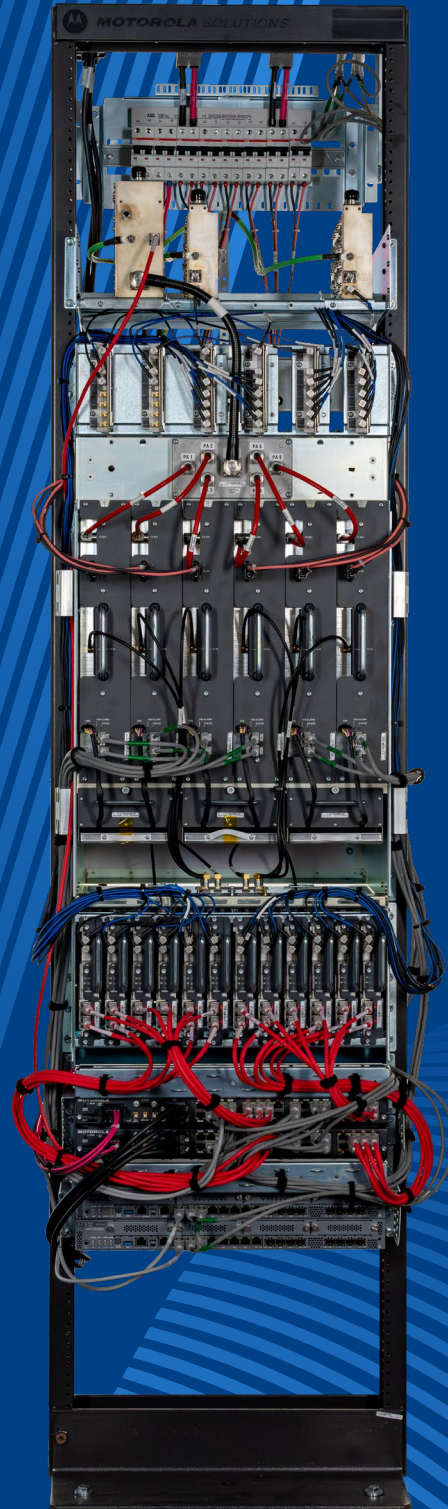


ASTRO D-Series Multicarrier Radio Site

Improving uptime.
Maximizing space.
Easing ownership.

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 continuously deliver reliable communication.



The D-Series Multicarrier Radio Site 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 Multicarrier Site can dynamically allocate resources across available hardware to improve site resiliency and minimize downtime. Designed with a modern cybersecurity architecture and easy to deploy security patches, the Multicarrier Site can help protect your system from evolving threats.

We know that space is a premium in your facilities. That is why we built the M12 to support up to 12 carriers, or 24 TDMA P25 channels, in a single chassis. This includes the RF distribution, GPS timing references, power system and the backhaul equipment. To make the site easier to deploy and own, we've made it easier to find compatible frequencies while making it easier to keep the software up to date.

→ Key features

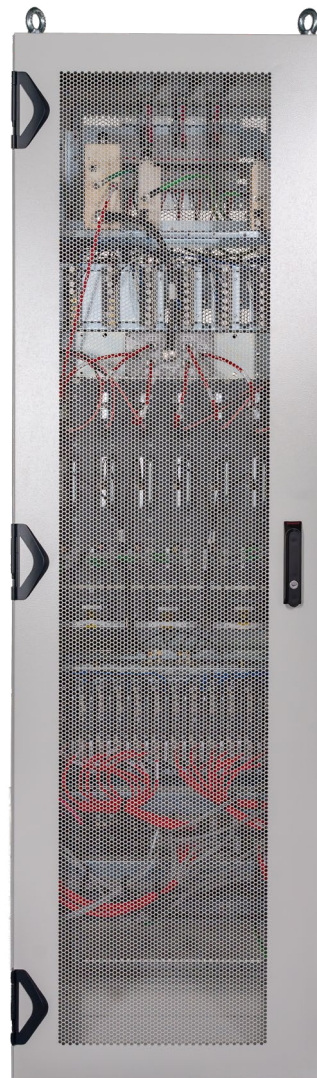
- APCO P25 compliant
- Modern hardware and software architectures
- Scalable to 12 carriers per rack/cabinet
- Multicarrier amplifier bank
- Superior processing power
- Integrated GNSS time and frequency reference
- N+1 redundant transceiver capable
- Integrated DC power (AC optional)

→ 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
- Up to 30 carriers per Rx antenna
- Up to 12 carriers per Tx antenna





Improve uptime

Reduce downtime and outages

The D-Series Multicarrier Radio Site has a fault tolerant design with extensive redundancy to improve resilience and reduce downtime. The combination of redundant hardware and software, resource pools and dynamic resource allocation can minimize or eliminate the impact due to equipment failure.



