

Uniden BC245XLT Trunk Tracker II

The Uniden BC245XLT is the second generation of portable scanner which can follow conversations in trunked radio systems. It succeeds the 300 channel BC235XLT (see July 1997 *MT*).

The BC235XLT was revolutionary, but limited. It permitted scanning conventional and a single 800 MHz Motorola trunked radio system, but not at the same time. It wouldn't track Ericsson EDACS (Enhanced Digital Access Communications System) trunked systems, nor trunked systems outside the 800 MHz band.

The new BC245XLT can scan a mixture of conventional and trunked systems. What's more, it can track both Motorola and some types of Ericsson EDACS analog trunked systems in several bands (Table 1).

A new, side mounted connector permits computer control (using third party software) and scanner-to-scanner cloning. Uniden's Smart Scan service lets you connect the BC245XLT to a modem for downloading of frequency and trunk information over a telephone line from a Uniden database server. You will pay about \$1/minute when downloading from Uniden through the 900 telephone number. We didn't test this.

The new BC245XLT is sold with one BP-180, a proprietary 800 mA NiCd battery pack (Fig. 1). The earlier BC235XLT came with two BP-180 batteries plus a CRX120 auxiliary charging tray. Both models come with a wall wart charger/power supply. A stiff rubber helical antenna, computer cable, and a screw on plastic belt clip are also included.



FIGURE 1.
Proprietary BP-180 NiCd pack rated at 4.8 Vdc, 800 mA

Basic Features

The Philippine made BC245XLT operates much like the BC235XLT and other mid-line Bearcat models when used to monitor conventional systems. Its 300 channels are allocated among 10 banks and a short rescan delay may be programmed on a per channel basis. A query feature identifies duplicate memory channels.

Various combinations of banks may be scanned, and our BC245XLT scans a mixture of conventional frequencies at 74 channels/sec. Memory scan wastes no time scanning empty channels. Individual channels can be locked out from memory scanning, and a

simple keystroke sequence unlocks all locked channels in a bank.

One channel in each bank can be designated a priority channel and is sampled every 2 seconds. A single pair of frequency limits can be programmed for searching up or down, but searching and priority cannot be used simultaneously. Up to 50 frequencies may be locked out from a limit search, versus 20 in the BC235XLT.

Factory preprogrammed frequencies for police, fire/emergency, commercial air, marine, and weather can be scanned by pressing the SVC key. A new railroad service search facility alternately displays the frequency and railroad channel number. The display alternately flashes the marine channel number and frequency when paused during a marine service scan, as in the earlier BC235XLT. Up to 20 frequencies can be skipped during a service scan, except weather frequencies.

AM and NFM emission modes are selected automatically depending on the frequency and cannot be overridden. Later production runs of the BC235XLT included a global RF attenuator, a feature carried forward with the BC245XLT. Our attenuator measured from 0.4 dB @ 30 MHz to 21 dB @ 950 MHz.

A defeatable Auto Light feature illuminates the display for 2 seconds when the BC245XLT hears activity, an improvement over the BC235XLT.

Trunk Tracking

The BC245XLT is designed to follow conversations in several types of analog trunk systems, not including E. F. Johnson logic trunking radio (LTR) systems, which must be scanned in the



conventional mode (Table 1). We easily programmed two 800 MHz public safety Type II and one 800 MHz EDACS trunked systems by entering their frequencies.

Programming Motorola Type I or hybrid systems is complicated, because in addition to programming the frequencies, you must configure something called a "Fleet Map." There's no easy way to determine *a priori* the proper Fleet Map unless someone tells you. This was true of the BC235XLT, too.

Each of the BC245XLT's 10 banks can be programmed with the frequencies for a single trunked system, or with frequencies for conventional use, or both. You can follow trunked conversations and scan conventional systems at the same time in the same or different banks.

