



Amplifiers

DATA SHEET

850 MHz Twin Tower Mounted Amplifier

DTMA850FGXX



- Small, lightweight, twin unit
- Dual duplexed
- High Linearity
- Lightning protected
- High reliability
- Full Cellular (25 MHz) 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 supports CDMA, EDGE/GSM and UMTS BTS equipment. It provides a convenient package for sites upgraded to dual or quad antenna configurations. It provides a convenient package for sites using dual polarization antennas. 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. TMA Gain is to be Customer Specified at time of order over a range from 8 dB to 16 dB. 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 is provided via the feeder cable from the BTS.

An optional indoor power supply unit (PDU) is available to power up to six tower mount units and to provide all the monitoring and alarm functions for the system. The PDU 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	824 - 849	18 dB min. (16 dB bypass mode)
		869 - 894	18 dB min.
	BTS	824 - 849	18 dB min. (16 dB bypass mode)
		869 - 894	18 dB min.
Gain	ANT - BTS	824 - 849	8 to 16 dB nominal (± 0.5 dB) (Customer specified)
Insertion Loss	ANT - BTS (RX Bypass mode)	824 - 849	1.7 dB typ. @ 25°C, 1.9 dB over temperature range (± 0.3 dB)
	ANT - BTS (TX)	869 - 894	0.4 dB typ. (± 0.1 dB)
Noise Figure	ANT - BTS	824 - 849	1.5 dB typ. @ 25°C, 1.7 dB @ 55°C
Input Third Order Intercept Point	ANT - BTS	824 - 849	+10 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 +15V DC provided via coax
Operating Current	120 mA

Environmental

Operating Temperature	-40 °C to +55 °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



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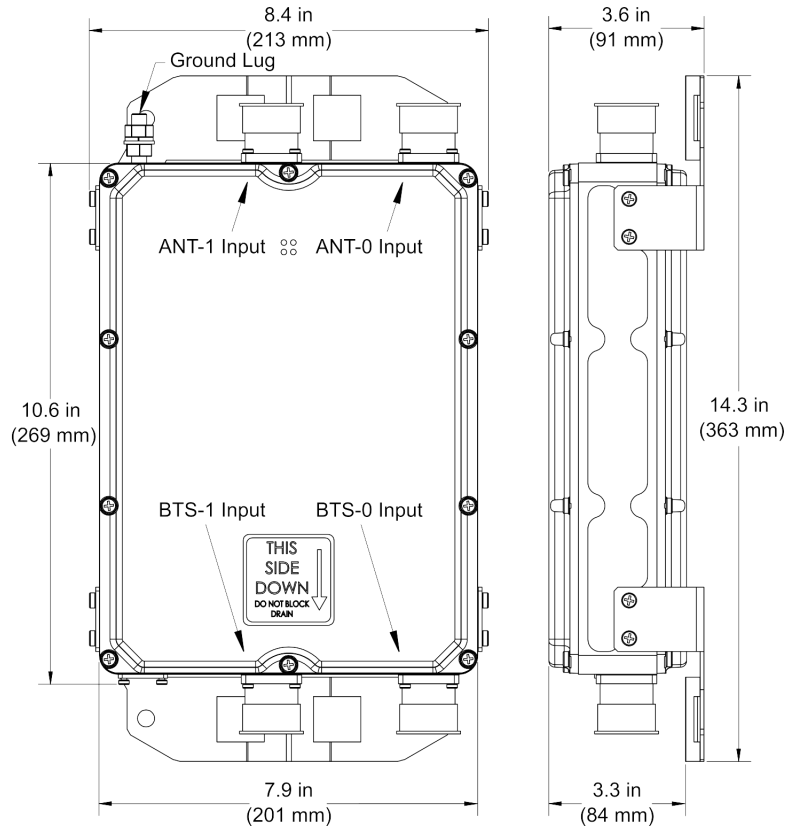
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Mechanical

Connectors	4 x 7-16 DIN female
Dimensions (w/o connectors or brackets)(HxWxD)	10.6 x 7.9 x 3.3 in. (269 x 201 x 84 mm)
Dimensions (with brackets)(HxWxD)	14.3 x 8.4 x 3.6 in. (363 x 213 x 91 mm)
Weight	15.3 lbs (6.9 kg)-with bracket; 14.6 lbs (6.6 kg)-without bracket
Mounting	Pole/Wall mounting bracket



DTMA850FGXX Outline Drawing



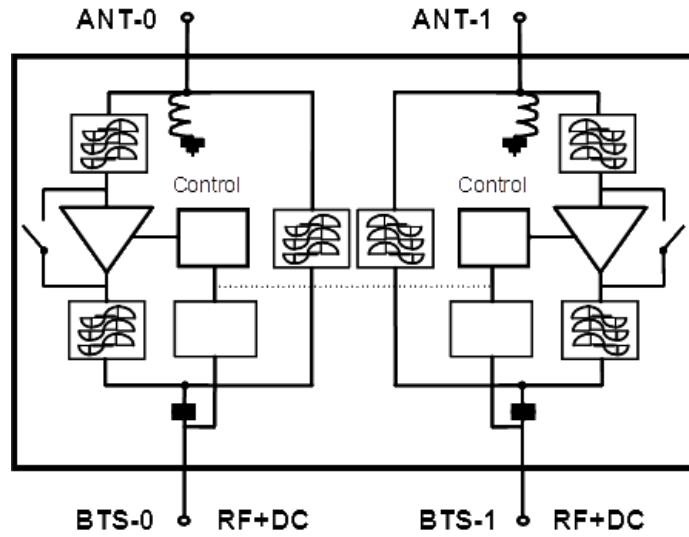
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Block Diagram



DTMA850FGXX Block Diagram



Amplifiers

ORDERING

850 MHz Twin Tower Mounted Amplifier

DTMA850FGXX

Parts & Accessories

DTMA850FGXX 850 Cellular Full band Fixed Gain Twin TMA

Gain	XX
8 dB	08
9 dB	09
10 dB	10
11 dB	11
12 dB	12
13 dB	13
14 dB	14
15 dB	15
16 dB	16

Example: DTMA850FG12 = 12 dB nominal gain



Amplifiers

STANDARDS &
CERTIFICATIONS

850 MHz Twin Tower Mounted Amplifier

DTMA850FGXX

Certifications

Federal Communication Commission (FCC) Part 15 Class B, CE, CSA US