



Amplifiers

DATA SHEET

AWS Twin TMA with 700 Bypass

DTMABP0721VG12A



- Small, lightweight, twin unit
 - Dual Band Dual Duplexed (AWS & AWS-3 / LTE 700 w/Bypass)
 - AISG 2.0 and AISG 1.1¹ compatible
 - AISG TMA detects BTS port that DC voltage and AISG sampling is applied to, and automatically switches to utilize that port
 - AISG TMA operates at constant power
 - AISG TMA may be powered by a standard PDU
 - High Linearity
 - Lightning protected
 - Fail-safe bypass mode
 - High reliability
- ¹ Fully functional within the inherent limitations of AISG 1.1

Overview

CCI's Twin Dual Band (LTE 700 / AWS) TMA contains two dual band TMA's in a single housing. The AWS TMA is full band and fully duplexed, while the UHF 700 RF is bypassed and combined (Diplexed) with the AWS RF signal. High linearity improves the uplink sensitivity and the receive performance of base stations. The TMA is fully compliant with the latest AISG 2.0 specification. The TMA supports all 2G, 3G and 4G systems. It provides a convenient package for sites upgraded to dual or quad antenna configurations. The twin TMA package reduces tower loading, leasing, and installation costs. Unit count on the tower is cut in half. An excellent match for two branch receive diversity applications using dual polarization antennas. The input and output connectors are located inline for ease of installation in space constrained areas such as uni-pole structures and stealth antennas.

The TMA system consists of a twin outdoor dual band tower mount unit which combine separate AWS and LTE700 antennas onto a single BTS port. The AWS path of the tower mount unit is dual duplexed to separate the low-power uplink signals from the high-power downlink signals at the antenna port, amplifies the low-level uplink signals using an ultra-low noise amplifier (LNA), and recombines the two paths at the BTS port. The LTE700 path is ultra low loss and passive. Both paths are diplexed at the BTS port. The tower mount units consist of eight band-pass filters, two redundant low-noise amplifiers, bypass failure circuitry, and bias tee's which are all housed in an IP65 moisture proof enclosure, with IP68 Immersion proof connectors suited to long-life masthead mounting. The unit provides protection against lightning strikes via a multi-stage surge protection circuit. DC power and control is provided via the feeder cable from the BTS or a Power Distribution Unit (PDU). Optional AISG 2.0 DC power and control is provided via the feeder cable from the BTS using the AISG 2.0 and 3GPP standard. The optional AISG TMA detects which BTS port has DC Voltage/AISG Sampling applied and automatically switches to utilize that port. Additionally the AISG TMA operates at constant power when powered by an AISG 2.0 Compatible Site Control Unit, but may be powered by a "Standard Power distribution Unit. A separate AISG connector is also provided to allow direct AISG connection or "Daisy Chaining" to multiple AISG products at the top of the tower.

An optional indoor site control unit (SCU) is available to power up to 32 AISG modules per sector and to provide all the monitoring and alarm functions for the system. The SCU is housed in a single (1U) 1.75" x 19" rack and contains dual redundant power supplies capable of being "hot swapped" that provide a regulated DC supply voltage on the RF coax for the tower mount amplifiers.



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SPECIFICATIONS

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Electrical

RF Parameters	Ports	Frequency(MHz)	Specification
Return Loss	AWS ANT	1710 - 1780	18 dB min. (18 dB bypass mode)
		2110 - 2180	18 dB min.
Gain	BTS	1710 - 1780	18 dB min. (18 dB bypass mode)
		2110 - 2180	18 dB min.
		698 - 746	18 dB min.
		700 ANT	698 - 746
Insertion Loss	AWS ANT - BTS	1710 - 1780	6 to 12 dB adjustable in 0.25 dB steps via AISG (± 0.2 dB)
	AWS ANT - BTS (RX Bypass mode)	1710 - 1780	1.1 dB typ. @ 25°C, 1.3 dB @ 65°C (± 0.05 dB)
Rejection	AWS ANT - BTS (TX)	2110 - 2180	0.25 dB typ, 0.4 dBmax. (± 0.05 dB)
	700 ANT - BTS	698 - 746	0.4 dBmax.
	700 ANT - BTS	1710 - 2180	80 dB
Noise Figure	AWS ANT - BTS	698 - 746	80 dB
	AWS ANT - BTS	1710 - 1780	1.3 dB typ. @ 25°C, 1.5 dB @ 65°C
Input Third Order Intercept Point	AWS ANT - BTS	1710 - 1780	+12 dBm min. at max. gain

General Characteristics

Impedance	50 ohms
Continuous Average Power	500 W max.
Peak Envelope Power	5 kW max.
Intermodulation Performance(all ports)	<-110 dBm (-153 dBc) typical (2 x +43 dBm tones) all bands
Operating Voltage	+10V to +30V DC provided via coax or AISG
Power Consumption	< 1.5 W
AISG Compatability	AISG 2.0, AISG 1.1 (Functional within the limitations of AISG 1.1)
Interface to AISG Equipment	RS 485

Environmental

Operating Temperature	-40 °C to +65 °C
Enclosure	IP65 (Unit Body), IP68 (Connector)
MTBF	>500,000 hours
Lightning Protection	8/20us, ± 2 KA max, 10 strikes each per IEC61000-4-5

Mechanical

Connectors	6 x 7-16 DIN female(long neck), 1 x AISG
Dimensions (body only)(HxWxD)	10.63 x 11.02 x 3.27 in. (270 x 280 x 83 mm)
Weight	20.0 lbs max (9.07 kg)-without bracket
Mounting	Pole/Wall mounting bracket

