



## ***Motorola MTS 2 TETRA Base Station***

Setting new standards for high performance and reliability  
at optimal cost for mission critical communications





Compact and lightweight, the Motorola MTS 2 is a highly deployable TETRA base station that offers mission and business critical users a full suite of features at exceptional performance with superb cost efficiency.



#### **Compact Design. Optimum Performance.**

With an enhanced receiver sensitivity performance, MTS 2 delivers at least 7 dB better than the ETSI standard. With a high transmit power and good faded sensitivity, the base station enables significant coverage improvement with fewer sites, with no compromise on the grade of service.

The MTS 2 offers Multi-slot Packet Data (MSPD) over an entire TETRA channel. This combines up to 4 individual packet data channels together, using a framing rate of 28.8 kbps. MSPD facilitates faster database searches, file and image transfers amongst others.

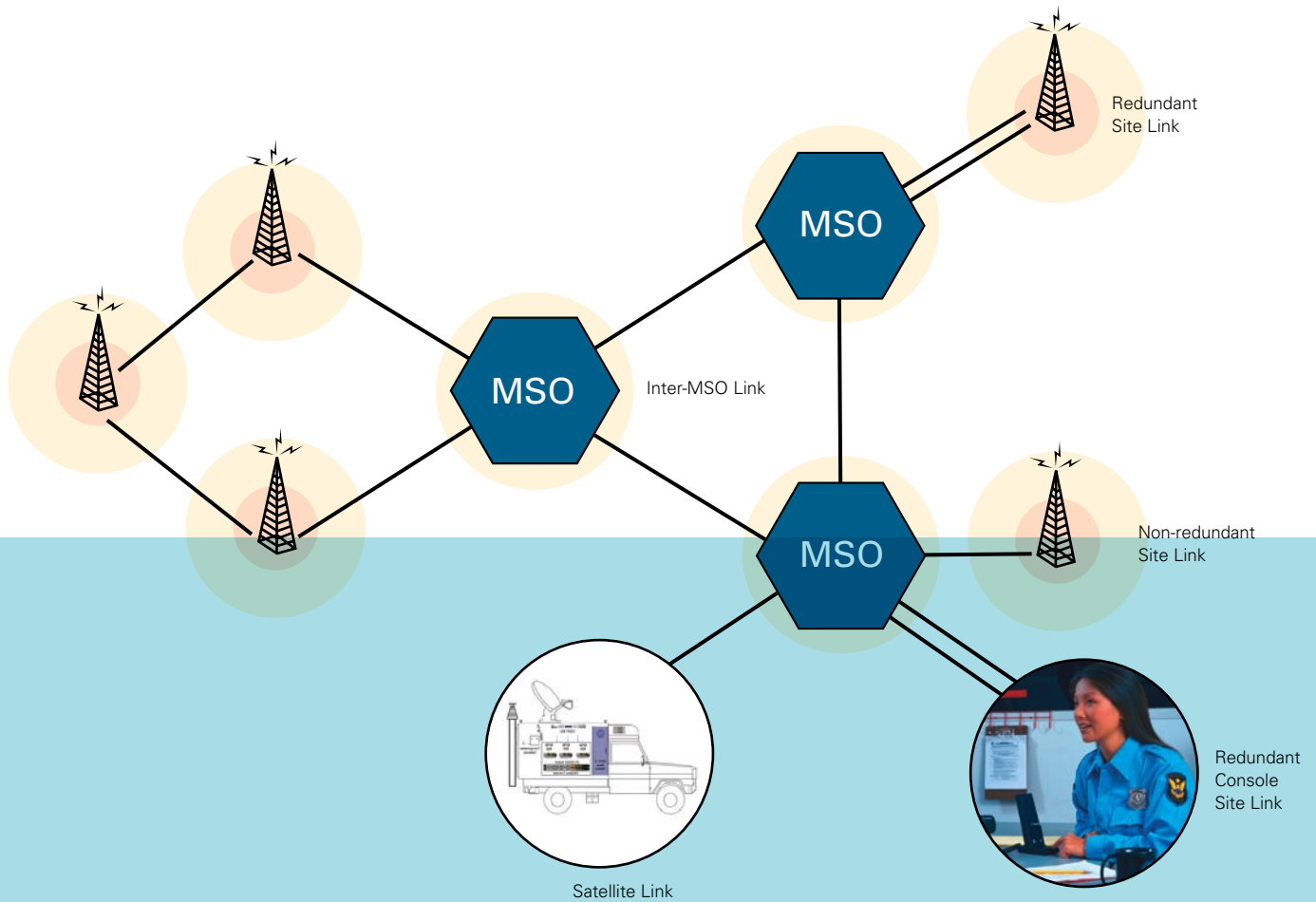
Supporting a wide range of Radio Frequency Distribution Systems (RFDS) configurations, the MTS 2, a two-carrier base station, can be expanded to a four-carrier system without having to change antenna installations. Key parts of MTS 2 can be reused in a MTS 4 cabinet. Moreover, due to its small size, the MTS 2 can be easily fitted into a 19" outdoor enclosure with heat exchanger. The MTS 2 cabinet can fit into the outdoor enclosure as a whole.

#### **High Security. High Reliability.**

For increased reliability, MTS 2 offers base radio (BR) redundancy. For instance when a unit is unavailable, it auto-switches to a backup unit.

