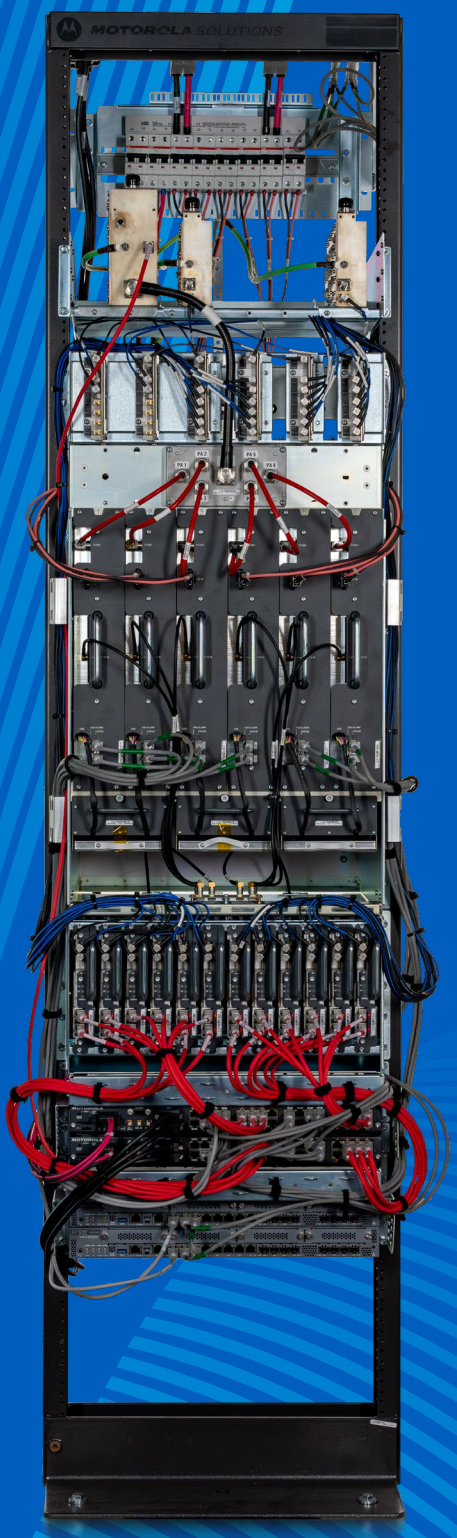
Data Sheet

DBR M12 Multicarrier Site

Dependability meets high capacity

Public safety and critical infrastructure organizations rely on group collaboration for the safety of their personnel as well as the communities they serve. The ability to instantly communicate and connect with others over P25 radio systems gives them the information they need to quickly and safely respond to evolving events. We know that downtime is not an option for the sites and equipment that these users depend on every day. Motorola Solutions' ASTRO® radio sites are designed to perform and continuously deliver reliable communication.



MOTOROLA SOLUTIONS

The ASTRO DBR M12 is a P25 radio site built with the dependability you'd expect in your critical communication system. With its unique use of redundancy, resource pools and software, the M12 can dynamically allocate resources across available hardware to minimize downtime and improve site resiliency. Designed with a modern cybersecurity architecture and easy to deploy security patches, the M12 can help protect your system from evolving threats.

Simplify ownership with a space saving unit that eases deployment. The M12 houses up to 12 carriers in a single rack or cabinet including the transceivers, amplifier, control and RF distribution systems. The small design is made possible in part by an efficient multicarrier amplifier that eliminates the need for bulky cavity combiners. A flexible software architecture helps provide easy frequency planning and zero-downtime updates.

→ Key features

- APCO P25 compliant
- Modern hardware and software architectures
- Scalable to 12 carriers per rack/cabinet
- Multicarrier amplifier bank
- Superior processing power
- Integrated GNSS time and frequency reference
- N+1 redundant transceiver capable
- Integrated DC power (AC optional)

→ Available configurations

- Trunking repeater site
- Trunking simulcast subsite
- Single or mixed band rack/cabinet

→ Capacities

- 12 carriers per rack/cabinet (12 FDMA / 24 TDMA)
- 3 units per site, 30 carriers total
- 6 carriers with 2 Tx antennas
- 12 carriers with 1 Tx antenna
- 30 carriers per Rx antenna

Dependability

Reduce downtime and outages

The DBR M12 has a fault tolerant design to improve resilience and reduce downtime due to failure. Advanced software dynamically allocates resources to minimize the impact of failure and maximize performance and capacity.

