

THALES



LIBERTY™

Multiband Land Mobile Radio



- All Public Safety Bands VHF, UHF, 700, 800
- Project 25 Trunking and Conventional
- Legacy Analog FM
- OFB DES, AES Encryption with OTAR
- Multiband Scan, Priority Scan
- Public Safety Grade Metal Housing, Submersible to 2 Meters
- Full TIA 102 Class A Spec Performance

Communications Interoperability in the Palm of Your Hand



LIBERTY™

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Model PRC-7332



The Liberty™ Multiband Land Mobile Radio (LMR) is a single multiband portable radio covering all of the public safety bands from 136 to 869 MHz with performance equivalent or superior to existing single-band portable LMRs. This single radio provides all modes standardized for public safety use, including analog FM and Project 25 (P25) conventional and trunked; full encryption capabilities, including DES, AES, and OTAR; and all typical features that are available in LMRs today. The Liberty Multiband LMR has been designed to Class A specifications to ensure performance is as good as existing single-band radios. **All of this is in a package so easy to use that most radio users won't even need a manual. Finally, the days of having to carry multiple radios to cover fragmented frequency bands are over.**

TECHNICAL SPECIFICATIONS

The Liberty Multiband Land Mobile Radio conforms to Class A performance specifications.

Frequency Range

- VHF (136-174 MHz)
- UHF (380-520 MHz)
- 700 (763-775 Rx/Tx, 793-805 Tx MHz)
- 800 (806-824 Tx, 851-869 Rx/Tx MHz)

Modes of Operation

- Analog 12.5/25 kHz
- P25 Digital (12.5 kHz), Conventional
- P25 Trunking

Channel Spacing

- 12.5/25 kHz Channels
- 2.5/3.125 kHz Frequency Increments

Frequency Stability

- 1.5 ppm (-30°C to +60°C)

Interoperability

- Legacy Analog FM Radios
- MDC-1200 Signaling
- P25 Digital Radios
- P25 Trunking Systems

Programmable Channels

- Up to 2608 Conventional Channels or Trunked Talkgroups (Any Combination)
- 10 Banks (Groups of Zones)
- 175 Zones (Up to 16 Channels/Talkgroups Each)
- User Programmable from
 - Front Panel Menu
 - PC Programmer
 - Radio-to-Radio Cloning
- Clear/Encrypted Selection on a Channel-by-Channel or Talkgroup Base
- Password Protected to Limit Access

Receiver Characteristics

- Receiver Sensitivity
 - Analog: -119 dBm 12 dB SINAD
 - Digital: -119 dBm 5% BER
 - Channel-by-Channel User Selectable Squelch
- Adjacent Channel Rejection
 - Analog: 60 dB 12.5 kHz Channels
70 dB 25.0 kHz Channels
 - P25 Digital: 60 dB
- Rx Hum and Noise
 - 34 dB @ 12.5 kHz VHF/UHF
 - 31 dB @ 12.5 kHz 700/800
 - 40 dB @ 25.0 kHz VHF/UHF
 - 37 dB @ 25.0 kHz 700/800
- Spurious and Image Rejection
 - 70 dB
- Intermodulation Rejection
 - 70 dB
- Receive Audio Distortion
 - <5% @ Rated Power
 - <5% @ 17 dB Below Rated Power
- Rated Audio Output Power
 - 500 mW

Transmitter Characteristics

- Transmit Output Power
 - VHF/UHF: 0.1, 0.5, 1.0, 2.0, 3.0, 4.0, 5.0 Watts
 - 700: 0.1, 0.5, 1.0, 2.5 Watts
 - 800: 0.1, 0.5, 1.0, 2.0, 3.0 Watts
 - User Selectable by Channel
- Conducted and Radiated Spurious Output
 - -57 dBc @ VHF/UHF
 - -54 dBc @ 700/800 MHz
- Audio Distortion: 2%
- Adjacent Channel Power Ratio
 - 60 dB 12.5 kHz Channels Analog
 - 70 dB 25.0 KHz Channels Analog
 - 67 dB P25 VHF/UHF 800 MHz
 - Per TIA102 CAAB-B for 700 MHz
- Tx Hum and Noise
 - 34 dB @ 12.5 kHz VHF/UHF
 - 31 dB @ 12.5 kHz 700/800 MHz
 - 40 dB @ 25.0 kHz VHF/UHF
 - 37 dB @ 25.0 kHz 700/800 MHz
- Modulation Limiting
 - 5 kHz - 25.0 kHz Channels
 - 2.5 kHz - 12.5 kHz Channels
- FCC Emission Designators
 - 16K0F3E
 - 11K0F3E
 - 8K10F1E
 - 8K10F1D

