. **PRI** appears when you select this mode.
- **Plus On** The scanner only scans priority channels in unlocked conventional systems. **PRI** flashes when you select this mode.

## Using the Backlight

**Menu** → ⤴ Settings → ↓  
 ⤴ Set Backlight ↓ ⤴

- **10 sec** The backlight stays on for 10 seconds after you press **⏏**.
- **30 sec** The backlight stays on for 30 seconds after you press **⏏**.
- **Squelch** The backlight turns on when the squelch opens then stays on for 5 seconds.
- **Keypress** The backlight turns on when any key is pressed then stays on for 10 seconds.
- **Infinite** The backlight turns on when you press **⏏** then stays on until you press **⏏** again.

## Settings

Pressing any key while the backlight is on extends the backlight period. Pressing  while the backlight is on turns off the backlight.



## Setting the Audio AGC

**Menu** →  Settings → ↓  
 Set Audio AGC ↓

This setting helps balance the audio level you hear as you listen to different radio sources so you can hear them at a similar volume. Use this setting if you listen to an audio source that has natural changes in audio level for which you want to compensate.

- **On** Press the scroll control to select. Audio AGC is turned on.
- **Off** Press the scroll control to select. Audio AGC is turned off.

## Adjusting the Display Contrast

**Menu** →  Settings → ↓  
 Adjust Contrast ↓

Contrast 1 - 15 the scanner adjusts the display to the contrast level you select.

This setting controls the display's contrast (how light or dark it appears). Use this setting to change the contrast for different viewing conditions. There are 15 contrast settings. You see the change in contrast as you scroll through the settings.

## Initializing the Scanner's Memory

1. Turn off the scanner.
2. Press **2**, **9**, and **Hold** while turning on the scanner.  
All Memory Clear Please Wait appears.

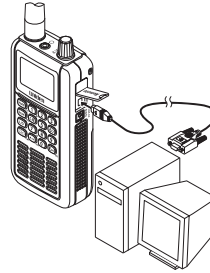
## Connecting Your Scanner to a Personal Computer

To connect your scanner to a personal computer, you must first set the scanner's baud rate (the rate at



which data is transferred between the scanner and the computer, in bits per second (bps).

**Important!** Before you start transferring data between your scanner and your computer, make sure the batteries are fresh or fully charged. If the scanner loses power while you are transferring data, its memory might be corrupted and all information programmed in the scanner might be erased.



Hint: If you have trouble transferring data between your scanner and your computer, try setting the baud rate to a slower setting.

Use the optional connection cable to connect your scanner to another UBC3500XLT scanner or your personal computer. Optional software is available at <http://www.racescanner.eu>.

**Menu** → ↻ Settings → ↓  
 ↻ PC Control ↓

**PC Control** Lets you set the baud rate your scanner uses to communicate with a personal computer.

- Off The baud rate is not set.
- 9600 bps The baud rate is set to 9600 bps.
- 19200 bps The baud rate is set to 19,200 bps.
- 38400 bps The baud rate is set to 38,400 bps.
- 57600 bps The baud rate is set to 57,600 bps.
- 115200 bps The baud rate is set to 115,200 bps.


## Using the Cloning Options

Lets you set your scanner as a master (source) or slave (recipient), letting you transfer programming to or from another UBC3500XLT scanner. See “Wired Cloning” on Page 42.

## Settings

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## Wired Cloning

**Menu** →  Wired Clone → ↓

- **Master** Sets the scanner to be the source scanner.
- **Slave** Sets the scanner to be the recipient scanner.

To clone (copy) data directly from one UBC3500XLT scanner to another UBC3500XLT scanner, you must first connect the scanners to each other using the included connection cables and a DB9 null modem adapter and DB9 gender changer (neither included), available at most computer stores. Then you must set one scanner as the source and the other as the destination.

Plug the smaller end of each of the included connection cables into **Remote** on the right side of each scanner. Then connect the other end of the cables together using the null modem connector and gender changer.

Then set the scanner containing the programming you want to transfer as the master scanner, then set the other scanner as the slave scanner.

(Master scanner) Clone Master Press SCAN Key  
→ **Scan**

(Slave scanner) Clone Slave Press SCAN Key  
→ **Scan**

When you are ready to clone the scanner, press **Scan** on the slave scanner first, then on the master scanner. The master scanner checks the connection between the two scanners, then transfers its data to the slave scanner.

When the transfer is complete, **Complete** appears on both scanners. If the transfer did not work, **Error** appears on the master scanner.

## Programming Radio Systems

To get the most enjoyment from your scanner, you must customize the programming for your area.

Use the menu to navigate to the system setting you want to customize. Programming radio systems is completed in two major steps. Don't skip either step!

1. Plan the system.
2. Program the system into your scanner according to the plan you prepared in Step 1.

To make planning easier, planning worksheet is included in the back of this manual for each system type. Copy the worksheet or download the worksheet from <http://www.racescanner.eu> and print extra sheets), then use them to plan out how you will program the scanner.

**Important!** Before you start programming your scanner, make sure the batteries are fresh or fully charged. If the scanner loses power while you program it, its memory might be corrupted which will require you to reinitialize it (see "Initializing the Scanner's Memory" on Page 40). All information programmed in the scanner, including preprogrammed systems, might be lost.

### General Notes

- You can store up to 200 systems.
- You can store up to 20 channel groups per system.
- Total channels are limited to 2,500

## Programming Conventional Systems

**Menu** → Program System → ↓

↻ New System ↓

The scanner creates an empty conventional system, with a default name of System n.

n is a number that increments as you add new systems.

## Programming Radio Systems

Refer to the appropriate section to set system-wide options:

- See “Editing the System Name” on Page 46
- See “Editing the System Quick Key” on Page 46
- See “Setting System Lockout” on Page 47
- See “Setting the System Hold Time” on Page 47
- See “Setting the Channel Delay Time” on Page 48
- See “Setting the Data Skip” on Page 48
- See “Deleting Systems” on Page 49
- See “Copying Systems” on Page 49
- See “Entering/Editing Conventional Channel Groups” on Page 44

### ***Entering/Editing Conventional Channel Groups***

To enter channels in a conventional system, first set up a channel group (or groups) to hold the channels. Then, enter the channel and channel parameters in the group(s).

#### **Setting Up a Channel Group**

**Menu** → Program System → ↓  
↻ Select the system → ↓  
↻ Edit Group ↓  
↻ New Group ↓

The scanner creates a group with a default name of Group n. n increments by one for each new group you create within a system. Refer to the appropriate section to set group-wide options:

- See “Entering/Editing the Group Name” on Page 49
- See “Setting the Group Quick Key” on Page 50
- See “Deleting Groups” on Page 51
- See “Setting Group Lockout” on Page 51
- See “Entering/Editing Conventional Channels” on Page 45

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## **Entering/Editing Conventional Channels**

- Menu** → Program System → ↓
- ↻ Select the system → ↓
- ↻ Edit Group ↓
- ↻ Select the group → ↓
- ↻ Edit Channel → ↓
- ↻ New Channel → ↓

Refer to the appropriate section to change a channel setting:

- See “Editing the Channel Name” on Page 51
- See “Editing Frequencies” on Page 52
- See “Setting Channel Priority” on Page 53
- See “Deleting Channels” on Page 57
- See “Copying/Pasting Channels” on Page 57

Note: The scanner automatically sets the step to match the input frequency.

