



# Amplifiers

DATA SHEET

## AWS Twin Tower Mounted Amplifier

DTMA1721VG14A



- Small, lightweight, twin unit
- AISG 2.0 compliant
- Dual duplexed
- High Linearity
- Lightning protected
- High reliability
- Full AWS band

### Overview

CCI's Twin TMA contains two TMA's in a single housing. Each TMA is full band and fully duplexed. 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 and supports CDMA, EDGE/GSM and UMTS BTS equipment. 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.

### Technical Description:

The TMA system consists of a twin outdoor tower mount unit with two antenna inputs. The tower mount unit is dual duplexed to separate the low-power uplink signal from the high-power downlink signal at the antenna port, amplifies the low-level uplink signal using an ultra-low noise amplifier (LNA), and recombines the two paths at the BTS port. The tower mount units consist of six band-pass filters, four 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 using the AISG 2.0 and 3GPP standard. A separate AISG connector is also provided to allow direct AISG connection or "Daisy Chaining" 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.



# Amplifiers

## SPECIFICATIONS

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#### Electrical

RF Parameters	Ports	Frequency(MHz)	Specification
Return Loss	ANT	1710 - 1755	18 dB min. (15 dB bypass mode)
		2110 - 2155	18 dB min.
	BTS	1710 - 1755	18 dB min. (15 dB bypass mode)
		2110 - 2155	18 dB min.
Gain	ANT - BTS	1710 - 1755	8 to 14 dB adjustable in 0.25 dB steps via AISG ( $\pm 0.2$ dB)
Insertion Loss	ANT - BTS (RX Bypass mode)	1710 - 1755	1.1 dB typ. @ 25°C, 1.3 dB @ 65°C ( $\pm 0.05$ dB)
	ANT - BTS (TX)	2110 - 2155	0.25 dB typ. $\pm 0.05$ dB passband ripple
Noise Figure	ANT - BTS	1710 - 1755	1.3 dB typ. @ 25°C, 1.5 dB @ 65°C
Input Third Order Intercept Point	ANT - BTS	1710 - 1755	+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	< 2.0 W

#### Environmental

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



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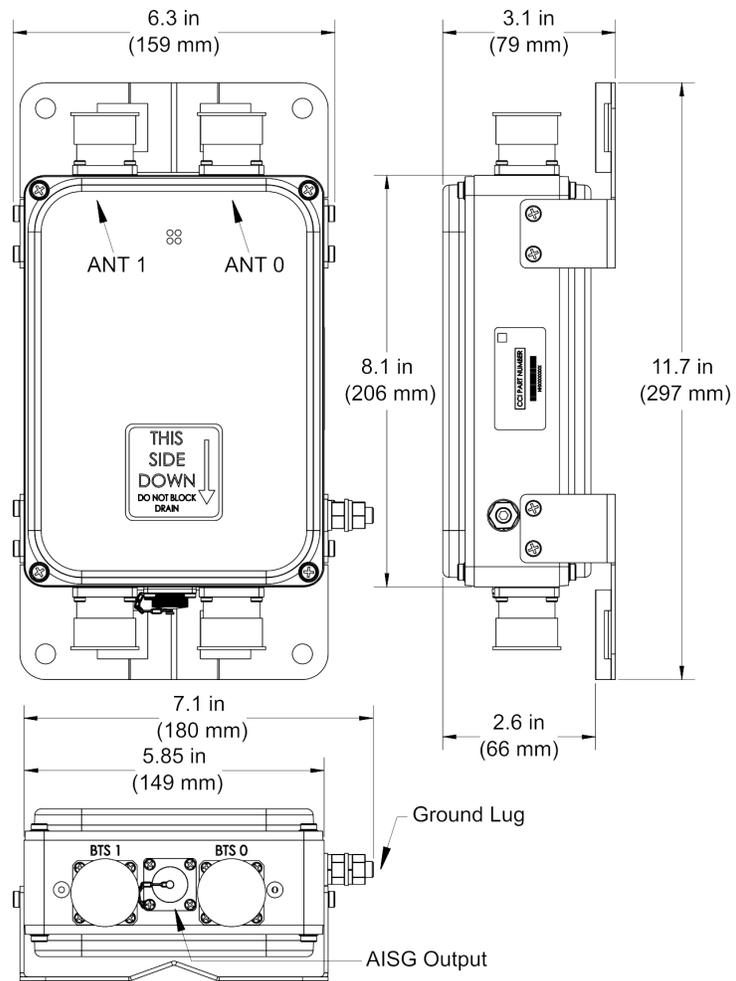
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#### Mechanical

<b>Connectors</b>	4 x 7-16 DIN female, 1 x AISG
<b>Dimensions (w/o connectors or brackets)(HxWxD)</b>	8.1 x 5.85 x 2.6 in. (206 x 149 x 66 mm)
<b>Dimensions (with brackets)(HxWxD)</b>	11.6 x 7.1 x 3.1 in. (295 x 180 x 79 mm)
<b>Weight</b>	8.0 lbs (3.6 kg)-without bracket; 9.0 lbs (4.1 kg)-with bracket
<b>Mounting</b>	Pole/Wall mounting bracket



DTMA1721VG14A Outline Drawing



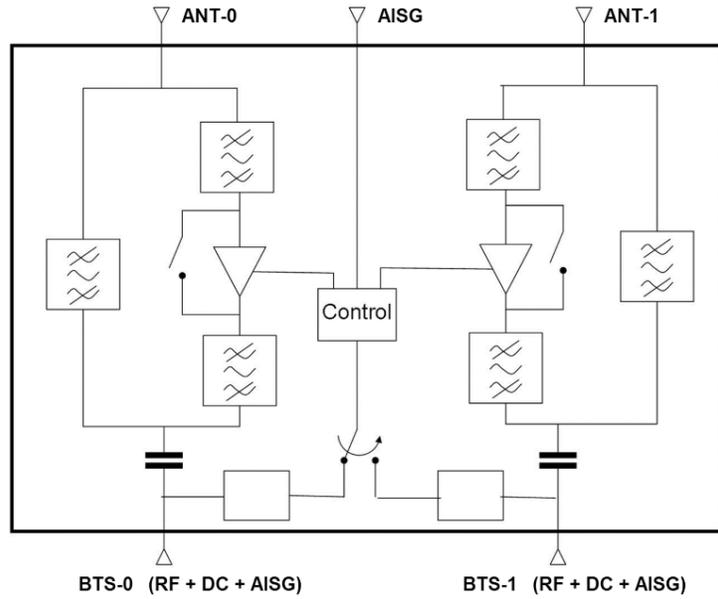
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Block Diagram



DTMA1721VG14A Block Diagram



# Amplifiers

ORDERING

AWS Twin Tower Mounted Amplifier

DTMA1721VG14A

Parts & Accessories

DTMA1721VG14A AWS Full band AISG Twin TMA



# Amplifiers

STANDARDS &  
CERTIFICATIONS

AWS Twin Tower Mounted Amplifier

DTMA1721VG14A

Certifications

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