Controls

- ON/OFF/Volume
- A/B/C Concentric Switch
- 16-Position Channel Select Knob
- Encryption Enable/Disable Switch (Additional Functions Available)
- Emergency Button (Additional Functions Available)
- Large Tactile Push-To-Talk Switch
- 20-Button Keypad
- Software Configurable Side Buttons and Soft Keys

Indicators

- 2.2 inch TFT Color LCD Display
- 3-Color LED Status Indicator

Scanning

- Scan Support Across All Four Bands
- Conventional Channel Scan
- Trunked Scan
- Mixed Mode Scan (call for availability)
- Two Priority Scan Channels
- Talkback Scan

Physical Parameters (with rechargeable battery)

- Length: 7.0 Inches (17.8 cm)
- Width: 2.5 Inches (6.4 cm)
- Depth: 1.9 Inches (4.8 cm)
- Volume: 33.25 Cubic Inches (544.9 cubic cm)
- Weight: 28 oz (794 grams)

Connectors

- 50 Ohm SMA Male (antenna)
- Side Connector for Extended Capabilities and Upgrades (USB)

Encryption

- P25 Digital OFB DES
- P25 Digital AES
- P25 OTAR
- Keyfill from PC or Existing KVL® Device
- Selective Key Zeroization
- Panic Radio Zeroization
- 64 Keys, any combination of OFB DES and AES

Batteries

- Standard Rechargeable Lithium-Ion
 - >10 hours @ 5 Watts and 90:5:5 Duty Cycle
- High Capacity Rechargeable Lithium-Ion
 - >16 hours @ 5 Watts and 90:5:5 Duty Cycle
- AA Clamshell Cassette
 - >8 hours @ 2 Watts and 80:10:10 Duty Cycle

Antenna

Single Multiband Antenna: VHF, UHF (380-520 MHz), 700 MHz, 800 MHz

Environmental Specifications

- Sealed Metal Case
- Temperature
 - Operating -30°C to +60°C
 - Storage -40°C to +85°C
- MIL-STD-810F

Method	Procedure
◦ Low Pressure	500.4 II
◦ High Temperature	501.4 I
◦ Low Temperature	502.4 I
◦ Temperature Shock	503.4 I
◦ Solar Radiation	504.4 I
◦ Rain	506.4 I
◦ Salt Fog	509.4 -
◦ Blowing Dust	510.4 I
◦ Blown Sand	510.4 II
◦ Immersion (2 meters)	512.4 I
◦ Shock	516.5 I, IV
- TIA-603C

Method	
◦ Vibration	3.3.4
◦ Drop Test	3.3.5
◦ Humidity	3.3.3

Accessories (see next page)

- Antennas
- Audio
- Batteries and Chargers
- Cables
- Cases and Holsters
- Surveillance Equipment
- Intrinsic Safe Accessories Available

Regulatory

- FCC and Industry Canada Type Acceptance
 - FCC Designation OKC4102023501
 - IC Designation 473C-4102023501
 - VHF-FCC Part 15,22,74,80,90
 - UHF-FCC Part 15,22,74,90
 - 700 MHz-FCC Part 15,90
 - 800 MHz-FCC Part 15,90
- Intrinsic-safe (US and Canada) for Division 1
 - Class I, Group C-D; Class II, Group E-G, and Class III, T4
 - Non-Incendive (US and Canada) for Division 2
 - Class I, Group A-D, T9
- UL 60950/CSA for AC Powered Accessories
- Project 25 Compliance Assessment Program
 - Trunking Interoperability
 - Performance
- J/F 12 Certified

Warranty

- 3 year standard warranty (extendable to 5 years)

Accessories

BATTERIES AND CHARGERS

The Liberty advanced chargers have a fuel gauge to very quickly assess the charge status of a battery and a data port for interfacing to the battery management software application. For incidents where no power is available, a AA clamshell battery compartment (12 alkaline cells) is available.



1600691-1, Standard Rechargeable Lithium-Ion Battery, 7.2 V DC, 35 Wh.

1600691-2, High Capacity Rechargeable Lithium-Ion Battery, 7.2 V DC, 52 Wh.

1600691-3, Intrinsic Safe Standard Rechargeable Lithium-Ion Battery.

1600691-4, Intrinsic Safe High Capacity Rechargeable Lithium-Ion Battery.



4102201-501, AA Clamshell – Black, AA Battery (12 AA alkaline cells) clamshell cassette.