## **Programming Radio Systems**

## Programming/Editing Optional Settings

This section details the instructions for each of the optional programming steps referred to in “Programming Radio Systems” on Page 43. Use the instructions in the appropriate section to enter or edit a setting.

### System-Level Settings

#### *Editing the System Name*

**Menu** → Program System → ↓

↻ Select the system → ↓

↻ Edit Name ↓

To enter a letter, turn the scroll control until the character you want appears. To enter a decimal point, press •. To move the cursor to the left, press < /4 or hold **Func** and rotate the scroll control to the left.

To move the cursor to the right, press 6 / > or hold **Func** and rotate the scroll control to the right.

To clear a character, press • twice. To clear all characters, press • 3 times.

To accept an entry, press **E** or press down on the scroll control.

Hints:

- Each system name can be up to 16 characters. Abbreviate as necessary to fit.

#### *Editing the System Quick Key*

**Menu** → Program System → ↓

↻ Select the system → ↓

↻ Edit Sys Option ↓

↻ Set Quick Key ↓

After selecting this option, select any number from 1-99 to assign the system to a quick key or press • to assign the system to no quick key, then press **E**.

**Hints:**

- Access single-digit system Quick Keys by pressing the single digit on the keypad during scanning. Access two-digit system Quick Keys by pressing • then both digits.
- You can assign as many systems to the same quick key as you want.
- To be scanned, a system's quick key must be activated and the system must be unlocked.

**Setting System Lockout**

**Menu** → Program System → ↓  
 ↻ Select the system → ↓  
 ↻ Edit Sys Option ↓  
 ↻ Set Lockout ↓

This setting controls whether the system is scanned when its quick key is enabled. Rotate the scroll control to select your setting, then press **E**.

Lockout - the system is not scanned

Unlocked - the system is scanned

**Note:** You can also lock or unlock a system by holding **Func** and rotating the scroll control to select the system, then pressing **Func** + **L/O**.

**Setting the System Hold Time**

**Menu** → Program System → ↓  
 ↻ Select the system → ↓  
 ↻ Edit Sys Option ↓  
 ↻ Set Hold Time ↓

This setting controls how many seconds the scanner scans a system before moving to the next unlocked system. Enter a value from 0-255, then press **E** to save the setting.

**Programming/Editing Optional Settings**

Notes:

- If you select 0, the scanner stays on the system for a minimal time (only long enough to check current system activity).
- The default setting is 2 seconds for each system.
- For conventional systems, all unlocked 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.

### Setting the Channel Delay Time

**Menu** → Program System → ↓  
↻ Select the system → ↓  
↻ Edit Sys Option ↓  
↻ Set Delay Time ↓

This setting controls how many seconds the scanner waits after a transmission ends before resuming scanning. Enter a value from 1-5 or *Off*, then press **E** or the scroll control.

Notes:

- The default setting is 2 seconds for each system.
- This setting applies to all channels within the system.

### Setting the Data Skip

**Menu** → Program System → ↓  
↻ Select the system → ↓  
↻ Edit Sys Option → ↓  
↻ Set Data Skip → ↓

This setting controls how the scanner behaves when it stops on a channel that has a data signal.



**On** - The scanner ignores the Data Signal and resumes searching in a few seconds.

**Off** - The scanner treats all signals as normal transmission.

### **Deleting Systems**

**Menu** → Program System → ↓

↻ Select the system ↓

↻ Delete System ↓

The scanner prompts you to confirm deletion. To confirm, press **E**. To cancel, press **•**.

Notes:

- Deleted systems cannot be restored. You must re-enter them.
- You cannot restore preloaded systems.

### **Copying Systems**

To copy a system including all settings, groups, and channels:

**Menu** → Program System → ↓

↻ Select the system ↓

↻ Copy System ↓

New Sys Name?

Enter a name for the copied system, then press **E**.

### **Group-Level Settings**

The settings in this section apply to all of the channels stored in the current group.

#### **Entering/Editing the Group Name**

**Menu** → Program System →

↻ Select the system ↓

↻ Edit Group ↓

### **Programming/Editing Optional Settings**

↻ Select the group → ↓

↻ Edit Name → ↓

Follow these steps to enter/edit the group name.

1. Rotate the scroll control to select the first letter.
2. Press </4, or hold **[Func]** then rotate the scroll control to the left. To move the cursor to the right, press 6/> or hold **[Func]** and rotate the scroll control to the right.
3. Repeat Steps 1 and 2 until you have entered the system name. Then press **E** or press down on the scroll control to accept the setting.

Hints:

- Each group name can be up to 16 characters. Abbreviate as necessary to fit.
- The group and system name alternate in the top line of the display when the scanner stops on a channel.
- Press • twice to delete the current character.
- Press • three times to clear the entire alpha tag.

### Setting the Group Quick Key

**[Menu]** → Program System → ↓

↻ Select the system ↓

↻ Edit Group ↓

↻ Select the group → ↓

↻ Set Quick Key → ↓

After selecting this option, press **0-9** to assign the group to a quick key or press • to assign the group to no quick key, then press **E**.

Hints:

- You can assign as many groups to the same quick key as you want.
- A group's quick key must be activated to be scanned.

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## Setting Group Lockout

**Menu** → Program System →

↻ Select the system ↓

↻ Edit Group ↓

↻ Select the group → ↓

↻ Set Lockout → ↓

This setting determines whether the scanner scans this group when it is enabled. Select your setting, then press **E**.

Lockout - the group is not scanned.

Unlocked - the group is scanned.

Note: The default setting is Unlocked.

## Deleting Groups

**Menu** → Program System → ↓

↻ Select the system ↓

↻ Edit Group ↓

↻ Select the group → ↓

↻ Delete Group → ↓

The scanner prompts you to confirm deletion. To confirm, press **E**. To cancel, press **•**.

Note: Deleted groups cannot be restored. You must re-enter them.

## Channel-Level Settings

These settings affect only the channel you are programming.

### Editing the Channel Name

**Menu** → Program System → ↓

↻ Select the system ↓

↻ Edit Group ↓

## Programming/Editing Optional Settings

- ↻ Select the group → ↓
- ↻ Edit Channel → ↓
- ↻ Select the channel → ↓
- ↻ Edit Name → ↓

Follow these steps to enter/edit the channel name.

1. Rotate the scroll control to select the first letter.
2. Press </4, or hold **[Func]** then rotate the scroll control to the left. To move the cursor to the right, press 6/> or hold **[Func]** and rotate the scroll control to the right.
3. Repeat Steps 1 and 2 until you have entered the channel name. Then press **E** or press down on the scroll control to accept the setting.

Hints:

- Each channel name can be up to 16 characters. Abbreviate as necessary to fit.
- The channel name appears on the second line of the display when the scanner stops on a channel.
- If you do not enter a channel name, the scanner displays the frequency when it stops on a channel.
- Press • twice to delete the current character.
- Press • three times to clear the entire alpha tag.

