



# CM5000 Transportable



## Maximise System Performance in Mission Critical Applications

Motorola's Transportable TETRA Portable Repeater / DMO (Direct Mode Operation) Gateway – CM5000 is an extended version of the Motorola's CM5000 TETRA Portable Repeater. Both developed in collaboration with Clearstone, a leading provider of TETRA Gateway / Repeater technology. CM5000 is designed to enhance TETRA radio performance and usability in locations where coverage is compromised. Inside buildings, underground locations or where handheld radio coverage is limited, the CM5000 Transportable helps to extend the reach of TETRA communications network, for any ad-hoc deployment.

Leverage on proven Motorola user interface, the CM5000 combines best-in-class operational feature of a TETRA mobile radio, a DMO Gateway and a DMO Repeater. When configured in "Gateway" mode, it acts as a bridge between the trunked radio network and TETRA radios operating outside the network in Direct Mode. When configured in "Repeater" mode, it extends the range of DMO communication by receiving and re-broadcasting communications from other DMO users.

This mobile repeater is power-packed with full gateway and repeater functionalities - all in one compact unit. Compatible to all Motorola TETRA terminals including the MTP850 and MTM800E, it also has similar add-on accessories with other Motorola mobile interface such as Common User Interface Colour Display.

An ideal solution for policing, paramilitary and emergency mission-critical operations, second to none!

## Key Benefits Include

### Multiple operating modes delivering powerful TETRA mobile services

- Programmable 5W TETRA Mobile
- DMO Gateway, extending network coverage
- DMO Repeater, enhancing Direct Mode performance

### Common User Interface

- Common keys and menu structures as other Motorola TETRA terminals
- simplifies user training

### Common accessory portfolio

- Shared accessories with other Motorola mobile platforms

# CM5000 Transportable

## Specifications

### MODEL

CM5000 Transportable	Compact radio for use with the Carry On Case or Top Loader Case option
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### OPERATING MODES

TMO Mobile	Standard TETRA Mobile Radio, supporting TMO Voice & Data services detailed below
DMO Mobile	Standard TETRA Mobile Radio, supporting DMO Voice & Data services detailed below
TMO / DMO Gateway	ETSI TETRA Gateway Operation, extending network coverage for DMO users Supports Group and Emergency Group calls from TMO to DMO / DMO to TMO Automatic detection and management of co-located Gateways Call pre-emption
DMO / DMO Repeater	ETSI TETRA Type 1b DMO Repeater, extending DMO coverage Re-broadcast of Group and Emergency Group calls on configured DMO talkgroups

### PRODUCT SPECIFICATIONS

Carry On Case	20% Duty Cycle	
	1 battery (with 1 extra battery slot available)	
	Charging power supply	110V – 230V ac
	Battery Life	12V batt / 7Ah
	Battery performance	>3hrs
	Dimensions (L x W x D)mm	300 x 160 x 350
	Weight	9.25 Kg
Top Loader Case	20% Duty Cycle	
	4 batteries inside x 12V	
	Charging power supply	Support AC/DC input
	Battery Life	4 x 12V batt / 28Ah
	Battery performance	>12 hrs
	Case	IP67, 3rd party with 1 year warranty for casing excluding wear and tear
	Dimensions (L x W x D)mm	500 x 300 x 500
Weight	23.75 Kg	

### USER INTERFACE & DISPLAY

Display	Diagonal dimension	2.8"
	Type	212 x 140 pixels, 65K colours
	Backlight	variable backlight, user configurable
	Options	Privacy screen saver
Buttons & Keypad	Numeric	Integral backlit numeric keypad of 12 keys
	Navigation	4 way navigation key, menu and soft keys
	Emergency	Emergency button with backlight
Rotary	Dual function	On/Off and volume change with lock option
Indication	LED	Multi-function indicator for In service, In traffic, Channel Busy and Tx Inhibit
	Tones	Configurable notification tones
User Interface Languages	Standard Options	English, German, Dutch, French, Spanish, Swedish
Built-in Speaker	Speaker	5 Watt Speaker
Battery	Indication	LCD digital display