4102201-502, AA Clamshell – Orange, AA Battery (12 AA alkaline cells) clamshell cassette.

1600701-1, Basic Single Slot Lithium-Ion Rechargeable Battery Charger, 120 V AC cable provided, supports 90-265 V AC power; recommended for desktop use only.



1600723-1, Liberty Mobile Lithium-Ion Rechargeable Battery Charger, designed for 12 V DC power, supports 10-32 V DC applications, built to NFPA retention specifications.



1600683-1 Advanced Six Slot Lithium-Ion Rechargeable Battery Charger, 120 V AC cable provided, supports 90-265 V AC power; recommended for desktop use only. Also includes battery diagnostics and charge status LED's.



MA6752, Advanced Desktop/Vehicle Lithium-Ion Charger Kit, 120 V AC cable provided, also supports 90-265 V AC power for desktop use; or 12 V DC cigarette lighter adapter (CLA) for vehicle charging. Also includes battery state-of-charge and charge status LED's.



4102265-501, Battery Eliminator – Bare Leads.

4102265-502, Battery Eliminator – Banana Plug.

CASES/HOLSTERS

40508 – Spring Loaded Belt Clip, attaches to battery for slim profile.

1600697-1, Leather Carry Case D-ring for Radio with Rechargeable Battery, swivel D-ring included.

1600697-2, Leather Carry Case, Beltloop for Radio with AA clamshell.

1600702-1, Nylon Duty Case for Radio with Rechargeable Battery.

1600704-1, Chestpack Holster, includes space for radio, spare battery, and map pouch.

ANTENNAS

The single Liberty Antenna provides coverage in all bands VHF, UHF, 700 MHz, and 800 MHz without sacrificing performance.

1600678-1, Liberty Multiband Radio Antenna, broadband antenna that covers all bands, VHF (136-174 MHz), UHF (380-520 MHz), 700 MHz, and 800 MHz.

AUDIO

The Liberty Audio/Programming Side Connector Adapter, 1600703-1, is a universal connector for interfacing to the radio. Its mini-AB USB connector, in conjunction with standard off-the-shelf USB cables, is used for programming, radio-to-radio cloning, and future applications that can transfer data via USB. It also includes a 6-pin Hirose connector for attaching existing audio accessories and encryption keyfill.



1600703-1, Audio/Programming Side Connector Adapter, includes 6-pin Hirose connector for audio and keyfill, and USB for programming, cloning, and data transfer.



1600696-1, Speaker Microphone: Balanced audio, Push-To-Talk (PTT) switch, 2.5mm surveillance audio jack, emergency button, 36" coiled cable.

42803-001, Lightweight Headset, contains boom microphone, Push-To-Talk (PTT), and in/near ear headset.

42804-001, Heavy Duty Headset, contains boom microphone, Push-To-Talk (PTT), and over-the-ear headset.

1600696-3, GPS Speaker Microphone: GPS receiver, balanced audio, Push-To-Talk (PTT) switch, 2.5mm surveillance audio jack, emergency button, 36" coiled cable.

Additional Audio Accessories are Available, including Intrinsic Safe.

SURVEILLANCE EQUIPMENT

1600497-1 – Security Harness (3 Wire), Tan in color with wired earpiece. Requires Audio/Programming Side Connector Adapter, PN 1600703-1.

1600497-2 – Security Harness (3 Wire), Black in color with wired earpiece. Requires Audio/Programming Side Connector Adapter, PN 1600703-1.

1600497-3 – Security Harness (2 Wire), Tan in color with wired earpiece. Requires Audio/Programming Side Connector Adapter, PN 1600703-1.

1600497-4 – Security Harness (2 Wire), Black in color with wired earpiece. Requires Audio/Programming Side Connector Adapter, PN 1600703-1.

1600497-6 – Wireless Earpiece for Security Harness, requires Neck Loop Transducer, PN 1600497-8.

1600497-8 – Neck Loop Transducer, for wireless earpiece. Requires Audio/Programming Side Connector, PN 1600703-1.

CABLES

3100965-501, PC Programming Cable Kit, consists of 1600703-1 Audio/Programming Side Connector Adapter and COTS USB Type A male/Mini-AB cable. Used to connect radio to PC for programming.

3100966-501, Radio Cloning Cable Kit, consists of two 1600703-1 Audio/Programming Side Connector Adapters and COTS USB Mini-A to USB Mini-B cable. Used to connect two radios together for channel cloning.

1600705-1, Universal Cable, cable with flying leads to connect radio to user-specific applications.

85482-001, Audio Cable with bare leads.

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