### ***Editing Frequencies***

- [Menu]** → Program System →
  - ↻ Select the system ↓
  - ↻ Edit Group ↓
  - ↻ Select the group → ↓
  - ↻ Edit Channel → ↓
  - ↻ Select the channel → ↓
- Input Frequency

Input the frequency, then press the scroll control.  
 To change the frequency you entered, turn the scroll control to select `Edit Frequency`, then press the scroll control.

### Setting Channel Priority

- Menu** → Program System →
- ↻ Select the system ↓
- ↻ Edit Group ↓
- ↻ Select the group → ↓
- ↻ Edit Channel → ↓
- ↻ Select the channel → ↓
- ↻ Set Priority → ↓

This setting controls whether the scanner treats the channel as a priority channel while scanning. Select your setting, then press **E**.

**On** - when you turn on the Priority feature, the channel will be scanned every 2 seconds. **P** appears.

**Off** - the channel will not be treated with priority.

Note: The default setting is **Off**.

### Setting Channel Alert

- Menu** → Program System →
- ↻ Select the system ↓
- ↻ Edit Group ↓
- ↻ Select the group → ↓
- ↻ Edit Channel → ↓
- ↻ Select the channel → ↓
- ↻ Set Alert → ↓

**Off** - the scanner does not alert you to emergency transmissions.

## Programming/Editing Optional Settings

Alert 1 - 9 - the scanner sounds an alert beep to notify you of the emergency transmission. You can choose any of 9 different beep types.

→ Set Level

Auto - the scanner automatically sets the emergency alert beep to the master volume level.

Level 1 - 15 - the scanner adjusts the volume you hear to the level you select.

### Setting CTCSS/DCS

**Menu** → Program System →

- ↻ Select the system ↓
- ↻ Edit Group ↓
- ↻ Select the group → ↓
- ↻ Edit Channel → ↓
- ↻ Select the channel → ↓
- ↻ Set CTCSS/DCS → ↓

This setting controls how a subaudible CTCSS or DCS is used for the channel. Select your setting, then press **E**.

Off - any signal opens squelch.

Search - the scanner searches for and displays any CTCSS or DCS tone that accompanies the transmission.

CTCSS - the scanner only opens squelch if the CTCSS tone you select is also present with the signal. The scanner then prompts you to enter or scroll to the desired tone.

DCS - the scanner only opens squelch if the DCS tone you select is also present with the signal. The scanner then prompts you to enter or scroll to the desired tone.

Set Lockout - the scanner does not stop on the channel if the tone you select is present. The scanner prompts you to select a CTCSS or DCS tone.

Notes:

- The default setting is *Off*.
- See “What is CTCSS/DCS?” on Page 16 for a complete list of CTCSS and DCS tones.

### ***Setting the Channel Frequency Modulation***

- Menu → ↻ Program System → ↓
- ↻ Select the system → ↓
- ↻ Edit Group → ↓
- ↻ Select the group → ↓
- ↻ Edit Channel → ↓
- ↻ Select the channel → ↓
- ↻ Set Moduration → ↓

*Auto* - the scanner uses the default modulation for the frequency band.

*AM* - the scanner uses AM (amplitude modulation) for the frequency band.

*FM* - the scanner uses FM (frequency modulation) for the frequency band.

*NFM* - the scanner uses narrowband FM for the frequency band.

*WFM* - the scanner uses wideband FM for the frequency band.

*WFM (Broadcast)* - the scanner uses WFM Broadcast for the frequency band.

Note: The default setting is *Auto*.

This setting controls the modulation method used for the frequency band. In most cases, if you leave this set to *Auto*, the scanner automatically selects the correct modulation type for the system you are programming.

### **Programming/Editing Optional Settings**

## Setting Channel Attenuation

**Menu** → Program System → ↓  
↻ Select the system ↓  
↻ Edit Group ↓  
↻ Select the group → ↓  
↻ Edit Channel → ↓  
↻ Select the channel → ↓  
↻ Set Attenuator → ↓

This setting controls whether the scanner attenuates signals on this channel. Select your setting, then press **E**.

**On** - the channel is attenuated by about 25 dB.

**Off** - the channel is not attenuated.

Notes:

- The default setting is **Off**.
- You can also toggle this setting by holding on the channel and pressing **Func** and **E**.

## Setting Channel Lockout

**Menu** → Program System → ↓  
↻ Select the system → ↓  
↻ Edit Group → ↓  
↻ Select the group → ↓  
↻ Edit Channel → ↓  
↻ Select the channel → ↓  
↻ Set Lockout → ↓

This setting determines whether the scanner will scan this channel when its system and group are enabled. Select your setting, then press **E**.

**Lockout** - the channel is not scanned.

**Unlocked** - the channel is scanned.



Notes:

- The default setting is *Unlocked*.
- You can also lock or unlock a channel by selecting it while scanning or holding, then pressing **L/O**. See "Locking/Unlocking Channels" on Page 34.

### ***Deleting Channels***

- Menu** → Program System → ↓
- ↻ Select the system ↓
- ↻ Edit Group ↓
- ↻ Select the group → ↓
- ↻ Edit Channel → ↓
- ↻ Select the channel → ↓
- ↻ Delete Channel → ↓

The scanner prompts you to confirm deletion.  
To confirm, press **E**. To cancel, press **•**.

Note: Deleted channels cannot be restored. You must re-enter them.

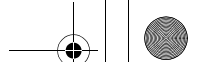
### ***Copying/Pasting Channels***

To copy a channel including all settings:

- Menu** → Program System → ↓
- ↻ Select the system ↓
- ↻ Edit Group ↓
- ↻ Select the group → ↓
- ↻ Edit Channel → ↓
- ↻ Select the channel → ↓
- ↻ Copy Channel → ↓

The scanner copies the channel into a copy buffer.  
To paste the channel into the same or another system:

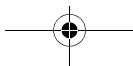
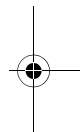
### **Programming/Editing Optional Settings**



- Menu** → Program System → ↓
- ↻ Select the system ↓
- ↻ Edit Group ↓
- ↻ Select the group → ↓
- ↻ Edit Channel → ↓
- ↻ Paste Channel → ↓

Then, if necessary, edit the channel you copied to give it a unique name and other settings.

Note: The paste option appears only if you have previously copied a channel from a system of the same type you are currently editing.



## Searching and Storing

### Service Search

Service Search lets you quickly select and search the scanner's preprogrammed search range. During service search, the scanner searches starting with the lowest frequency in the search range you select to the highest frequency in the range.

**Menu** → ↻ Search for ... → ↓  
Service Search → ↓

Air → ↓

The scanner searches the Air band, stopping on any transmission it finds and displaying the frequency. Turn the scroll control to change the search direction. An arrow appears, showing the current search direction.

To hold searching, press **Hold**. To resume searching, press **Func** then press **Scan/srch**. Or, press **Hold**.

To lock out a frequency found while searching, press **L/O**. **Locked Out** appears and the scanner resumes service search.

### Changing the step of Air Band

The air band step appears next to **Air** while searching the range. To change this step:

**Menu** → ↻ Srch/Clocall Opt → ↓  
↻ Air Band Step → ↓  
↻ Select the step → ↓

### Quick Search

Quick Search lets you search from the currently-tuned frequency if you are scanning a conventional system.

If you are on a conventional system or channel, press **Func** and **Scan/srch** to start quick search. **Quick Search?** Yes = "E" / No = "." appears.

