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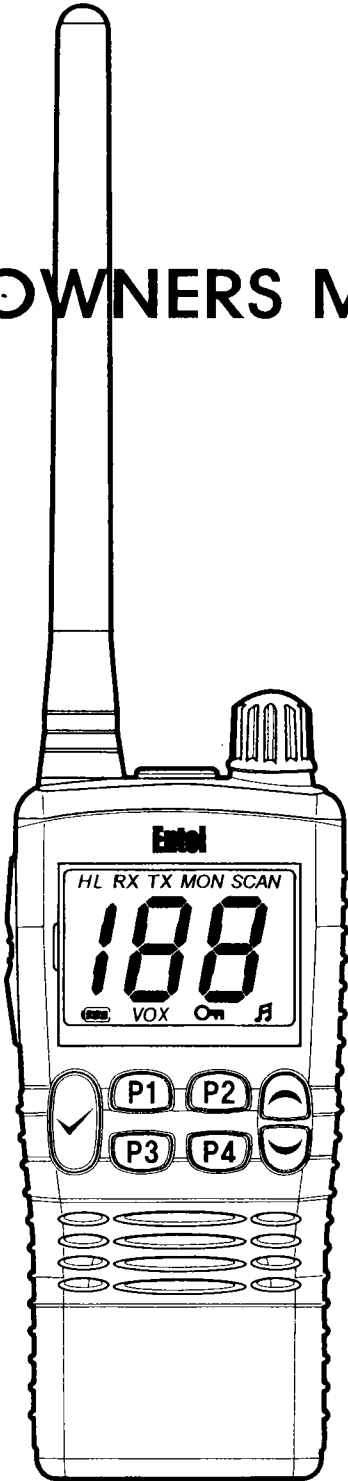
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HT700 Series

VHF/UHF submersible transceivers

OWNERS MANUAL



Entel UK



CE COMPLIANCE STATEMENT

The HT700 series transceiver displays "CE" on the serial number label, indicating its compliance with the essential requirements of the EEC directive for Electromagnetic Compatibility.

DECLARATION OF CONFORMITY

We Entel UK Limited,

OF:
3rd Floor, Ridgehill House, Elstree Way
Borehamwood, Herts
WD6 1JL
United Kingdom

Declare under our sole responsibility that the product:-
HT700 series VHF/UHF handheld transceiver

Serial Number -----
To which this declaration relates, is in accordance with directive 95/5/EC and conforms to the following standard or other nominative documents:-
EN 300 086-2 V1.1.1, EN 301 489-1 V1.5.1:2003, EN 60065:2002
Following provisions of the R&TTE directive.

M. Austin.

Quality Manager





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1.1 GENERAL FEATURES

1. Heavy duty, commercial grade construction
2. Submersible / Fully waterproof to JIS7
3. 128 PC programmable channels
4. All CTCSS & DCS tones
5. Scan mode
6. Four programmable buttons
7. Lithium-Ion battery technology
8. 14 hour duty cycle
9. VOX (voice operated transmit)
10. Low battery warning bleep
11. Battery level indicator
12. Extensive range of accessories

1.2 PACKING LIST

- ▶ The supplied package:
- ▶ HT720/780 Transceiver
- ▶ CNB640E Rechargeable lithium-Ion battery pack
- ▶ CBH640 Spring loaded rear clip
- ▶ CAT20/80 High efficiency antenna
- ▶ Owners manual

1.3 OPTIONS (ACCESSORIES)

The HT700 Series is supported by a wide range of useful accessories. For an up to date list visit our web site at www.entel.co.uk

- CSA640E** Single pod rapid charger, 110/230v operation
- CSB640E** Six pod rapid charger, 110/230v operation
- CMC12** 12v trickle charger
- CMC230** 230v trickle charger
- CMC110** 110v trickle charger
- CST640E** 3 or 6 pod battery conditioner/analyser

- CNB640E** 7.4V 1800mAh rechargeable lithium-Ion battery pack

- CMP1/640** Small compact speaker microphone with earpiece jack
- CMP640** Submersible, noise cancelling speaker microphone (heavy duty)
- EA19/640** Earpiece microphone with PTT button (vox)
- EA15/640** Covert style ear/microphone with transparent acoustic tube
- MSP01/640** Crash helmet earpiece microphone with PTT

