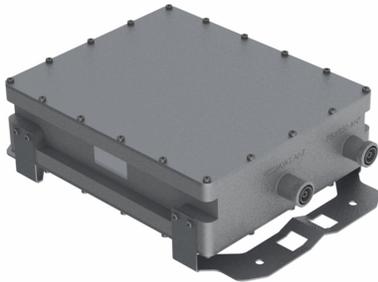




Amplifiers

Dual Band (AWS/PCS) with 700/850 Bypass TMA
DATA SHEET

TMADB7821VG12A



- Small, lightweight, twin unit
- Quad-Band Dual Duplexed AWS/PCS "Active" with 700/850 Bypass
- Independent Gain Control
- High Linearity
- Lightning protected
- Fail-safe bypass mode
- High reliability

Overview

CCI's Quad Band with "Dual Band (AWS/PCS) Active & 700/850 Bypass TMA contains one PCS and one AWS Low Noise Amplifier(LNA) which are fully duplexed and the 700 Band and Cellular Band being bypassed to a single BTS input port and a single Antenna output port. Low noise high linearity amplifiers improve 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 CDMA, EDGE/GSM, UMTS and LTE BTS equipment. The TMA is ideally suited for sites upgraded to quad-band using the existing infrastructure. The TMA allows the sharing of feeder lines for both AWS and PCS bands thus reducing tower loading, leasing, and installation costs. 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 an outdoor quad band tower mount unit which provides low noise amplification of both PCS and AWS signals combined with 700/850 Bypassed signals from antenna port to a common BTS port. Both the AWS and PCS paths are dual duplexed to separate the low-power uplink signals from the high-power downlink signals at the antenna port. The PCS and AWS Rx signals are amplified with dedicated ultra-low noise HEMT LNA's with independent adjustable gain control for each band. The tower mount unit consists of seven band-pass filters, two redundant low-noise amplifiers with independent gain control, bypass failure circuitry, a bias tee, and lightning protection circuitry which are all housed in an IP68 moisture proof enclosure suited to long-life masthead mounting. The unit provides protection against lightning strikes via a multi-stage surge protection circuit. AISG 2.0 DC power and control is provided via the feeder cable from the BTS using the AISG 2.0 and 3GPP standard. Additionally, the AISG TMA operates at constant power when powered by an AISG 2.0 compatible Site Control Unit (SCU), but may also be powered by a standard Power Distribution Unit (PDU). 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 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

Dual Band (AWS/PCS) with 700/850 Bypass TMA SPECIFICATIONS

TMADB7821VG12A

Electrical

RF Parameters	Ports	Frequency(MHz)	Specification	
Return Loss	700/850 ANT	698 - 849	18 dB min.	
		1850 - 1910	18 dB min. (15 dB min. bypass mode)	
		1930 - 1990	18 dB min.	
		1710 - 1755	18 dB min. (15 dB min. bypass mode)	
		2110 - 2155	18 dB min.	
	BTS	698 - 849	18 dB min.	
		1850 - 1910	18 dB min. (15 dB min. bypass mode)	
		1930 - 1990	18 dB min.	
		1710 - 1755	18 dB min. (15 dB min. bypass mode)	
		2110 - 2155	18 dB min.	
	Gain	PCS/AWS ANT - BTS	1710 - 1755	6 to 12 dB adjustable in 0.25 dB steps via AISG (± 0.2 dB)
			1850 - 1910	6 to 12 dB adjustable in 0.25 dB steps via AISG (± 0.75 dB)
Insertion Loss	700/850 ANT	698 - 849	0.25 dB typ.	
		1850 - 1910	1.7 dB typ. @25°C, 1.9 dB typ. @65°C ± 0.75 dB; 2.4 dB @25°C, 2.6 dB @65°C @ 1910 MHz (band edge) ± 0.75 dB	
	PCS/AWS ANT - BTS (RX Bypass mode)	1710 - 1755	1.1 dB typ. @25°C, 1.3 dB typ. @65°C ± 0.2 dB	
		1930 - 1990	0.4 dB typ.	
	PCS/AWS ANT - BTS (TX)	2110 - 2155	0.3 dB typ.	
Noise Figure	ANT (PCS/AWS) - BTS	1850 - 1910	1.5 dB typ. @ 25°C, 1.7 dB typ. @ 65°C; 2.0 dB @ 25°C, 2.2 dB @ 65°C @ 1910 MHz (band edge)	
		1710 - 1755	1.3 dB typ. @ 25°C, 1.5 dB typ. @ 65°C	
	PCS/AWS ANT - BTS	1710 - 1755	+12 dBm min. at max. gain	
		1850 - 1910	+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	< 2.0 W