## Searching and Storing

**Qck Search Hold** appears if you press **Hold**.  
Press **E** to start quick search or **no** to go to the search menu.

## Custom Search

Custom Search lets you program and search 10 custom search ranges. You can search any of these ranges simultaneously and select each custom search range you set. During custom search, the scanner searches starting with the lowest frequency in the search range you select to the highest frequency in the range.

Notes:

- Search ranges are preset. See “Editing a Custom Search Range” on Page 61 to change the range.
- You cannot turn off all custom search ranges.

**Menu** → ↻ Search for ... → ↓

↻ Custom Search ↓

The scanner starts custom search of the custom search range you selected, stopping on any transmission it finds and displaying the frequency. Turn the scroll control to change the search direction. An arrow appears, showing the current search direction.

To turn search ranges on or off, press **0** and **1-9**.  
To hold searching, press **Hold**. To resume searching, press **Func** then press **Scan/srch** or **Hold** again.

To lock out a frequency found while searching, press **L/O**. **Locked Out** appears and the scanner resumes custom search.

If you turn off the active custom search range, the scanner skips to the next custom search range and continues searching.

Note: If all frequencies in all active custom search ranges are locked out, **All Locked!** appears.

## Editing a Custom Search Range

You can edit up to 10 custom search ranges. The names of the custom search ranges appear on the display. The default custom search range names appear as Custom 1, Custom 2, and so on.

**Menu** → ↻ Search for ... → ↓  
 ↻ Edit Custom ↓

Select your setting, then press the scroll control.

**Edit Name** - lets you edit the custom search range's name

**Edit Srch Limit** - lets you view and select the frequency ranges to search. The scanner prompts you to enter the upper and lower search limits.

**Set Delay Time** - lets you set the amount of time the scanner will delay before continuing to search after a transmission ends

**Set Modulation** - lets you set the custom search range's modulation type

**Set Attenuator** - lets you set whether the scanner will attenuate reception by 25 dB during search

**Set Data Skip** - lets you set whether the scanner will skip data transmissions during search

**Set Step** - lets you set the custom search range's step (the gap between frequencies)

**Search with Scan** - sets whether the scanner includes the custom search during scanning.

**Set Lockout** - lets you set whether the scanner will scan the custom search range during scanning

**Lockout** - the custom search range is not scanned during scanning

**Unlocked** - the custom search range is scanned during scanning.

**Note:** You can also lock or unlock a custom search range by pressing **Func** + **L/O**. Or, you can select a

## Searching and Storing

custom search range to lock or unlock by rotating the scroll control with pressing **[Func]**.

**Set Hold Time** - lets you set the amount of time to hold the custom search range during scanning. You can set Hold time from 0 to 255 seconds.

**Notes:**

- If you select 0, the scanner then searches the entire range one time.
- The default setting is 2 seconds for each search range.
- The scanner moves to the next system or search range after the hold time expires, any current transmission ends, and the channel delay time expires.

***Editing a Service Search***

You can change the way service search works for each service.

**[Menu]** → ↻ Search for ... → ↓  
 ↻ Edit Service ↓

Select your setting, then press the scroll control.

- **Set Delay Time** This setting determines how long the scanner waits after a transmission ends before resuming quick search or Close Call operation. Select your setting, then press the scroll control.
  - Off** The scanner resumes immediately when the transmission ends.
  - 1-5 sec** The scanner waits the set amount of time after the transmission ends before resuming.
- **Set Attenuator** This setting controls the attenuator for search operation. Select your setting, then press the scroll control.

- Off The attenuator is off.
- On Reception is attenuated by about 25 dB.

**Notes:**

- Turn on this setting if you are near other strong signal sources. Attenuation sometimes helps to reduce interference and desensitization that strong signals create.
- Search with Scan - sets whether the scanner includes the service search during scanning. If unlocked, the scanner first scans all selected systems, then searches the air service searches for the selected hold time (0-255 seconds).

**Notes:**

- You can also lock and unlock a search range by pressing **[Func]**, selecting the search range then pressing **[Func] + L/O**.
- If you select 0, the scanner searches the entire range one time.
- The default setting is 2 seconds for each search range.
- The scanner moves to the next system or search range after the hold time expires, any current transmission ends, and the channel delay time expires.

## Auto Search and Store

Your scanner's Auto Store feature lets you search for new frequencies in custom search ranges or within a service search range and stores the frequency into a conventional system automatically.

### Selecting a System

To store frequencies which is found during Auto Store, you must first select a system where the frequencies will be stored.

## Searching and Storing

**Menu** → ↻ Search for ... → ↓  
↻ Search and Store ↓  
↻ Select the system where you want to store the frequencies → ↓  
↻ Select the range from Custom Search or Air → ↓

Notes:




- If no system is programmed, No System Stored appears.
- Over Limit appears when you select the system which has already stored 20 channel groups, or when the total channels has been already 2500.
- If all the frequencies of the selected search range is locked out, All Locked! appears.

When you select a search range, the scanner looks for active frequencies within that range and SEARCH AND STORE appears on the display's lower line and the system name and search range name appear on the display's upper line. When the scanner finds an active transmission, it checks to see if the frequency has already been stored in the system. If the frequency has already been stored, the scanner continues to search. If the frequency has not been stored, it stores the frequency into a group named Found Channels, then resumes searching. The scanner creates this group if it doesn't already exist.



## Using the Close Call Feature

Your scanner's Close Call™ feature lets you set the scanner so it detects, displays the frequency of, and lets you hear a nearby strong radio transmission. You can set the scanner so the Close Call feature works "in the background" while you are scanning other frequencies, turn off normal scanning while the Close Call feature is working, or turn off the Close Call feature and use the scanner normally. You can set the scanner so it alerts you when the Close Call feature finds a frequency. You can also set the frequency band where you want the scanner to look for transmissions.

To turn Close Call detection on (CC DND, CC PRI) or off, press **[Func]** then . When CC DND is on,  appears on the display. When CC PRI is on,  appears on the display and normal operation is briefly interrupted about every 2 seconds.

### Notes:

- CC DND (Do Not Disturb) - The scanner checks for a Close Call hit every 2 seconds only if the scanner is not currently stopped on a transmission. If the scanner is on a transmission the scanner waits until the signal ends to perform a Close Call check. This prevents breaks in audio during Close Call checks.
- CC PRI - Close Call works even if there is a transmission. Checks for a Close Call hit every 2 seconds.
- 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. Several factors affect Close Call performance, however. Performance is increased with higher transmit power, receive antenna tuned to the target band, and a low background RF level. Other than the antenna, you have no control over these factors, but they explain why performance might vary by both location and time.

## Using the Close Call Feature

- The Close Call feature cannot detect satellite dishes or any transmitter with a frequency above or below the frequency ranges listed under the `Set CC Bands`: option on Page 68.
- 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.

## Setting Close Call Options

**Menu** →  `Close Call` → ↓

Select your setting, then press the scroll control.  
Then turn the scroll control to select an option.