Simplified ownership

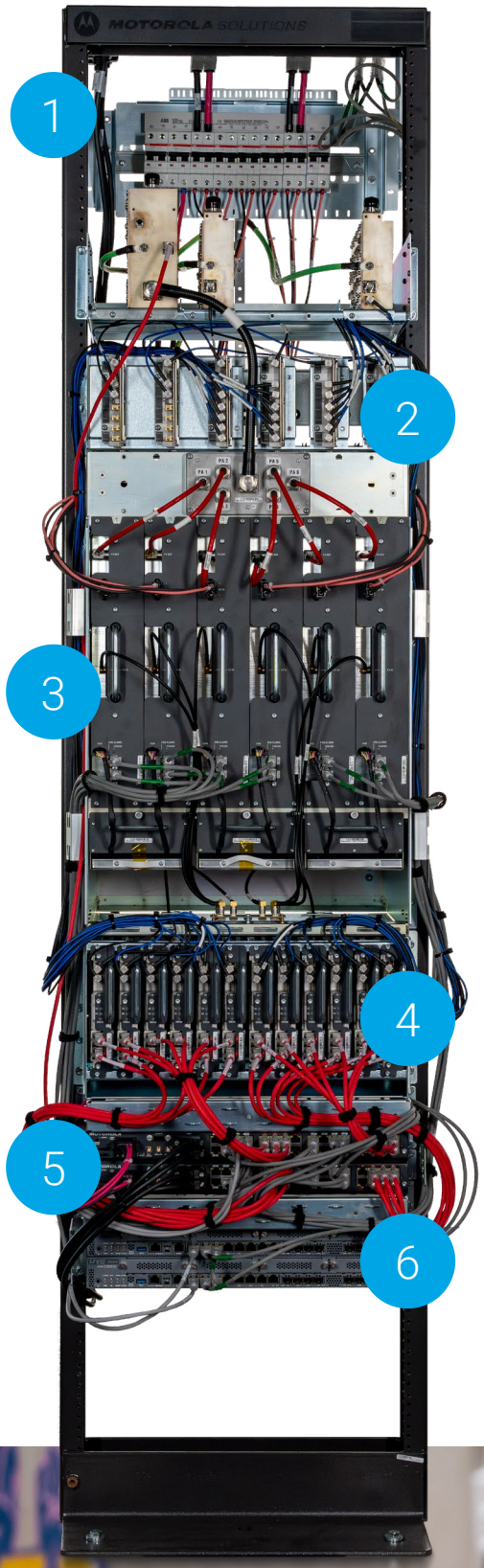
Easy deployment and operation

Simplify ownership even before you receive your equipment with easy frequency planning thanks to the DBR M12's narrow Tx to Tx frequency spacing. Save space during deployment with this compact, high capacity unit. And simplify on-going operations with remote frequency changes and 1-click, zero-downtime software updates.

Modern protection

Reduce cybersecurity risk

The threat of cyber attack is a constant concern, and even more so for public safety systems that are increasingly being targeted. This is why the DBR M12 is designed in accordance with the NIST Cybersecurity Framework.



