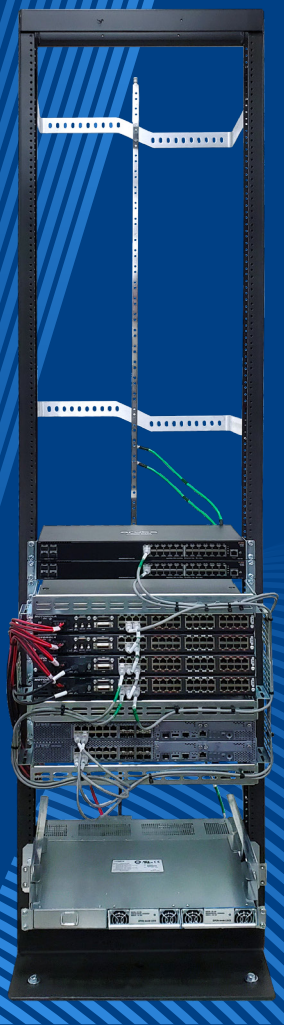
Data Sheet

Virtualized Prime Site

Software-based, on-premise architecture for P25 simulcast

The high demand for narrow-band radio channels occurring in many areas can make it difficult to find the frequencies you need to support all the users on your radio system. ASTRO® simulcast operation can increase radio coverage without additional frequencies.



ASTRO radio systems equipped with the Virtualized Prime Site can reduce the number of frequencies needed on a multi-site system through the use of simulcast technology. Simulcast enables the same frequencies to be used at adjacent sites with minimal interference. It does this by synchronizing the outbound signals from each radio site so they arrive at the same time at users' mobile or portable radios. By comparing the inbound audio stream from multiple radio sites, the prime site will create a new audio stream constructed of the best frames from each incoming stream. This ensures only the highest quality audio is broadcast back out to the radio users in the field.

The ASTRO Virtualized Prime Site utilizes software virtualization running on local hardware to improve the uptime of simulcast systems, reduce equipment footprint and ease the ownership.

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Improving uptime

Redundancy comes standard with the Virtualized Prime Site. All hardware and software is redundant so that no single failure will reduce capability or capacity. The prime site distributes the load across available hardware to minimize a momentary disruption during switch to a backup. Geographic redundancy is available to protect against catastrophic loss of an entire prime site. And during software updates, the prime site can maintain all voice and data services during the procedure with no loss of capacity.

Reducing footprint

At the heart of the Virtualized Prime Site are the DSC 8000 controllers. The DSCs are high performance units that utilize software virtualization to run multiple applications on each DSC. This means that even in the largest configuration, the equipment takes up no more space than ½ a rack.

Easing ownership

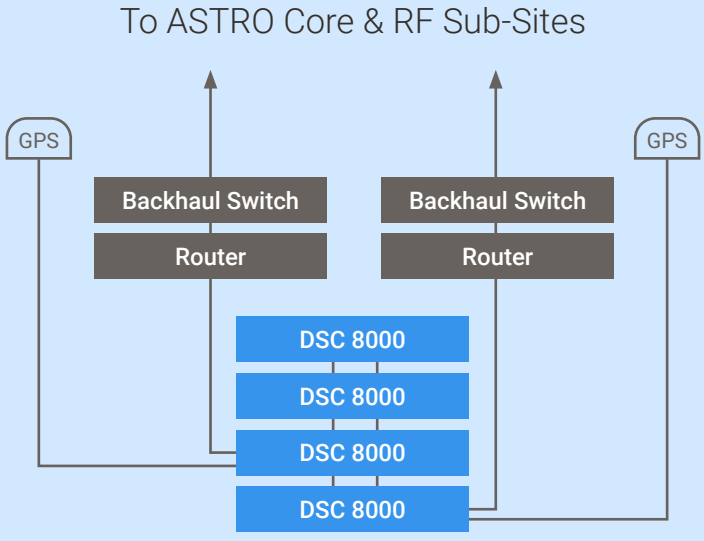
The Virtualized Prime Site is easy to maintain. A browser interface and secure login provides access to the configuration and diagnostics for all channels. Software updates are streamlined and can be performed without any reduction in service. And with software channel expansions, you can quickly add new channels without waiting for hardware to ship and install.

DSC 8000 Controllers

The DSC 8000 controllers perform site control and channel comparator functions. DSC 8000 controllers are deployed in either 1 pair or 2 pairs, depending on capacity requirements. Channel related processes are level loaded across all available DSC 8000s. In the event of a failure, all processes on the failed unit will immediately transfer to remaining available units.

Networking and timing equipment

The Virtualized Prime Site comes with the necessary networking equipment to connect to the radio sites and other systems. Timing options include GPS with rubidium extended holdover or an external reference. For redundancy purposes, this equipment is deployed in pairs.



GENERAL SPECIFICATIONS		
	2 DSC 8000 CONFIGURATION	4 DSC 8000 CONFIGURATION
System types supported	Trunking	
Subsites supported	1-32 sites	
Carriers supported	1-18 carriers	1-30 carriers
Voice Channel types	FDMA (P25 Phase 1) TDMA (P25 Phase 2)	
Data Channel types	Integrated Data Enhanced Data	

TECHNICAL SPECIFICATIONS		
	2 DSC 8000 CONFIGURATION	4 DSC 8000 CONFIGURATION
Dimensions (H x W x D)	84.2 x 20.5 x 24.4 in (2138 x 521 x 619 mm)	
Weight	227 lbs (103 kg) est.	260 lbs (118 kg) est.
Rack power supply input (qty=2)[1]	AC: 90-264 VAC / 47-63 Hz DC: 41.5-60 VDC	
Backhaul switch inputs (qty=2)[1]	AC: 100-127 / 200-240 V, 50/60 Hz	
Typical power consumption[2] (configuration includes, DSC 8000s, 2 routers and 2 switches)	AC: 430 W DC: 250 W	AC: 500 W DC: 300 W
Operating temperature range	32° to 104° F (0° to 40° C)	
Non-operating temperature range	-4° to 158° F (-20° to 70° C)	
Relative humidity	15% to 90%, non-condensing	
Time stability	Redundant GPS antennas with Rubidium Extended Holdover or external reference	

1. The backhaul switches are not powered by the rack power supply and require their own AC inputs.

2. DC power consumption values do not include the backhaul switches.

Learn more about ASTRO radio systems and the Virtualized Prime Site at:
www.motorolasolutions.com/astro

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