- `Close Call Only`: Lets you set the scanner only for Close Call searching. The scanner does not scan frequencies or channels when this option is turned on. To select this option, press **E**.
- `CC Auto Store`: Lets you select whether the scanner automatically stores Close Call hits into channels. If you turn this option on, the scanner starts Close Call mode and stores any Close Call hits, up to the maximum you specified in the `Max Auto Store` setting. If the scanner stores more hits than this setting, it stops Autostore operation.  
Turn the scroll control to display an option, then press the scroll control.
- `Set CC Mode`: Lets you select the Close Call mode. If you turn this option on (`CC DND`, `CC PRI`), the scanner sets itself to its Close Call settings about once every 2 seconds.  
Turn the scroll control to display an option, then press the scroll control.

**CC DND (Do Not Disturb)** - The scanner checks for a Close Call hit every 2 seconds only if the scanner is not currently stopped on a transmission. If the scanner is on a transmission the scanner waits until the signal ends to perform a Close Call check. This prevents breaks in audio during Close Call checks.

**CC PRI** - Close Call works even if there is a transmission. Checks for a Close Call hit every 2 seconds.

**Off** - Close Call is turned off for all mode.

**Note:** You can also toggle this setting by pressing **Func** then  $\diamond$

- **Set CC Override:** Lets you select how the Close Call feature works with other scanning activities.

**On** - If the scanner detects a Close Call frequency, **CC Found!** and **Press Any Key** appear, and the Close Call frequency is displayed by pressing any key while it is detecting.

**Off** - If the scanner detects a Close Call frequency, **CC Found!** and **"E" to Listen** appear for the period which you have set at **Set CC Pause** (See page 68). Press **E** to display the Close Call frequency during that period.

Turn the scroll control to display an option, then press the scroll control.

- **Set CC Alert:** Lets you select how the scanner alerts you when it receives a Close Call signal. You can select any of the following options.

Select Mode

- **Beep** (the scanner beeps when it receives a Close Call signal)
- **Light** (the backlight turns on when it receives a Close Call signal)

## Using the Close Call Feature

- **Beep+Light** (the scanner beeps and the backlight turns on when it receives a Close Call signal)
- **None** (the scanner does not alert)

Select Beep

- **Off** (the scanner does not beep)
- **Alert 1-9** - (the scanner sounds an alert beep to notify you of a Close Call hit. When you select an alert level, the scanner automatically enters the setting of the Alert volume level. You can choose different beep types.)

**Set CC Pause:** Lets you select how long the scanner waits after a hit before it returns to the previous operation.

- 3/5/10/15/30/45/60 sec.
- Infinite.

Turn the scroll control to display an option, then press the scroll control to select it.

- **Set CC Bands:** Lets you select the Close Call band settings. You can turn the following bands on or off.

VHF Low1 (25.0000 - 53.9875 MHz) Band Plan1  
(25.0000 - 53.9950 MHz) Band Plan2  
(25.0000 - 53.9937 MHz) Band Plan3

VHF Low2 (54.0000 - 107.9500 MHz)

Air Band (108.0000 - 136.9875 MHz) Air 12.5k  
(108.0000 - 136.9916 MHz) Air 8.33k

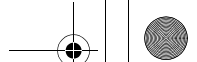
VHF High1 (137.0000 - 224.9950 MHz)

VHF High2 (225.0000 - 319.9500 MHz)

UHF (320.0000 - 512.0000 MHz)

800MHz+ (806.0000 - 1300.0000 MHz)

Use the scroll control to select a band, press the scroll control, then use the scroll control to select **On** or **Off** and press the scroll control. Turning off undesired bands speeds up Close

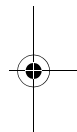


Call operation. (The Close Call feature works for all frequencies listed above.)

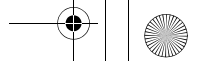
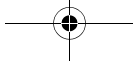
## Close Call Hits

When the scanner detects a Close Call hit, it alerts you according to the Override and Alert settings in the previous section. While listening to a Close Call hit, you can press **Hold** to hold on the hit frequency, press the scroll control to quickly save the frequency into memory, press **L/O** to lock out the frequency from Close Call and Search operation, or wait for the transmission to end. If you are in Close Call Only or Close Call Override mode, and you do not press any key, the scanner returns to its previous operation after the transmission ends and the set delay time expires.

If you are holding on the frequency, press **Hold** again to resume the previous operation.



## Using the Close Call Feature



## Search and Close Call Options

The settings in this section affect custom searches, air service search and Close Call operation.

See the table below showing what options are available for each of the search modes.

Setting Item	Service Search*1	Custom Search *1	Quick Search	Search and Store	Close Call	CC Auto Store
Freq Lockouts	0	0	0	0	0	0
Broadcast Screen		0	0	0*2	0	0
CTCSS/DCS Search		0	0	0	0	0
Max Auto Store				0		0
Set Delay Time			0		0	
Set Modulation			0			
Set Attenuator			0		0	0
Set Data Skip			0		0	0
Set Step			0			
Air Band Step	0	0	0	0	0	0

\*1 Valid also for Service Search with Scan and Custom Search with Scan.

\*2 Valid only when using Custom Search.

## Managing Locked-Out Frequencies

While searching or during Close Call operation, if you press **L/O** while the scanner is stopped on a frequency, that frequency is locked out of these modes. You can lock out up to 200 frequencies.

Note: Locking out a frequency does not lock out a channel that contains that frequency.

### Unlocking All Frequencies

**Menu** → **Srch/CloCall Opt** ↓  
**Freq Lockouts** ↓  
**Unlock All** → ↓

The scanner prompts you to confirm deletion.  
 To confirm and delete all locked-out frequencies, press the scroll control. Otherwise, to cancel, press **•**.

### Reviewing Locked Out Frequencies

**Menu** → **Srch/CloCall Opt** ↓  
**Freq Lockouts** ↓

↻ Rvw Search L/O → ↓

The scanner displays the first locked-out frequency and prompts you to unlock the frequency. Press the scroll control to unlock the frequency. Or, rotate the scroll control or press • to select a different frequency. To exit the review, press **Menu**.

## Searching for Subaudible Tones

**Menu** → ↻ Srch/CloCall Opt ↓  
 ↻ CTCSS/DCS Search → ↓

This setting controls whether the scanner will search for a subaudible tone when it stops on a transmission during search or Close Call operation.

**On** The scanner searches for and displays any subaudible tone found.

**Off** The scanner does not search for subaudible tones.

**Note:** This feature does not operate when the scanner is in AM/WFM/FMB modulation mode.

## Screening Out Broadcast Sources

**Menu** → ↻ Srch/CloCall Opt ↓  
 ↻ Broadcast Screen → ↓

This setting determines whether the scanner automatically ignores transmissions found during Custom Search or Close Call operation that are on common broadcasts and other annoyance radio sources.

**Set All Band On** - turns on broadcast screen on each band.

**Set All Band Off** - turns off broadcast screen on each band.

**Set Each Band** - lets you set broadcast screen only on specific bands you select. **On** or **Off** appears next

## Search and Close Call Options

to each option. Turn the scroll control to select an option then press the scroll control to change the setting.

- Band 1-10 - select the custom band where you want to screen out broadcast sources.



Program Band - lets you program a custom frequency range for broadcast screen. Turn the scroll control to select an option then press the scroll control to change the setting.

- Band 1-10 - select the group where you want to screen out broadcast sources.

Set Lower Limit - the lower limit of the frequency range, then press the scroll control to set it.