- CHP1/640** Light weight single earpiece headset with PTT
- CHP640HS** Heavy-duty single ear defender for hardhat with PTT (vox)
- CHP640HD** Heavy-duty double ear defender for hardhat with PTT (vox)
- CHP640D** Heavy-duty double ear defender with headband and PTT (vox)

- CXR5/640** Skull microphone (vox)
- CXR16/640** Throat microphone (vox)
- EHP640** Covert style earpiece

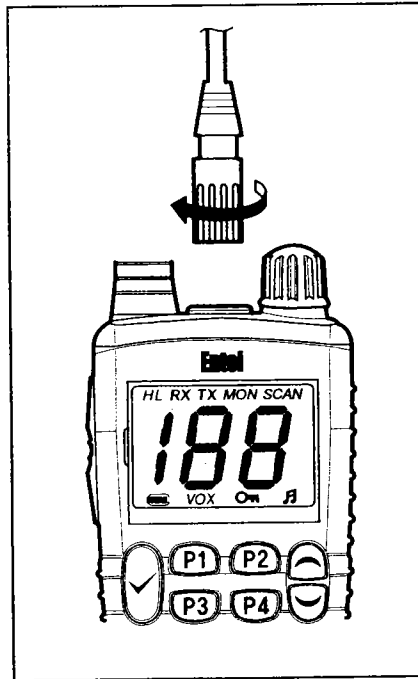
- CFC640** Coloured soft pouch with carry strap. (Red, blue, yellow)
- CLC940** Heavy duty pouch case with belt loop & carry strap
- CLC640** Heavy duty transparent case with belt loop & carry strap

- CXW640** Antenna adaptor for external aerial connection
- CAT20VS** Stubby antenna VHF
- CAT80US** Stubby antenna UHF
- CAT20** High efficiency antenna, VHF
- CAT80** High efficiency antenna, UHF
- CBH640** Spring loaded rear clip

Accessories suitable for vox operation have been marked (vox)

1.3.1 ATTACHING AUDIO ACCESSORIES

Locate accessory connector cover marked "ACC" Lift cover and rotate (screw) the connector clockwise.



IMPORTANT: When not using audio accessories, keep the accessory jack cover firmly pressed in its recess. This will prevent the accessory connectors from becoming rusty.

Figure 1.
Attachment of accessory connector

Preparation prior to use

- 1. Attaching the belt clip;** Align the belt clip with the plastic slots of the battery pack. Slide the belt clip downwards onto the battery pack, pushing firmly until a click is heard.
- 2. BATTERY REMOVAL/ATTACHMENT**
 1. Turn the transceiver off.
 2. Using a coin, rotate the battery screw anti-clockwise 2 or 3 turns.
****Ensure that you do not hold the battery pack when unscrewing the release screw!**

3. To attach the battery, locate the bottom section of the battery and press the battery against the transceiver, then rotate the battery screw clockwise.

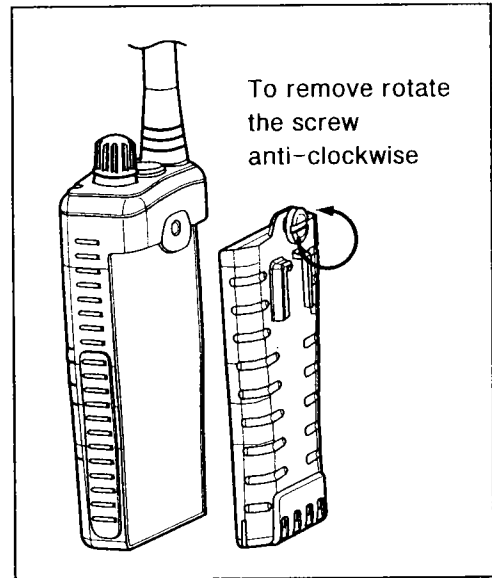


Figure 2.
Battery removal / Attachment

1.4 CONTROLS AND INDICATORS

1. POWER SWITCH/VOLUME CONTROL

Powers the transceiver on and off. Adjusts volume to desired level.