Minimize space

Reduce footprint and site-related costs

The high channel capacity of the Multicarrier Site can reduce the space required in your facilities, saving site-development costs. Each chassis can support up to 12 carriers of mixed 700/800 MHz frequency bands. This can reduce the footprint needed for site equipment as well as reduce the requirements for other site systems such as power, cooling and more.



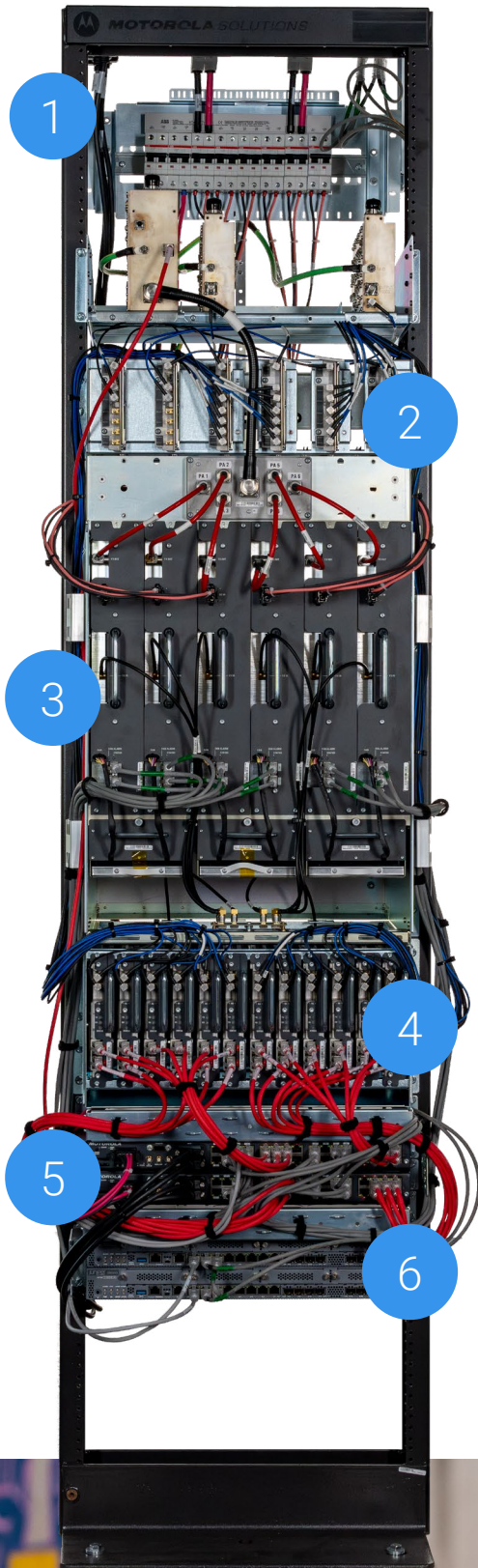
Ease ownership

Simplify deployment and operation

If your site is in a frequency congested area, the Multicarrier Site gives you access to almost 3X more frequency choices due to its tighter spacing capabilities, compared to traditional site equipment. With whole site software updates, the Multicarrier Site can make it easier to keep your equipment updated and secure.



D-Series Multicarrier Site 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 (redundant units)

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)	700 MHz: 5,000 Watts maximum 800 MHz: 4,700 Watts maximum
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	700 MHz: 768-776 MHz 800 MHz: 851-870 MHz
Transmit Carrier Spacing	50 kHz
Power Output ¹	2 - 50 Watts 51 - 70 Watts (high-power configuration)
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

RECEIVE SPECIFICATIONS (AT TOP OF RACK)

RECEIVER

Receive Frequency Range	700 MHz: 798-806 MHz 800 MHz: 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

¹ Available at the top of rack. Max power may be reduced based on carrier count.
All specifications are subject to change without notice.





REGULATORY DATA

BAND	US FCC ID	CANADA ISED ID
800 MHZ	ABZ89FT5901	109AB-T5901
	ABZ89FT5902	109AB-T5902
700 MHZ	ABZ89FT5911	109AB-T5911
	ABZ89FT5912	109AB-T5912

To learn more, visit:
motorolasolutions.com/astro



Motorola Solutions, Inc. 500 West Monroe Street, Chicago, IL 60661 U.S.A. motorolasolutions.com

MOTOROLA, MOTO, MOTOROLA SOLUTIONS and the Stylized M Logo are trademarks or registered trademarks of Motorola Trademark Holdings, LLC and are used under license. All other trademarks are the property of their respective owners. ©2025 Motorola Solutions, Inc. All rights reserved. 03-2025 [BG20]