Set Upper Limit - the upper limit of the frequency range, then press the scroll control to set it.

## Setting the Maximum Auto Store Value



**Menu** →  Srch/CloCall Opt ↓  
 Max Auto Store → ↓

This value sets how many hits the scanner will automatically store when it is in either Search and Store or Close Call Auto Store mode.

Use the number keys to enter a value from 1 - 256, then press the scroll control.

When the scanner reaches the maximum number of hits you set, it stops the auto-store operation.

## Setting the Modulation Type

**Menu** →  Srch/CloCall Opt ↓  
 Set Modulation → ↓



This setting controls the modulation type used for quick search and Close Call operations. Select your setting, then press the scroll control.

**Auto** Uses the default setting for the current frequency (see the table at the front of the manual)

**AM** Uses AM (amplitude modulation)

**FM** Uses FM (frequency modulation)

**NFM** Uses narrowband FM

**WFM** Uses wideband FM

**WFM (Broadcast)** Uses WFM Broadcast.

## Setting Attenuation

**Menu** → ↻ Srch/CloCall Opt ↓  
 ↻ Set Attenuator → ↓

This setting controls the attenuator for quick search and Close Call operation. Select your setting, then press the scroll control.

**On** Reception is attenuated by about 25 dB.

**Off** The attenuator is off.

**Note:** Turn on this setting if you are near other strong signal sources. Attenuation sometimes helps to reduce interference and desensitization that strong signals create.

## Setting Data Skip

**Menu** → ↻ Srch/CloCall Opt ↓  
 ↻ Set Data Skip → ↓

This setting controls how the scanner behaves when it stops on a channel that has a data signal.

**On** - the scanner stops briefly on the channel, but then immediately resumes scanning automatically.

## Search and Close Call Options

*Off* - the scanner remains on the channel until the transmission stops.

**Notes:**

- If you are trying to test the Close Call feature with a nearby transmitter and you do not talk into the transmitter, the scanner will detect this as data and will skip the frequency when Data Skip is on. Turn the feature off or talk into the transmitter.
- This setting is ignored for AM/WFM/FMB channels.
- The default setting for this feature is *Off*.

## Setting the Delay Time

**Menu** → ↻ Srch/CloCall Opt ↓  
↻ Set Delay Time → ↓

This setting determines how long the scanner waits after a transmission ends before resuming quick search or Close Call operation. Select your setting, then press the scroll control.

*Off* The scanner resumes immediately when the transmission ends.

1-5 *sec* The scanner waits the set amount of time after the transmission ends before resuming.

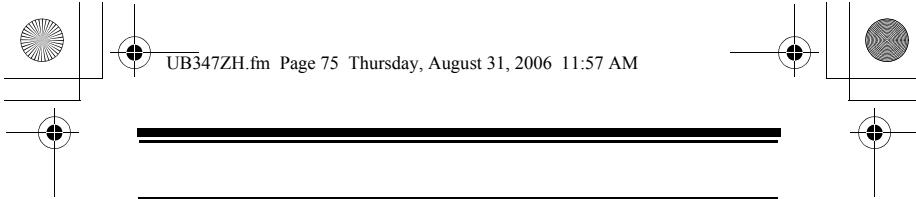
Note: The default setting is 2 *sec*.

## Setting the Search Frequency Step

**Menu** → ↻ Srch/CloCall Opt ↓  
↻ Set Step → ↓

This setting selects the frequency step used for setting the channels. Select your setting, then press the scroll control.

*Auto* The step is based on the band (see the table at the front of the manual)



5.0 kHz, 6.25 kHz, 7.5 kHz, 8.33 kHz, 10.0 kHz, 12.5 kHz, 15.0 kHz, 20.0 kHz, 25.0 kHz, 50.0 kHz, 100.0 kHz

The scanner uses the selected step.

Note: The scanner defaults to Auto.

## Setting Air Band Step

**Menu** → ↻ Srch/CloCall Opt → ↓  
↻ Air Band Step → ↓

This setting selects the step for Air Band (108.0000 MHz - 137.0000 MHz)

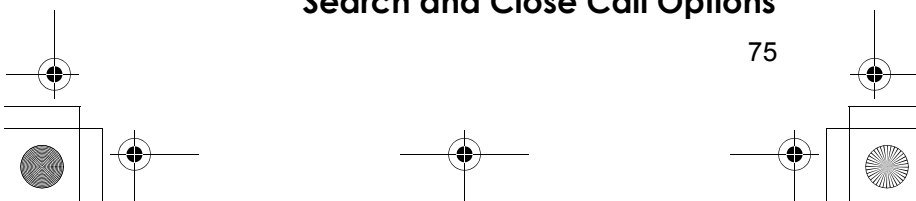
8.33 kHz

12.5 kHz

Note: The scanner defaults to 12.5 kHz.



## Search and Close Call Options



## Using Tone-Out

### Fire Tone-Out Introduction

Your scanner can be set to respond to fire tone-outs that use standard two-tone sequential paging, short one-tone paging, and long group tone paging. You can save up to 10 settings. When you select a setting in standby mode, the scanner also monitors for any other setting that uses the same transmit frequency, modulation, and attenuation settings.

You need tone-out setup information from the agency you wish to monitor. Check with your local agency or on-line resources.

### Setting Tone-Out Standby

**Menu** → ↻ Tone-Out for... → ↓  
Tone-Out Standby ↓

Turn the scroll control to select the tone-out to monitor. All tone-outs that have the same frequency, modulation, and attenuation setting as the one you select, are also monitored.

In standby mode, the display cycles through all monitored tone-out settings. Regardless of the current display, the scanner always alerts on any received tone-out that matches a stored setting.

If you press HOLD while in standby mode, the scanner temporarily exits the mode and you hear all transmissions on that frequency. No alerts sound, even if a tone-out matches one you have stored. Press HOLD again to return to standby mode.

### Setting Up Tone-Out

**Menu** → ↻ Tone-Out for ... ↓  
↻ Tone-Out Setup ↓

Scroll to select the tone-out (1 - 10) you want to program, then press EYES. Then you can scroll to any of the following settings and press EYES to select and modify the selected settings:

- **Edit Name** - Sets the name for the selected tone-out setting.
- **Set Frequency** – Sets the tone-outs RF frequency parameters.

**Edit Frequency** – Enter the desired frequency that the scanner should monitor for the tone-out.

**Set Modulation** — Set the modulation type for the paging signal.

**Auto** —The scanner uses the default modulation for the frequency band. If the default modulation is AM or WFM, the modulation operates as FM.

**FM** — The scanner uses FM for the frequency band. This is the default setting.

**NFM** — The scanner uses NFM modulation.

**Set Attenuation** — Turn the scroll control to select **On** or **Off**.

- **Set Tone** – Sets the audio tone frequency for the page.

**Edit Tone A** — Set the audio frequency for Tone A

**Edit Tone B** — Set the audio frequency for Tone B

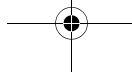
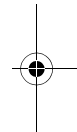
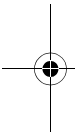
#### Notes:

- For two-tone pages, enter a value for A and B.
- For one-tone pages using short tones of less than 3.75 seconds, enter the tone value for A, and 0 (zero) for B.
- For long-tone pages, such as group pages of more than 3.75 seconds, enter 0 (zero) for A and the tone value for B.