## Specifications

### ELECTRICAL SPECIFICATIONS

Voltage Range	10.8 to 15.6 V DC	
Current consumption (A, typ)	Idle / RX / TX	1.2 / 2.2 / 2.2 (for radio)

### RF SPECIFICATIONS

Frequency Bands (MHz)	380 – 430
Transmit Band (MHz)	380 – 430
Receive Band (MHz)	380 – 430
DMO Band (MHz)	380 – 430
RF Channel Bandwidth (kHz)	25
Transmit / receive Separation (MHz)	10
Switching Bandwidth (TMO) (MHz)	50
Switching Bandwidth (DMO) (MHz)	50
Transmitter RF Power	5W (programmable by CPS to 3W or 5W max)
RF Power Control	4 Steps of 5 dB
RF Power Level Accuracy	+/- db 2
Receiver Class	A
Receiver Static Sensitivity (dBm)	-112 minimum, -114 typical
Receiver Dynamic Sensitivity (dBm)	-103 minimum, -105 typical

### ENVIRONMENTAL SPECIFICATIONS FOR RADIO

Operating Temperature (°C)	-20 to +60
Storage Temperature (°C)	-40 to +80
Humidity	ETS 300 019-1-5 class 5.1 and 5.2 EIA/TIA 603 (95%)
Dust and Water	IP54 (cat.2)
Shock, drop and vibration	IEC 68-2-29 Test Eg IEC 68-2-6 Test Fc TIA/EIA 603-b Forestry MIL-STD 810F

### REGULATORY COMPLIANCE FOR RADIO

Radio (R&TTE Article 3.2)	EN 303 035-1 EN 303 035-2 ETSI EN 300-394-1 ETSI EN 300-392-2
EMC (R&TTE Article 3.1.b)	EN 301 489-1 V1.3.1 EN 301 489-18 V1.3.1
Electrical Safety	EN 60950-1 (2001)
(R&TTE Article 3.1.a)	EN50360:2001 EME
Environmental	Directive 2002/96/EC WEE Directive 2002/95/EC RoHS

## Specifications

### VOICE SERVICES

Talkgroups	2048 (TMO) & 1024 (DMO)	
Contact Book entries	1000 persons. Up to 6 numbers per entry (TETRA ID, mobile, office etc)	
Scan lists	20 lists of 20 talkgroups, fixed or user defined, with configurable priority scanning	
Trunk Mode (TMO)	Group call	Late entry, TMO/DMO mapping, announcement calls, priority calls, Site Wide Call
	Private call	Half and full duplex. Flexible dialling by list scroll, short number dial, direct entry, alphabetical search Call History lists including last number dialled, missed calls list Busy user pre-emption
	Telephony	Full duplex, DTMF overdial, Busy user pre-emption.
	DGNA	up to 2047 groups
	Scanning	attachment signalling, supports SwMI initiated attachment/detachment
Direct Mode (DMO)	Group call	late entry, TMO/DMO mapping,
	Private call	
Emergency	Smart emergency	TMO to DMO / DMO to TMO automatic switching options
	Hot Mic	Configurable timers for automatic open mic
	Location	Location (GPS) sent with emergency
	Target Address	Sent to individual or group address (selected or dedicated)
	Alarm	Emergency status
Other Services	Ambience Listing	
	Transmit Inhibit (TxI)	ETSI Enhanced Mode TxI with On / Off Status Messaging

### DATA COMMUNICATIONS (MOBILE MODE ONLY)

Status	Alias messages	100
Short Data Service (SDS)	Inbox	20 messages
		100 predefined and user defined messages
	Target Address	Sent to individual or group address (selected or dedicated)
	voice interaction	SDS can be sent and received during voice call

### SECURITY FEATURES

Air Interface Encryption	Algorithms	TEA1, TEA2, TEA3
	Security Classes	Class1 (clear), Class2 (SCK), Class3 (DCK, CCK)
Key Provisioning	Secure provisioning tool (key variable loader KVL)	
	Over the Air Rekeying (OTAR) for SCK and Class 3 (CCK)	
Network Access Control	Authentication	Infrastructure initiated and made mutual by terminal
	Temporary Enable / Disable (Stun) for remote management of lost or stolen radios or radios in transit	
User Access Control	PIN / PUK code access	



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