



Amplifiers

DATA SHEET

PCS Twin Tower Mounted Amplifier

DTMA1819VG12



- PCS Band Twin TMA with optional support for PCS G Block
- Each TMA has independent AISG 2.0 compliant gain control of 6 to 12dB
- Fail-safe bypass mode and multi-strike lightning protection
- Small lightweight twin unit offers high reliability of >500K Hours MTBF
- Highly linear amplifier with low intermodulation

Overview

CCI's PCS Band Twin TMA, which includes optional support for PCS G Block, contains two fully duplexed TMA's in a single housing. 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 both LTE and UMTS as well as legacy CDMA and EDGE/GSM 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 in-line for ease of installation in space constrained areas such as uni-pole structures and stealth antennas. Gain for each TMA is independently adjustable remotely via AISG connection.

Technical Description:

The TMA system consists of a twin outdoor tower mount unit with two antenna inputs. CCI's Twin PCS TMA is available in two (2) optional sets of bands. The first option covers PCS Blocks A thru F, while the second option covers PCS Blocks A2 thru G. 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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DTMA1819VG12

Electrical

RF Parameters	Ports	Frequency(MHz) PCS A - PCS F	Frequency(MHz) PCS A2 - PCS G	Specification
Return Loss	ANT	1850 - 1910	1855 - 1915	18 dB min. (15 dB bypass mode)
		1930 - 1990	1935 - 1995	18 dB min.
	BTS	1850 - 1910	1855 - 1915	18 dB min. (15 dB bypass mode)
		1930 - 1990	1935 - 1995	18 dB min.
Gain	ANT - BTS	1850 - 1910	1855 - 1915	6 to 12 dB adjustable in 0.25 dB steps via AISG (± 1.0 dB)
Insertion Loss	ANT - BTS (RX Bypass mode)	1850 - 1910	1855 - 1915	1.6 dB @ 25°C, 1.8 dB @ 65°C; 2.3 dB @ 25°C, 2.5 dB @ 65°C at the upper band edge (± 1.0 dB)
	ANT - BTS (TX)	1930 - 1990	1935 - 1995	0.4 dB typ. (± 0.2 dB)
Noise Figure	ANT - BTS	1850 - 1910	1855 - 1915	1.4 dB @ 25°C, 1.6 dB @ 65°C, 1.7 dB @ 25°C, 1.9 dB @ 65°C at the upper band edge
Input Third Order Intercept Point	ANT - BTS	1850 - 1910	1855 - 1915	+12 dBm min. at max. gain

General Characteristics

Impedance	50 ohms
Continuous Average Power	200 W max.
Peak Envelope Power	2 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	< 2.1 W