## Using Tone-Out



- **Set Delay Time** – Sets the time the scanner remains in monitor mode after the scanner receives a page and the carrier drops.
  - 1-5 seconds: the scanner resumes standby mode after the carrier drops and the selected time expires.
  - Infinite: you must press HOLD after a page to resume standby mode.
  - Off: the scanner resumes standby as soon as the carrier drops after a page.
- **Set Alert** — Sets the alert the scanner uses when it receives an alert.
  - **Alert 1 - 9, Off** — scroll to select the alert tone pattern, The scanner sounds each alert as you scroll to its numbered value. If you select **off**, the scanner does not sound an alert.
  - After you select an alert pattern, the scanner prompts for the alert level for a received alert. Level options 1 to 15 sets a fixed audio level independent of the main volume setting. **AUTO** uses the main volume setting for the alerts.



## Care and Maintenance

### General Use

- Turn the scanner off before disconnecting the power.
- If memory is lost, simply reprogram each channel.
- Always press each button firmly until you hear the entry tone for that key entry.

### Location

- Do not use the scanner in high-moisture environments such as the kitchen or bathroom.
- Avoid placing the unit in direct sunlight or near heating elements or vents.
- If the scanner receives strong interference or electrical noise, move it or its antenna away from the source of the noise. If possible, a higher elevation might provide better reception.
- Also try changing the height or angle of the antenna.

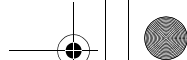
### Cleaning

- Disconnect the power to the unit before cleaning.
- Clean the outside of the scanner with a mild detergent.
- To prevent scratches, do not use abrasive cleaners or solvents. Be careful not to rub the LCD window.
- Do not use excessive amounts of water.

### Repairs

Do not attempt any repair. The scanner contains no user serviceable parts. Contact the Uniden Customer Service Center or take it to a qualified repair technician.

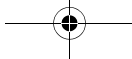
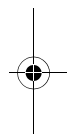
## Care and Maintenance



## Birdies

All radios can receive “birdies” (undesired signals). If your scanner stops during Scan mode and no sound is heard, it might be receiving a birdie. Birdies are internally generated signals inherent in the electronics of the scanner.

Press **L/O** to lock out the channel.





## Troubleshooting

If your UBC3500XLT is not performing properly, try these steps.

<b>Problem</b>	<b>Possible Cause</b>	<b>Suggestion</b>
The scanner doesn't work.	The scanner might not be receiving any power.	Make sure the AC adapter is connected to an AC outlet and the scanner.
		If there is a wall switch that controls power to the AC outlet where you connected the AC adapter, make sure it is on.
Improper reception.	The antenna might need to be adjusted.	Check the antenna connection or move or reposition the antenna.
		Move the scanner.
		You might be in a remote area that could require an optional multi-band antenna. Check with your dealer or local electronics store.
Scan won't stop.	The squelch might need to be adjusted.	Adjust the squelch threshold. See "Turning On the Scanner and Setting the Squelch" on Page 31.
	The antenna might need to be adjusted.	Check the antenna connection.
	One or more channels might be locked out.	Make sure the channels you want to scan are not locked out.
	The channel's frequency might not be stored in memory.	Make sure the channel's frequency is stored in the scanner's memory.
	The channel might not be active.	Wait for a transmission on the channel.

## Troubleshooting

Scan won't start.	You must press <b>Scan</b> to scan.	Press <b>Scan</b> .
	The squelch might need to be adjusted.	Adjust the squelch threshold. See "Turning On the Scanner and Setting the Squelch" on Page 31.
	One or more channels might be locked out.	Make sure the channels you want to scan are not locked out.
	The antenna might need to be adjusted.	Check the antenna connection.
Scanner displays Memory Error.	The contents of scanner's memory might be changed to malformed value.	Initialize the memory. See "Initializing the Scanner's Memory" on Page 40.

## Specifications

Certified in accordance with ETSI, as of date of manufacture.

Dynamic Allocation Capacity

Systems: 200 max

Groups: 20 per system

Channels: 2500

Band Coverage: 21 Bands

Attenuation: 25 dB (nominal)

Frequency Range (MHz): See page 6 to 7

Sensitivity (nominal) 12dB SINAD :

0.3uV 25 - 87.295 MHz FM

0.7uV 87.3 - 107.95 MHz FMB

0.4uV 108 - 136.9916 MHz AM

0.3uV 137 - 173.9937 MHz FM

0.7uV 174 - 215.95 MHz WFM

0.3uV 216 - 224.995 MHz FM

0.4uV 225 - 399.95 MHz AM

0.3uV 400 - 512 MHz FM

0.4uV 806 - 960 MHz FM

0.5uV 1240 - 1300 MHz FM

Operating Temperature:

Normal -20°C to +60°C

Close Call -10°C to +60°C

Scan Rate: 100 channels per second MAX

(conventional mode)

Search Rate: 300 steps per second (5 kHz step only)MAX

## Specifications



Audio Output: 500mW nominal into 24Ω internal speaker

110 mW nominal into 32Ω headphone

Power Requirements:

3 AA Alkaline Batteries (not included),

or 3 AA Rechargeable Ni-MH Batteries (2300 mAh)(Included),

or AC Adapter (AC230V 50Hz 6V 800mA Regulated)(AD-818)(Included)

External Jacks:

Antenna Jack SMA Type

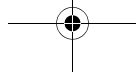
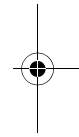
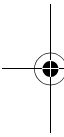
Headphone Jack 3.5mm Stereo Type

DC Power Jack (EIAJ TYPE-2 Center Positive)

Remote Jack 4 Pin Mini

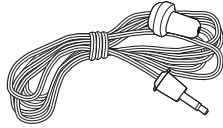
Size: 61.0 mm (W) x 31.0 mm (D) x 130.5 mm (H)

Weight: 182.5 g (without batteries and antenna)

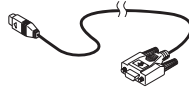




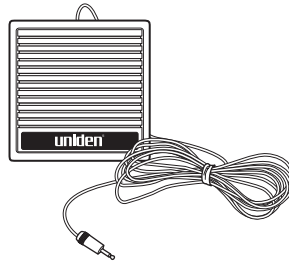
## Optional Accessories



Earphone



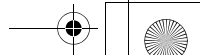
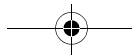
Connection  
Cable



External Amplified Speaker



## Specifications



## Appendix

### Initial Setting of the Menus.

Parameter		Initial		
Band Plan(Factory Default Setting) *Band Plan Number does not be initialized by turning the scanner on by pressing and hoding [2] key + [9] key + [Hold] key.		1		
Program System	Edit Name	(This is named automatically.)		
	Edit Sys Option	Set Quick Key	. (dot)	
		Set Lockout	Unlocked	
		Set Hold Time	2	
		Set Delay Time	2 sec	
		Set Data Skip	Off	
	Edit Group	Edit Name	(This is named automatically.)	
		Set Quick Key	. (dot)	
		Edit Channel	Edit Name	(This is named automatically.)
			Set Priority	Off
			Set Alert	Off
			Set CTCSS/DCS	Off
			Set Modulation	Auto
			Set Attenuator	Off
	Set Lockout	Unlocked		
Set Lockout	Unlocked			
Srch/CloCall Opt	Freq Lockouts	Unlock All	(Not Stored.)	
		Rvw Search L/O	(Not Stored.)	
	Broadcast Screen	Set Each Band	Band 1	Off
			Band 2	Off
			:	:
			Band 10	Off
		Program Band	Select Band 1 - 10	0.0000→0.0000 (MHz) (All Band)
		Set Lower Limit	(MHz)	
		→ Set Upper Limit	(All Band)	
	CTCSS/DCS Search		Off	
	Max Auto Store		100	
	Set Delay Time		2 sec	
	Set Modulation		Auto	
	Set Attenuator		Off	
	Set Data Skip		Off	
Set Step		Auto		
Air Band Step		12.5 kHz		