2. PUSH TO TALK SWITCH

Hold down to transmit, release to receive.

3. UP/DOWN button

Select the desired channel by pressing the UP/DOWN buttons. For fast channel selection hold down for more than 1 second.

4. LAMP/LOCK button

5. P1, P2, P3, P4 buttons

Dealer programmable.

6. ✓ button

Dealer programmable.

7. **MON buttons**
Dealer programmable.
8. **ANTENNA CONNECTOR**
Connects the supplied flexible antenna or an optional external aerial adaptor.
9. **BATTERY PACK**
Rechargeable lithium-ion battery packs provides.
10. **ACCESSORY CONNECTOR**
To connect any HT700 Series radio to an Entel approved audio accessory.

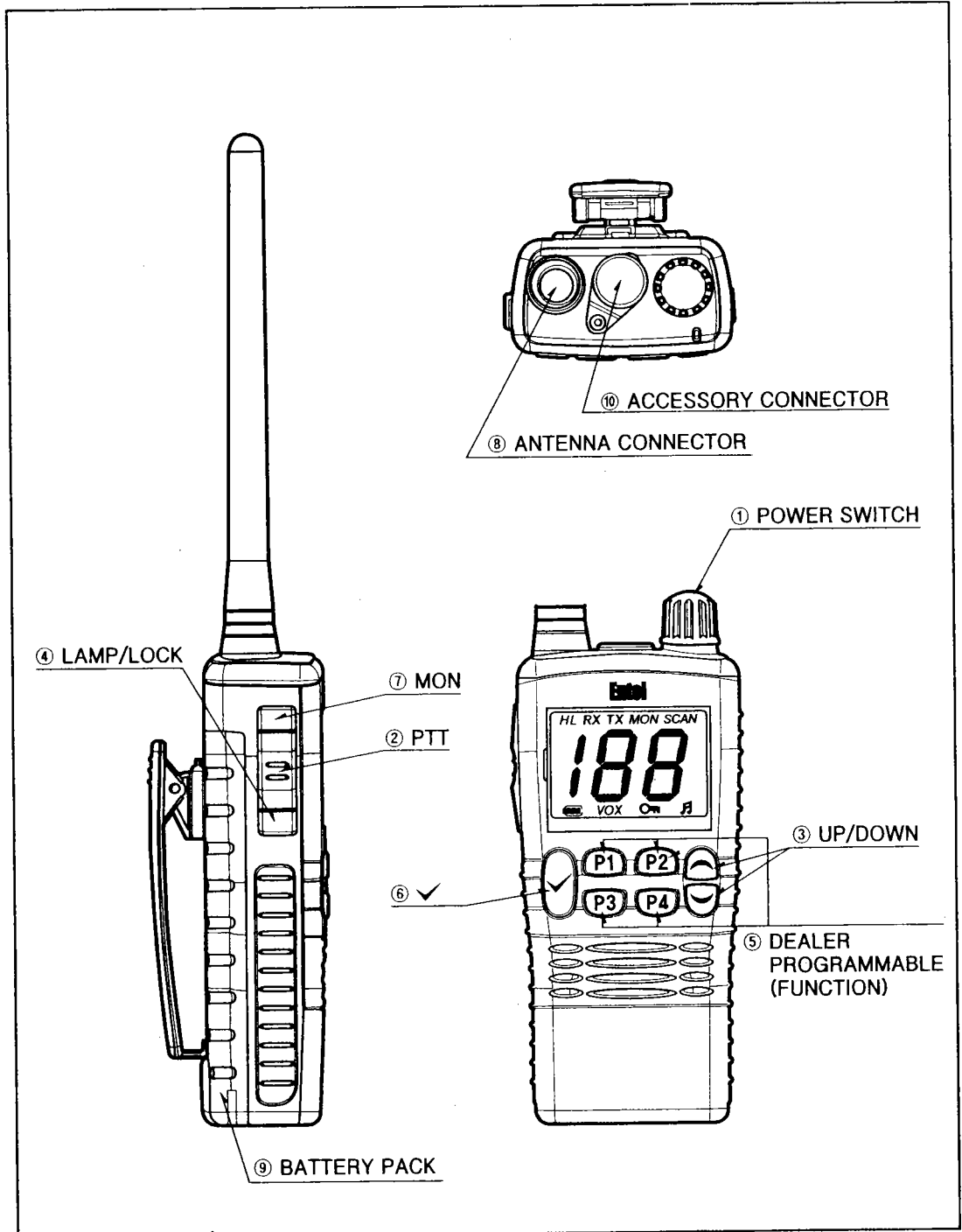


Figure 3. Controls and Connectors

1.5 LCD INDICATORS

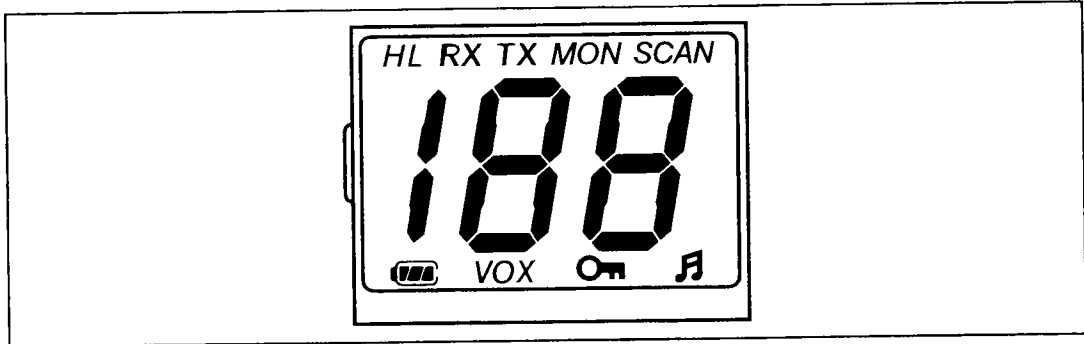


Figure 4. LCD indications

CHANNEL DISPLAY

The operating channel.



Appears when bleep sound is turned on.

H/L

H indicates high power L indicates low power.

SCAN

Appears when scan is activated.

TX

Indicates transmission in progress.

RX

Indicates reception is in progress.

VOX

Voice operated mode enabled.



The keypad is locked.

BATTERY LIFE INDICATOR

The lithium-Ion battery of your transceiver is continually monitored for your convenience and safety.

MON

Monitor button, to open the squelch.

1.6 RECEPTION

1. Turn the transceiver on by rotating the volume control in a clockwise direction. A power on tone is generated after 1 second to indicate the transceiver has passed its self-diagnostic test. Select the desired audio level by further rotating the control clockwise. After power on, the transceiver will always default to the last channel selected.
2. Select the desired channel using the [UP/DOWN] buttons.
3. When receiving a signal the LED indicator illuminates green, and "RX" is displayed on the LCD.

1.7 TRANSMISSION

1. Perform steps 1 through 3 of RECEPTION.
2. Before transmitting, monitor the channel and make sure it is clear.
3. When receiving a signal, wait until the signal stops before transmitting. The transceiver cannot transmit and receive simultaneously.
4. Press the [PTT] (push-to-talk) switch to begin your transmission. To confirm transmission in progress the LED illuminates RED, and TX is displayed on the LCD.
5. Holding the transceiver 1 inch from your mouth speak slowly and clearly into the microphone.
6. When the transmission is finished, release the [PTT] switch.



1.8 Additional features

The HT700 Series incorporates some additional features that can be of positive benefit to your organisation. These features can be set-up and accessed in a number of different ways using any one of the programmable buttons. Please contact your dealer to discuss your exact requirements.

1.9 VOX Voice operated transmit

Any one of the programmable buttons can be assigned to access the VOX feature.

In VOX mode the transceiver will react to your voice and transmit automatically without you having to press the PTT button.

There is always a slight delay for the electronic switching, and consideration will need to be given.