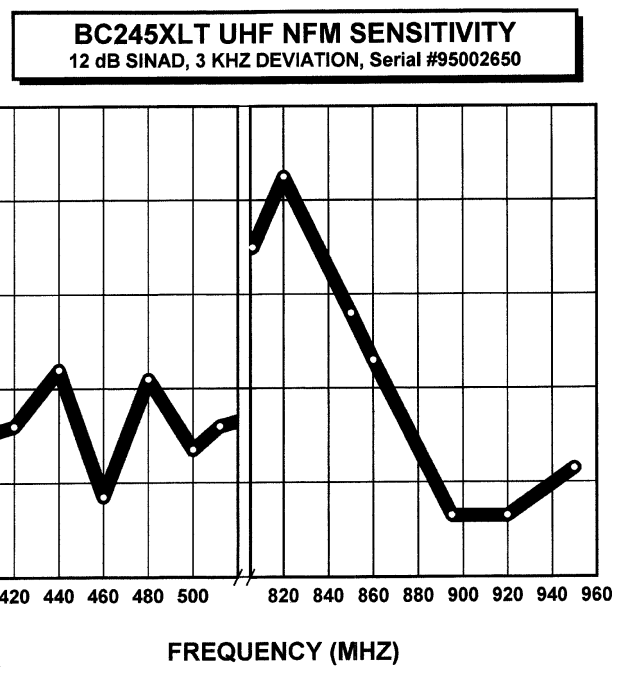
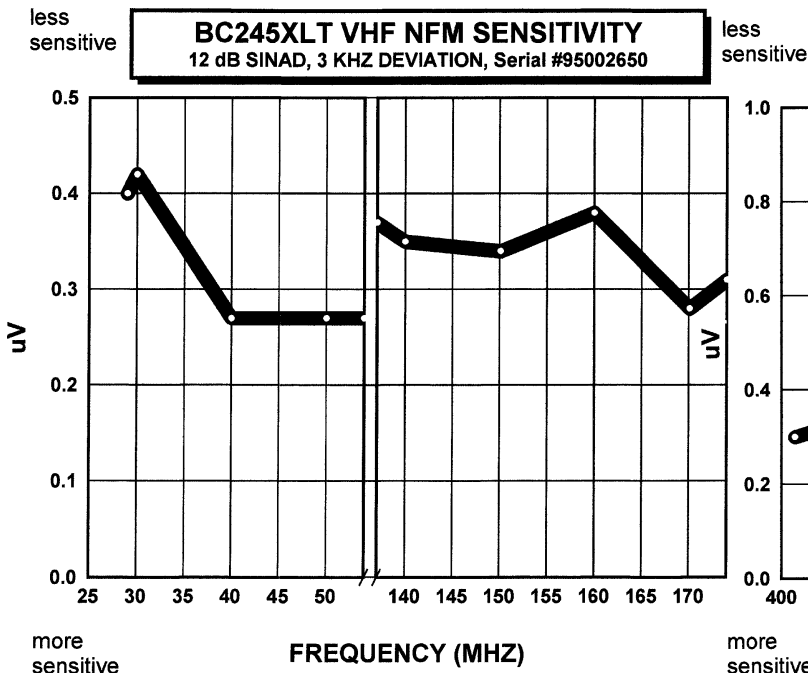
This doesn't work the way we expected. Our radio is programmed with one conventional bank and three trunked banks. If a talk group became active, our BC245XLT refused to scan the other banks no matter how many times we pressed the Scan key. Pressing the Scan key causes the radio to resume scanning, but only within the same trunked bank. Only when there were no more conversations in that bank did our BC245XLT start to scan the other banks.

Uniden designed the BC245XLT's delay, hold, and lockout facilities so operation is very similar in both trunk and conventional domains.

You can search or scan for active talk groups in the trunked domain and lock out up to 200 uninteresting talk groups (versus 100 in the BC235XLT). You can program up to 10 lists per bank with talk group numbers for scanning. Each list can hold up to 10 talk group IDs.