Parameter		Initial		
Search for...	Edit Service	Set Delay Time	2 sec	
		Set Attenuator	Off	
		Search with Scan	Set Lockout	Lockout
		Set Hold Time	2	
	Edit Custom (All Custom Search Range)	Edit Name	Custom 1	Custom 1
				Custom 2
				Custom 10
		Edit Srch Limit	Custom 1 :	Plan 1 : 25.0000 - 87.2875 Plan 2 : 25.0000 - 87.2950 Plan 3 : 25.0000 - 87.2937
			Custom 2 :	87.3000 - 107.9500
			Custom 3 :	108.0000 - 136.9875
			Custom 4 :	Plan 1, 2 : 137.0000 - 173.9950 Plan 3 : 137.0000 - 173.9937
			Custom 5 :	174.0000 - 215.9950
			Custom 6 :	216.0000 - 224.9950
			Custom 7 :	225.0000 - 399.9500
Custom 8 :	400.0000 - 512.0000			
Custom 9 :	806.0000 - 960.0000			
Custom 10 :	1240.000 - 1300.0000			
	Set Delay Time	2 sec		
	Set Modulation	Auto		
	Set Attenuator	Off		
	Set Data Skip	Off		
	Set Step	Auto		
	Search with Scan	Set Lockout	Lockout	
	Set Hold Time	2		

## Appendix

Parameter		Initial		
Close Call	Set CC Mode	Off		
	Set CC Override	On		
	Set CC Alert	Select Mode	Beep+Light	
		Select Beep	Alert 1 Level : Auto	
		Set CC Pause	3 sec	
	Set CC Bands	VHF Low 1	On	
		VHF Low 2	On	
		Air Band	On	
		VHF High 1	On	
		VHF High 2	On	
UHF		On		
800MHz+		On		
Set Priority		Off		
Tone-Out for...	Tone-Out Setup	Edit Name	Tone-Out 1	
			Tone-Out 2	
			:	
			Tone-Out 10	
	Set Frequency	Edit Frequency	Tone-Out 1 :	137.0000 MHz
			Tone-Out 2 :	138.0000 MHz
			:	
			Tone-Out 10 :	146.0000MHz
		Set Modulation	FM	
		Set Attenuator	Off	
Set Tone	Edit Tone A	1000Hz		
	Edit Tone B	2000Hz		
	Set Delay Time	2 sec		
	Set Alert	Off		
Wired Clone		Master		
Settings	Set Backlight	10 sec		
	Adjust Key Beep	Auto		
	Set Battery Save	On		
	Set Audio AGC	Off		
	Adjust Contrast	Contrast 8		
	PC Controls	115200 bps		
	See Scanner Info	% Memory Used	0%	
		Firmware Version	Version x.xx.xx	



## Planning

### Collecting Information

Getting your scanner programmed and scanning takes a few steps. This help guides you through these steps that will make it easier for you to start scanning.

1. Collect information about the system(s) you want to monitor.

Do you want to listen to your local police and fire departments? How about the highway patrol, ambulance service, and aircraft? You might even want to listen to your local utility company as they track down a break in electrical service in your area.

Make a list of the agencies you want to listen to, then look up the frequencies used by those agencies. The Internet is a great source for current frequencies and information about scanning. Here is a useful site:

- <http://www.racescanner.eu> - Race frequency information, programming software and accessories.
  - Before you start to program your scanner, decide how you want to organize the frequencies you want to scan. For example, some areas are best organized by geographic location (east, north, south, west, central, etc), while others are best organized by agency (police, ambulance, fire, etc.). You might even find it easier to organize a mixture of frequencies (north, southeast, and west for police but fire all in one group for example).
2. Organize the system information using the system worksheet included in this appendix.
  3. Follow the instructions in "Filling Out The Conventional System Worksheet" on Page 90.

## Planning

**Tips:**

- Before you start, make as many copies of the worksheet as you think you'll need. You can also go to the download section of <http://www.racsescanner.eu/download> and download the worksheets there.
- All worksheet instructions assume that you have completed the critical Step 1 (collecting the system information). Don't skip this step.
- Use a pencil to fill out the worksheets. This lets you change information if necessary.

## **Filling Out The Conventional System Worksheet**

### ***System Name and Quick Key***

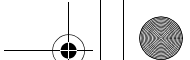
Fill in a name that describes the system you want to create. For example, you can enter "Local Police" or "Amateur Radio" here. If you want to store more than one type of frequency, you can enter "Mixed."

Fill in the key you want to press to quickly activate/deactivate the system. You can assign the same quick key to multiple systems.

### ***Group Name and Quick Key***

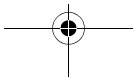
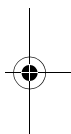
Each worksheet documents the settings for one channel group within a system. If you have fewer channels in the group than fits on the page, you can skip a line and enter an additional group of channels (enter the group info in the line you skipped). If you have more channels for the group than will fit on the page, use additional pages.

Fill in the key you want to press with **Func** to quickly activate/deactivate the channel group. You can assign the same quick key to multiple groups within a system.



## ***Frequency-Alpha Tag-Priority- CTCSS/DCS***

Fill in the details for each channel you want to store in this channel group.





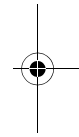
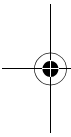


## **Declaration of Conformity**

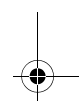
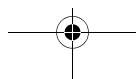
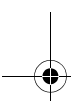


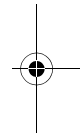
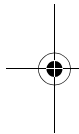
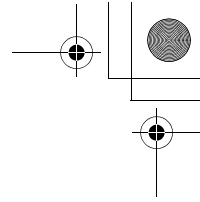
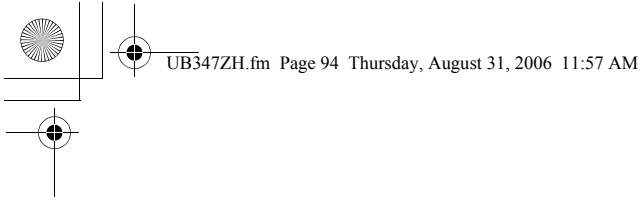
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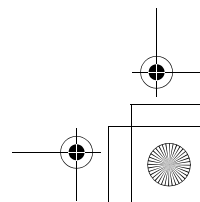
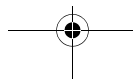
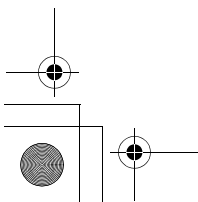




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