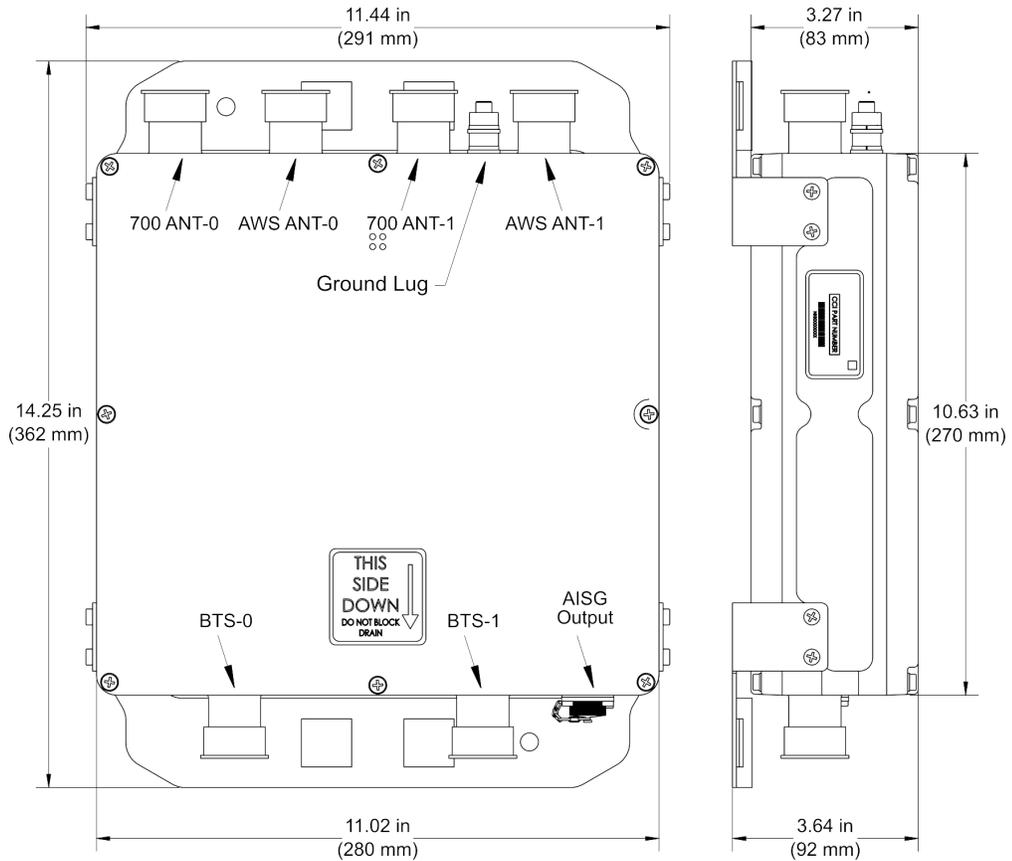


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DTMABP0721VG12A Outline Drawing



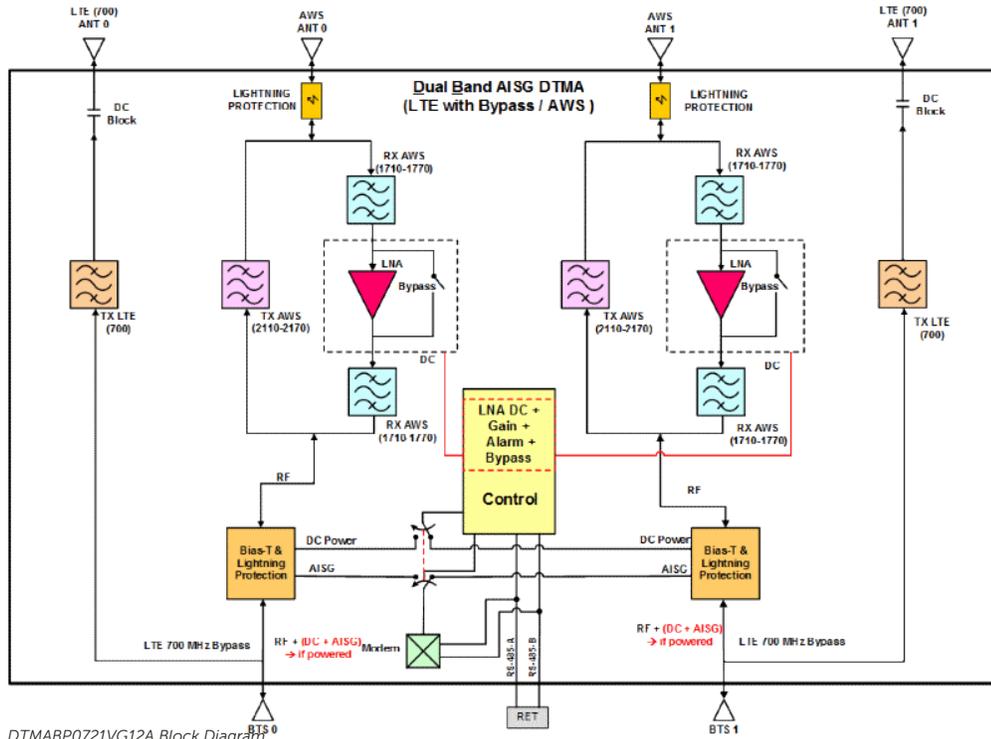
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Block Diagram





Amplifiers

ORDERING

AWS Twin TMA with 700 Bypass

[DTMABP0721VG12A](#)

Parts & Accessories

[DTMABP0721VG12A](#) AWS Full band AISG Twin TMA with 700 Bypass



Amplifiers

STANDARDS &
CERTIFICATIONS

AWS Twin TMA with 700 Bypass

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Certifications

Antenna Interface Standards Group (AISG), Federal Communication Commission (FCC) Part 15 Class B, CE, CSA US

