

900MHz Twin Dual Duplexed Tower Mounted Amplifier

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General Information



CCI's Twin TMA contains two TMAs 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, backward compatible with DC PDUs, and supports GSM 900 BTS and UMTS 900 Node B equipment. It provides

a convenient package for sites using dual polarization antennas. The twin TMA package reduces tower loading, leasing, and installation costs. 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. Gain is remotely adjustable via the AISG protocol and can be set to suit existing BTS powers and link budgets as well as benefit the new UMTS900 system.



Model DTMA900VG16A

Contents:

General Info and Technical Description	1
Electrical and Mechanical Specifications	2
Block Diagrams & Mechanical Drawings	3

Features:

- Adjustable Gain via AISG
- Small, lightweight, twin unit
- AISG 2.0 compliant
- Dual duplexed
- High linearity
- Lightning protected
- High reliability
- Full 900 band

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 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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CCI 900 Twin Dual Duplexed TMA Typical Specifications



Description	Typical Specifications
Electrical Specifications	
Frequency	Downlink 935 - 960 MHz / Uplink 890 - 915 MHz
Max. Gain	16 dB
Gain Nominal	12 dB
Gain Adjustment	adjustable from 8 dB to 16 dB in 0.25 dB steps via AISG
Gain Variation	±0.2 dB in any 3.84 MHz segment
RX	
Receive Frequency Range	890 - 915 MHz
Bandwidth Rx	≥ 25 MHz
Return Loss in Normal Mode	≥ 18 dB
Return Loss in Bypass Mode	≥ 15 dB
Insertion Loss in Bypass Mode	1.8 dB typical, 2.0 dB Max.
Bypass Mode, Rx Passband Ripple	±0.2 dB in any 3.84 MHz segment
System Noise Figure	1.6 dB @ 16 dB gain
Output IP3	≥ 25 dBm @ 16 dB gain
Tx Band Rejection	≥ 80 dB
Max UL Input Power	+12 dBm
TX	
Transmit Frequency Range	935 - 960 MHz
Bandwidth Tx	≥ 25 MHz
Return Loss in Normal Mode	> 18 dB
Return Loss in Bypass Mode	> 18 dB
Insertion Loss	0.3 dB typical, 0.5 dB Max.
Transmit Passband Ripple	±0.1 dB in any 3.84 MHz segment
Rx Band Rejection	≥ 40 dB
Input Third Order Intercept Point	+9 dBm Min
Group Delay	
Transmit Passband	±4 nS in any 3.84 MHz segment
Filter Characteristics	
Continuous Average Power	200 Watts max
Peak Envelope Power	2 KW max
IDM at TX carrier	-153 dBc (2 tones at +43 dBm)
Impedance	50 Ohm
Operating Voltage	+10 to +30 DC provided via coax or AISG
Power Consumption	4 Watts
Mechanical Specifications	
Connectors	DIN 7-16 female x 4, AISG x 1
Dimensions (TMA Body Only)	270 (H) x 200 (W) x 84 (D) mm
Dimensions (including connectors & brackets)	363 (H) x 211 (W) x 91.5 (D) mm
Weight	7 kg
Mounting	Pole/Wall Mounting Bracket
Environmental Specifications	
Operating Temperature	-40° C to +65° C
Humidity	5% to 99%
Material of Enclosure	Aluminum
Outdoor Protection	IP67 (Unit Body), IP68 (Connector)
Lightning Protection	8/20us, ±20KA max, 10 strikes each, IEC61000-4-5
MTBF	>500,000 hours

All specifications are subject to change. The latest specifications are available at www.ccipproducts.com

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Ordering Information:

Model DTMA900VG16A

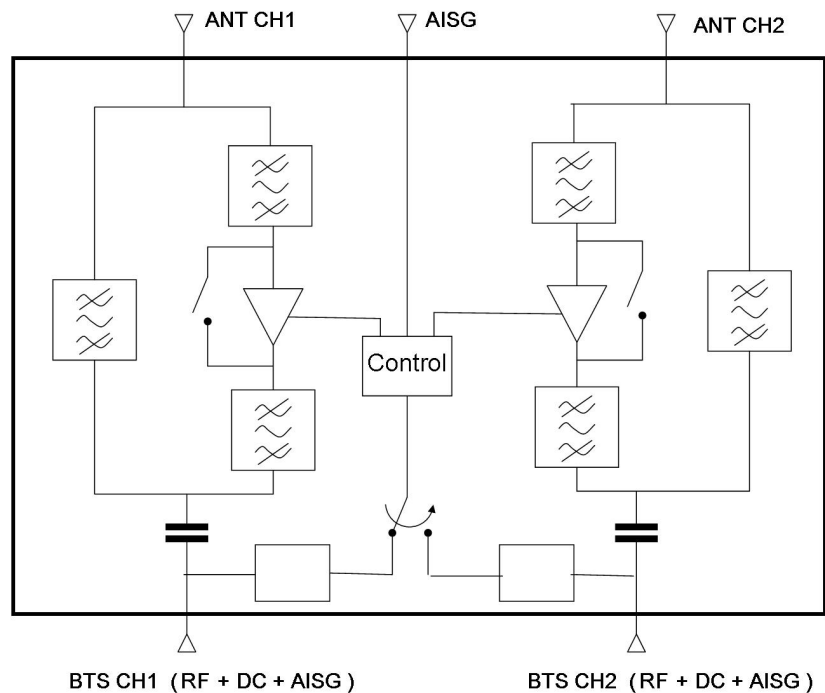
Options:

- ◆ Pole Mount Kit

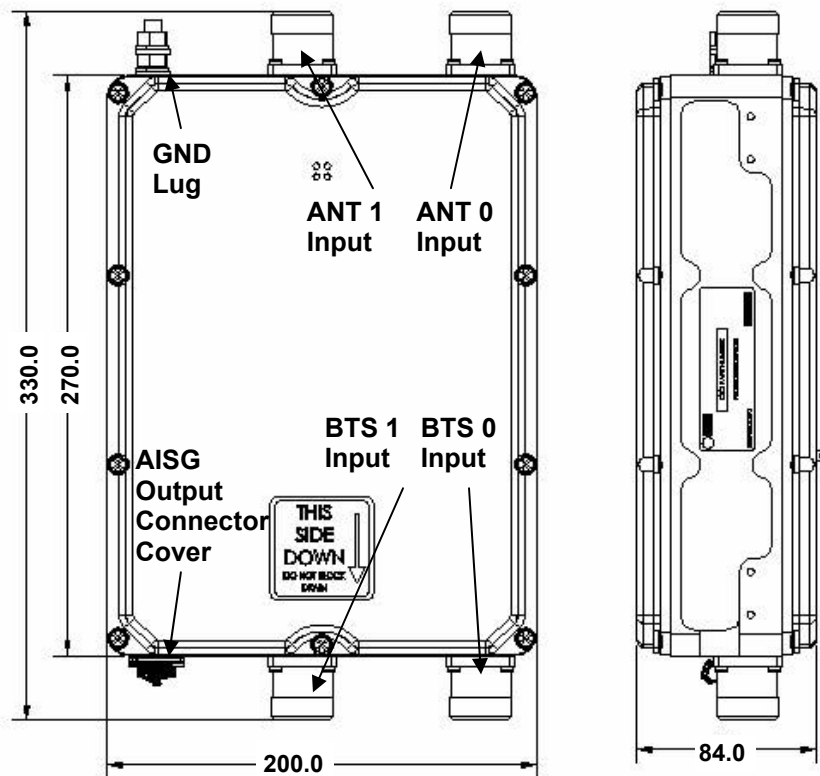
Accessories:

- ◆ Cable Kit (RET-CBK)
- ◆ AISG 2.0 Bias-T
 1. Model BT-0821-DMDF-AG (DIN-Male RF Port, DIN-Female RF+DC+AISG Port)
 2. Model BT-0821-DFDM-AG (DIN-Female RF Port, DIN-Male RF+DC+AISG Port)
 3. Model BT-0821-DFDF-AG (DIN-Female RF Port, DIN-Female RF+DC+AISG Port)
- ◆ AISG 2.0 Site Controller (SCU-AISG2-3-1)

Block Diagram



TMA Outline Drawing



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