Environmental

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



Amplifiers

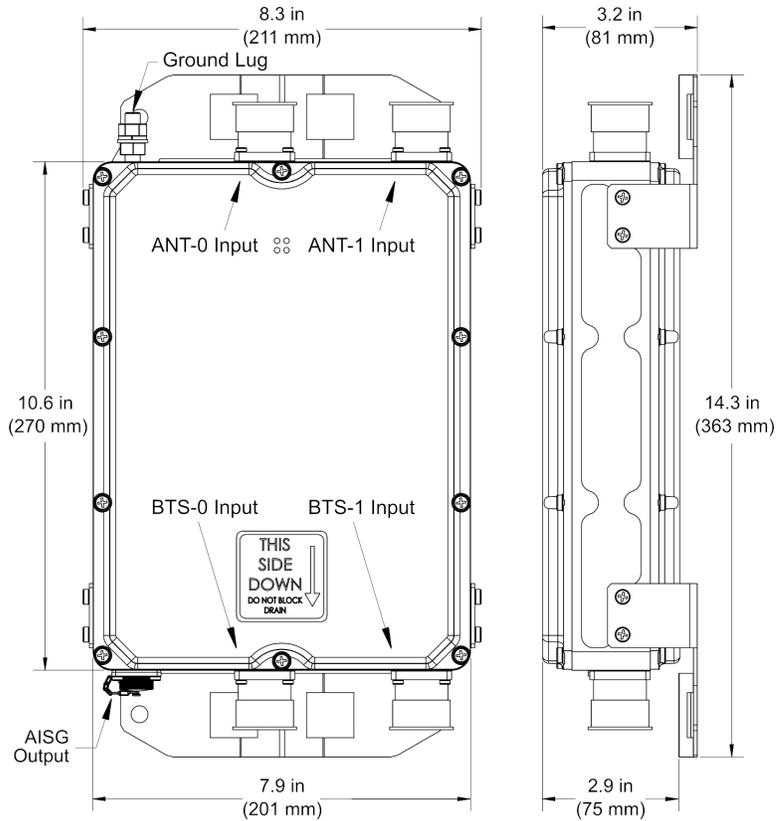
SPECIFICATIONS

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Mechanical

Connectors	4 x 7-16 DIN female 1 x AISG
Dimensions (w/o connectors or brackets)(HxWxD)	10.63 x 7.87 x 2.9 in. (270 x 200 x 74 mm)
Dimensions (with brackets)(HxWxD)	14.25 x 8.3 x 3.2 in. (362 x 211 x 81 mm)
Weight	13.3 lbs (6.0 kg)-with bracket; 12.6 lbs (5.7 kg)-without bracket
Mounting	Pole/Wall mounting bracket



DTMA1819VG12X Outline Drawing



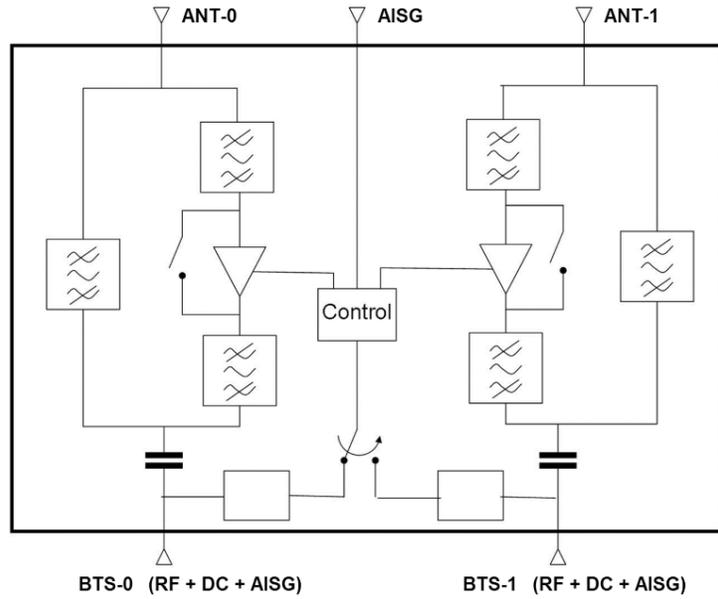
Amplifiers

SPECIFICATIONS

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Block Diagram



DTMA1819VG12X Block Diagram



Amplifiers

STANDARDS & CERTIFICATIONS

PCS Twin Tower Mounted Amplifier

DTMA1819VG12

Parts & Accessories

DTMA1819VG12x PCS Band Twin Tower Mount Amplifier with AISG 2.0 compliant adjustable gain

Option (-x) Description

A TMA supports PCS band blocks A thru F

G TMA supports PCS band blocks A2 thru G

Standards & Compliance

Safety EN 60950-1, UL 60950-1

Emission EN 55022

Immunity EN 55024

Environmental IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-5, IEC 60068-2-6, IEC-60068-2-11, IEC 60068-2-14, IEC 60068-2-18, IEC 60068-2-27, IEC 60068-2-29, IEC 60068-02-30, IEC 60068-2-52, IEC 60068-2-64, IEC61000-4-5, GR-63-CORE 4.3.1, EN 60529 IP68

Certifications

Antenna Interface Standards Group (AISG), Federal Communication Commission (FCC) Part 15 Class B, CE, CSA US, ISO 9001