DBR M12 Rack Layout

1. Interface panels
   DC power, Tx and Rx antennas

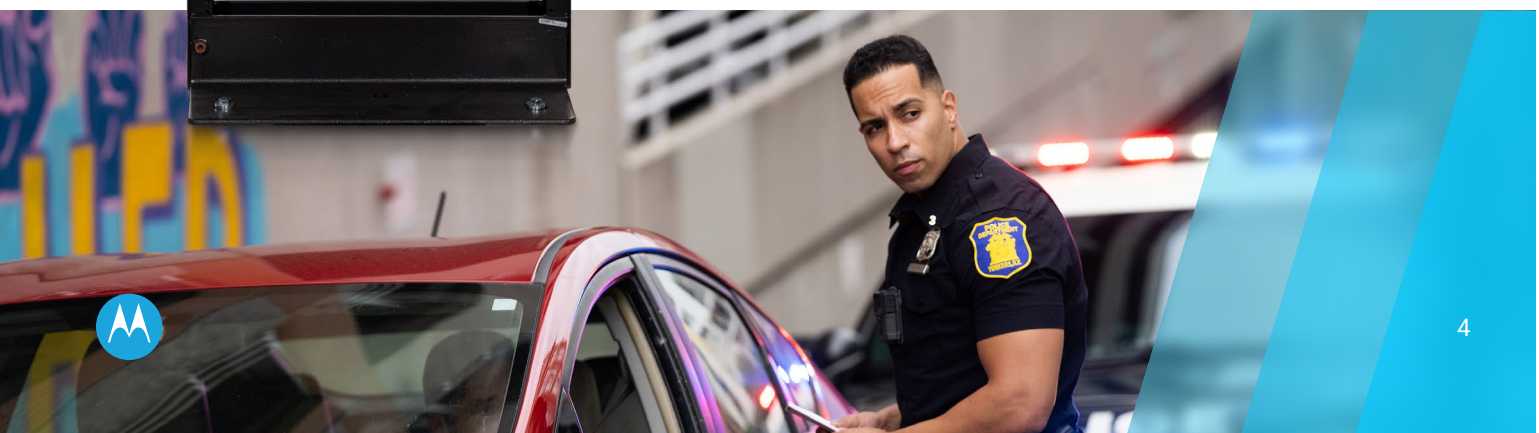
2. RF distribution system
   Combiners, multicouplers and preselectors

3. Multicarrier amplifier bank (pooled redundancy)
   Pooled power amplifiers supporting all channels

4. Transceivers (N+1 redundancy)
   Up to 12 transceivers per rack/cabinet

5. Site processors (load-sharing redundancy)
   Site control and base radio software

6. Site routers (redundancy built-in)
   With built-in firewalls



GENERAL SPECIFICATIONS (PER RACK OR CABINET)	
Number of Carriers	1 to 12
Dimensions (W x D x H)	Open rack: 20.5 x 23.5 x 84.25 in (520 x 600 x 2140 mm) Cabinet: 23.5 x 23.5 x 82.25 in (600 x 600 x 2090mm)
Weight (12 carriers)	Open rack: 498 lb (226 kg) Cabinet: 660 lb (300 kg)
Temperature Range	Operating: -22 to 140 °F (-30 to 60 °C) Non-operating: -40 to 185 °F (-40 to 85 °C)
Relative Humidity	15% to 90%, non-condensing
Power Requirements	AC: 90-264 VAC, 47-63 Hz, DC: 43.2-60 VDC
Power Consumption (12 carriers)	4700 W
Antenna Connectors	Tx: 4.3-10 Female Rx: 4.3-10 Female
Channel Spacing	12.5 kHz / 25 kHz
Modulation	Tx: C4FM, LSM, H-DQPSK RX: C4FM, H-CPM
Frequency Stability	Repeater site: 100 ppb/2yrs or GPS synchronized Simulcast (multisite): GPS synchronized

TRANSMIT SPECIFICATIONS (AT TOP OF RACK)	
Transmit Frequency Range	851-870 MHz
Transmit Carrier Spacing	50 kHz
Power Output (available at top of rack)	2 - 40 Watts
Modulation Fidelity	5%
Intermodulation Attenuation	80 dB
Spurious / Harmonic Emission Attenuation	75 / 90 dB
Emission Designators	8K70D1E, 8K70D1D, 8K70D1W, 8K10F1E, 8K10F1D, 8K10F1W, 9K80D7E, 9K80D7D, 9K80D7W

Note: All specifications are subject to change without notice.

RECEIVE SPECIFICATIONS (AT TOP OF RACK)	
RECEIVER	
Receive Frequency Range	806-825 MHz
Digital Sensitivity (5% BER)	C4FM: -123.5 dBm H-CPM: -121.5 dBm
Receive Diversity	Available
Intermodulation Rejection	80 dB
Digital Adjacent Channel Rejection	60 dB
Spurious and Image Response Rejections	100 dB
Intermediate Frequency	First: 73.35 MHz Second: 2.16 MHz
RECEIVE RF DISTRIBUTION SYSTEM	
Noise Figure (typical/limit)	3 dB / 5 dB
Gain (typical/limit)	10 dB / -21 to 31 dB adjustable
3rd order Output Intercept (typical)	18 dBm
Amplifier Intercept	39 dBm

REGULATORY DATA	
FREQUENCY RANGE	**FCC TYPE ACCEPTANCE**
851-870 MHz	ABZ89FT5901

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