TABLE 1: ANALOG TRUNKING TECHNOLOGIES SUPPORTED BY THE BC245XLT

Analog Trunking System	Remarks
Motorola Type II, 800, 900 MHz:	Requires programming base and offset frequencies Requires programming a fleet map (1) Requires programming frequencies in exact order. (2) Cannot track some 900 MHz systems
Motorola Type II, 137-174, 406 - 512 MHz	
Motorola Type I, 800 MHz	
Ericsson EDACS:	



MEASUREMENTS
UNIDEN BC-245XLT SCANNER
S/N 95002650

Street price \$229.95
Uniden America Corp.
4700 Amon Carter Blvd.
Fort Worth, TX 76155

Frequency coverage (MHz):
29 - 54 (5 kHz steps)
108 - 137 (AM, 12.5 kHz steps)
137 - 174 (5 kHz steps)
406 - 512 (12.5 kHz steps)
806 - 823.9875, 849.0125 - 868.9875,
894.0125 - 956 (12.5 kHz steps)

Sensitivity:
see graphs

RF attenuator:
0.4 dB @ 30 MHz,
21 dB @ 950 MHz

FM modulation acceptance:
13 kHz

Intermediate Frequencies:
10.85, 0.45 MHz

Image rejection:
46 dB at 155 MHz, 46 dB at 858 MHz

Audio output power at earphone jack:
126 mW @ 10% distortion into 8 ohms

Practical memory scan speed:
74 ch/sec.

Search speed, Turbo:
267 steps/sec.

Search speed, regular:
80 steps/sec.

Current consumption at 4.8 Vdc:
off - 0 mA
manual - 75 mA
scan - 74 mA
full volume - 149 mA

Battery saver:
after one minute in Manual.

Low battery warning at 4.48 Vdc or less.
Shutdown at 4.29 Vdc or less.

■ **Performance**

Our BC245XLT is fairly sensitive, though weaker 800 MHz trunked signals are accompanied by an odd sounding staccato noise. We cannot determine if this is an artifact generated within the radio.

We detected 10.85 and 0.450 MHz IFs (intermediate frequencies) in the BC245XLT and BC235XLT. Both TrunkTrackers have image rejection superior to previous models with a 10 MHz range first IF. Our BC235XLT exhibited better image rejection than our newer BC245XLT in both the 150 and 850 MHz ranges.

Harmonics of the crystal controlled 10.4 MHz local oscillator were responsible for birdies at 31.2, 41.6, and 52 MHz.

■ **Other Observations**

Data Skip jumps over strong, unmodulated signals. It is disabled when scanning AM aircraft or using priority scan. When scanning trunked systems or a mixture of trunked and conventional systems, our BC245XLT turns off the Data Skip, a glitch not mentioned in the manual.

The Data Skip key is also used to choose what information is displayed while trunking, a fact documented in the manual but not betrayed by the key's label.

Audio output is crisp. Stereo or monaural headphones can be connected through a 1/8" jack on top and audio is heard from both sides. A 10 ohm series resistance is built into the earphone jack to prevent hearing damage



FIGURE 2. Side mounted remote port (rubber cover removed for photo)

when using an earphone. You can bypass the resistance to increase the audio output at this jack by connecting the audio shield (the outer metal portion of the earphone jack visible from the top of the radio) to the antenna jack's ground connection.

We listened for, but heard no intermod while using the BC245XLT while connected to a base station antenna.

■ **Summary**

Our BC245XLT worked nearly as advertised. We were disappointed with the Multi Track operation and the use of a proprietary battery pack instead of AA cells. Its trunktracking features, especially the ability to track many EDACS systems, is sure to delight the growing numbers of people who live in areas served by trunked repeaters. For more user feedback, BC245XLT owners share their experiences on the web, at <http://strongsignals.net/bc245xlt>. In all, it's a good radio even if you never press the Trunk key.

RadioMap™

Transmitter sites in your area are researched and marked on a beautiful 8-1/2 x 11 full color plot. See FCC licensed sites from VLF through microwave including police, fire, cellular phone sites, business, industrial, broadcasters and selected FAA transmitter sites. Callsigns, frequency assignments, and names provided. Ham radio stations not included.

You choose the map center location—your neighborhood, near your office, around sports stadiums—anywhere within the United States. We adjust map coverage for best readability, depending on transmitter site density.

Invaluable to radio professionals and hobbyists for identifying towers, sources of radio interference etc. Send nearest street intersection and check for \$29.95 payable to Robert Parnass.

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