To get optimum performance from the VOX feature you should use a noise cancelling headset or earpiece microphone (see accessory options marked VOX)

2.0 BATTERY CHARGING

1. Connect the CWC640 AC adaptor to the CCA640 charger pod. The LED status light will illuminate green indicating ready for charge.

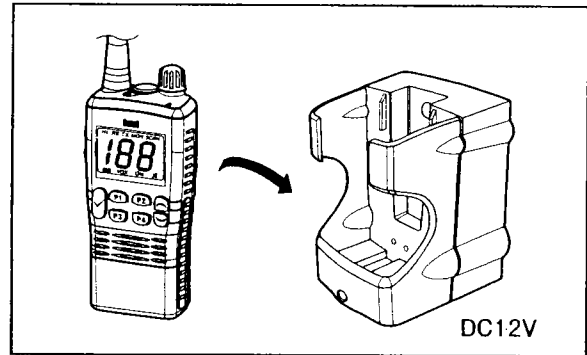


Figure 5. CCA640 Charger pod

2. Turn the transceiver off.
3. Insert the battery pack into the CCA640 pod, either with or without the transceiver attached. The LED status light changes from green to RED and trickle charge begins.
4. A fully discharged battery pack will take approximately 6 hours to charge, depending on the remaining power condition. When charge is complete, the LED status light turns green.

NOTE: The CWC640 AC adaptor can be replaced by the CMC640 12v charger cable. Charge time remains at 6 hours.

2.1 OPTIONAL RAPID CHARGER—model CSA640E

1. Connect the CSA640E to a mains supply(110 to 230V). When switching on the LED flashes orange briefly to confirm self-diagnostic test complete.

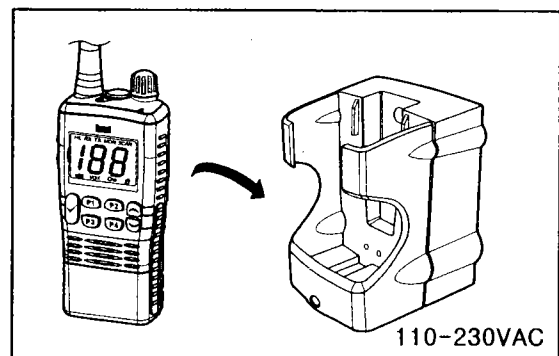


Figure 5-1. OPTIONAL CSA640E Rapid charger

2. Turn the transceiver off.
3. Insert the battery pack into the CSA640E charger, either with or without the transceiver attached. The LED will illuminate red to indicate rapid charge in progress.
4. Charge time for a fully discharged battery pack will take up to 120 minutes. On completion the LED turns green.

2.2 BATTERY INDICATOR

For your safety and convenience your transceiver continually monitors the battery pack and gives an indication on the LCD:

- 3 Segments : 14hours
- 2 Segments : 1hour
- 1 Segment : 20mins

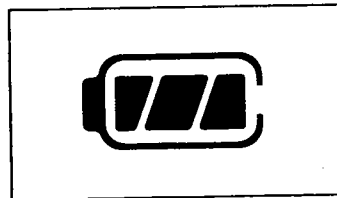


Figure 6. Battery Indicator

2.3 BATTERY SAFETY

The battery pack of your transceiver contains lithium-Ion cells. This type of battery stores a charge powerful enough to be dangerous if misused or abused, especially when removed from the transceiver. Please observe the following precautions:

DO NOT SHORT BATTERY PACK TERMINALS

Shorting the terminals that power the transceiver can cause sparks, severe over heating, burns, and battery cell damage.

If the short is of sufficient duration, it is possible to melt the battery components. Do not place a loose battery pack on or near a metal surface or objects such as paper clips, keys, tools etc.

When the battery pack is installed on the transceiver, the terminals that transfer current to the transceiver are not exposed.

The terminals that are exposed on the battery pack when it is mounted on the transceiver are charging terminals only and do not constitute a hazard.

DO NOT INCINERATE

Do not dispose of your CNB640 battery in a fire or incinerator. The heat of fire may cause battery cells to explode and/or release dangerous gases.