The MTS 2 comes equipped with a sophisticated inbuilt interference detection and correction mechanism. The system automatically replaces the interfered Main Control Channel (MCCH) in operation with a backup channel.

The MTS 2 also supports Satellite Transmission, allowing rapid deployment of the base station in crisis situations in rural areas.



### Flexible Design. Easy Maintenance.

Built on IP-based architecture, the MTS 2 is compatible with legacy Motorola TETRA systems, making it easier to seamlessly integrate with the existing TETRA systems. It allows for remote software configuration downloads and removes the need for costly on-site migration and maintenance.

The base radio can be hot-swapped for easy maintenance.

The MTS2 comes with front access and top entry for easy cabling connection. Furthermore, the reduced size and weight of the base station will reduce site rental, installation and maintenance costs. It also provides flexible power supply options allowing the base station to operate in AC or DC mode. It has an integrated charging output to charge batteries during AC operation.

### Next Generation. Investment Protection

Built and designed for future communications needs, the MTS 2 is upgradeable to support future TETRA-2 High Speed Data services.

### Designed for High Redundancy.

The MTS 2 has two E1 interfaces for easy ring configuration to promote high redundancy. The use of the E1 ports provides redundant connection in the event of failure, ensuring always-on connectivity. It allows more stations to be added to a network ring structure. A ring structure can support up to 10 base stations, which allows the network traffic to be re-routed in the event of a link or backhaul failure.

The E1 interface has a "drop & insert" feature that enables flexible and resilient connections to the switching centre. When the connection to the MSO (Main Switching Office) is broken, the base station intelligently enters into local trunking mode, allowing the same talkgroups to continue voice operations locally.

To prevent unauthorised communications, site monitoring and intrusion, the new Motorola base station offers high level of security including dynamic and static Air Interface encryption and End-to-End Encryption (E2EE). In addition, the base station door is equipped with an alarm contact.

Normal operation is possible without GPS.

## Technical Data

	UHF	800 MHz
Frequency Bands	380 - 400 MHz, 410- 430 MHz	851 to 870 (Tx), 806 to 825 (Rx) MHz
Transmit Power at top of base station cabinet	25W 40W (with combiner bypass)	25W 40W (with combiner bypass)
Power	-Input Power 115/230Vac, 50/60Hz and -48Vdc -Equipped with integrated battery chargers	-Input Power 115/230Vac, 50/60Hz and -48Vdc -Equipped with integrated battery chargers
Sensitivity at top of base station cabinet	-120 dBm typical (static at 4% BER) -113.5 dBm typical (faded at 4% BER)	-119.5 dBm typical (static at 4% BER) -113 dBm typical (faded at 4% BER)
Operating Ambient Temperature	-30 to 60 deg Celsius	-30 to 60 deg Celsius
Width x Height x Depth	0.45m x 0.61 m x 0.48 m	0.45m x 0.61 m x 0.48 m
Power Consumption	640 Watt nominal for base station with 2 BR each 25W	700 Watt nominal for base station with 2 BR each 25W
Weight (max, fully equipped with 2 BR)	48 kg (est.)	50 kg (est.)
Diversity Reception	No Diversity Dual Diversity, Duplexed and Non-Duplexed Triple Diversity, Duplexed	No Diversity Dual Diversity, Duplexed and Non-Duplexed Triple Diversity, Duplexed
Combiner Options	Combiner Bypass, Hybrid combiner	Combiner Bypass, Hybrid combiner
Carrier Spacing	25 kHz	25 kHz
Operating Bandwidth	5 MHz	19 MHz
Transmission	<ul style="list-style-type: none"> <li>• X.21 or fractional E1 connection</li> <li>• Two E1 ports with inbuilt multiplexer for either loop protection or redundancy (up to 10 base stations can be connected in loop)</li> <li>• Support for satellite transmission</li> </ul>	<ul style="list-style-type: none"> <li>• X.21 or fractional E1 connection</li> <li>• Two E1 ports with inbuilt multiplexer for either loop protection or redundancy (up to 10 base stations can be connected in loop)</li> <li>• Support for satellite transmission</li> </ul>
Operations and Maintenance Functions	<ul style="list-style-type: none"> <li>• Remote and local configuration and alarm handling</li> <li>• Remote and local Software download</li> <li>• Remote and local test services</li> <li>• 15 external alarm inputs for site monitoring</li> <li>• Two external alarm outputs for site control</li> </ul>	<ul style="list-style-type: none"> <li>• Remote and local configuration and alarm handling</li> <li>• Remote and local Software download</li> <li>• Remote and local test services</li> <li>• 15 external alarm inputs for site monitoring</li> <li>• Two external alarm outputs for site control</li> </ul>

\*Please note that technical specifications are subjected to changes.

### Additional Features:

- Interference Detection and Correction
- Automatic Main Control Channel Changeover
- Resilience through Local Site Trunking with full voice trunking capabilities
- Redundant Base Radio
- Air Interface Encryption and E2EE
- Multi-Slot Packet Data (MSPD) for enhanced data services
- TETRA Enhanced Data Services (TEDS) ready
- Alarm activated locking security
- Hot swappable modules
- Traffic Channel Rotation
- Dynamic channel allocation between voice and packet data
- Optional Global Positioning System (GPS)



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