DISPOSE OF BATTERY PACKS PROPERLY

Lithium-Ion battery packs must be recycled or disposed of properly. For requirements in your area, check with the dealer from whom you purchased your transceiver.

2.4 TROUBLE SHOOTING

TROUBLESHOOTING CHART		
SYMPTOM	PROBABLE CAUSE	REMEDY
Transceiver not switching on	Battery needs charging Battery is exhausted	Charge the battery pack Replace the battery pack
The scan key does not start the scan	No channels memorised (MEM)	Enter the desired channels into scan memory
Cannot change any function	Key lock is switched on	Turn key lock off
LED on CCA640 & CWC640 does not illuminate when charging	Defective battery, CCA640, or CWC640 Dirty terminal contact on CCA640	Contact your dealer Clean contacts with dry clean cloth
Receiving calls from other users outside your radio system	congestion on channel	contact your dealer for new frequency or sub tone assignment
Transceiver transmits without pressing PTT button Buttons seem to work intermittently	VOX has been enabled	Press assigned vox button to switch vox off.



2.5 SPECIFICATION(General, receive and transmit)

Performance specifications are nominal, unless otherwise indicated, and are subject to change without notice.

GENERAL

Number of Channels	128ch
Frequency Range	148-170MHz(VHF)/440-470(UHF)MHz
Operational Bandwidth	22MHz(VHF)/30MHz(UHF)
Channel Spacing - Wide Band	25KHz
Narrow Band	12.5KHz
Channel Increments	5KHz/6.25KHz
Size (WxDxH)	59 x 33 x 130mm
Weight (With Battery and Antenna).....	296g
Battery Voltage	7.4V, Nominal
Current Drain	
Squelched (w/out Power Saver)	50mA, Max.
Rated Audio	160mA, Max.
Transmit-1Watt	1,000mA, Max.
Transmit-5Watt	1,800mA, Max.
Antenna impedance	50 ohms
Speaker impedance	8 ohms
Frequency Stability	\pm 2.5ppm Max.
Operation Temperature	-20°C to +55°C

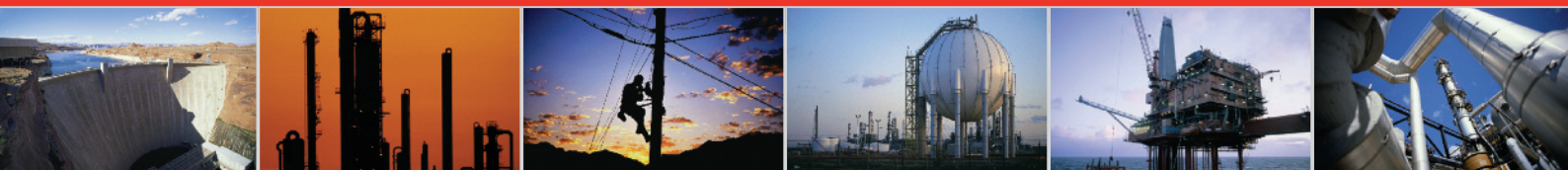
RECEIVER

Sensitivity (12dB SINAD)	>0.35uV Max.
Squelch Sensitivity	>10dB SINAD
Adjacent Channel Selectivity (ETS)–Wide Band	70dB Min.
Narrow Band	–60dB Min
Spurious Rejection (ETS)	–70dB Min.
Intermoduration (ETS)	–65dB Min.
Hum and Noise Ratio–Wide Band	–45dB Min.
Narrow Band	–40dB Min.
Rated Audio Output at 5% T.H.D.(1KHz)	500mW Typical

TRANSMITTER

RF Output Power–Hi Power	5W(VHF)/4W(UHF)
Lo Power	1W(VHF)/2W(UHF)
Spurious/Harmonic Emissions	–36dBm<1GHz
	–30dBm>1GHz
Modulation–Wide Band	±5KHz
Narrow Band	±2.5KHz
FM Hum and Noise	–40dB Typical
Audio Distortion	5% Max.
Adjacent Channel Power–Wide Band	–70dB
Lo Power	–60dB

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