Environmental

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



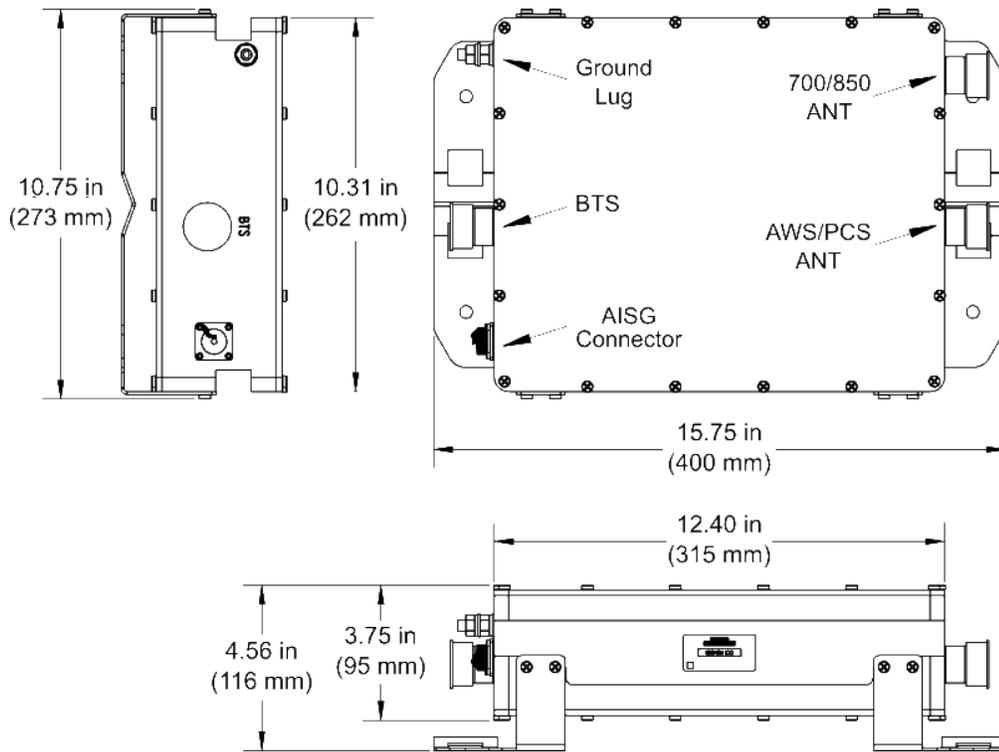
Amplifiers

Dual Band (AWS/PCS) with 700/850 Bypass TMA
SPECIFICATIONS

TMADB7821VG12A

Mechanical

Connectors	3 x 7-16 DIN female 1 x AISG
Dimensions (w/o connectors or brackets)(HxWxD)	12.4 x 10.31 x 3.72 in. (315 x 262 x 95 mm)
Dimensions (with brackets)(HxWxD)	15.75 x 10.75 x 4.56 in. (400 x 273 x 116 mm)
Weight	23.1 lbs (10.5 kg)-with bracket, 22 lbs (10 kg)-without bracket
Mounting	Pole/Wall mounting bracket



TMADB7821VG12A Outline Drawing

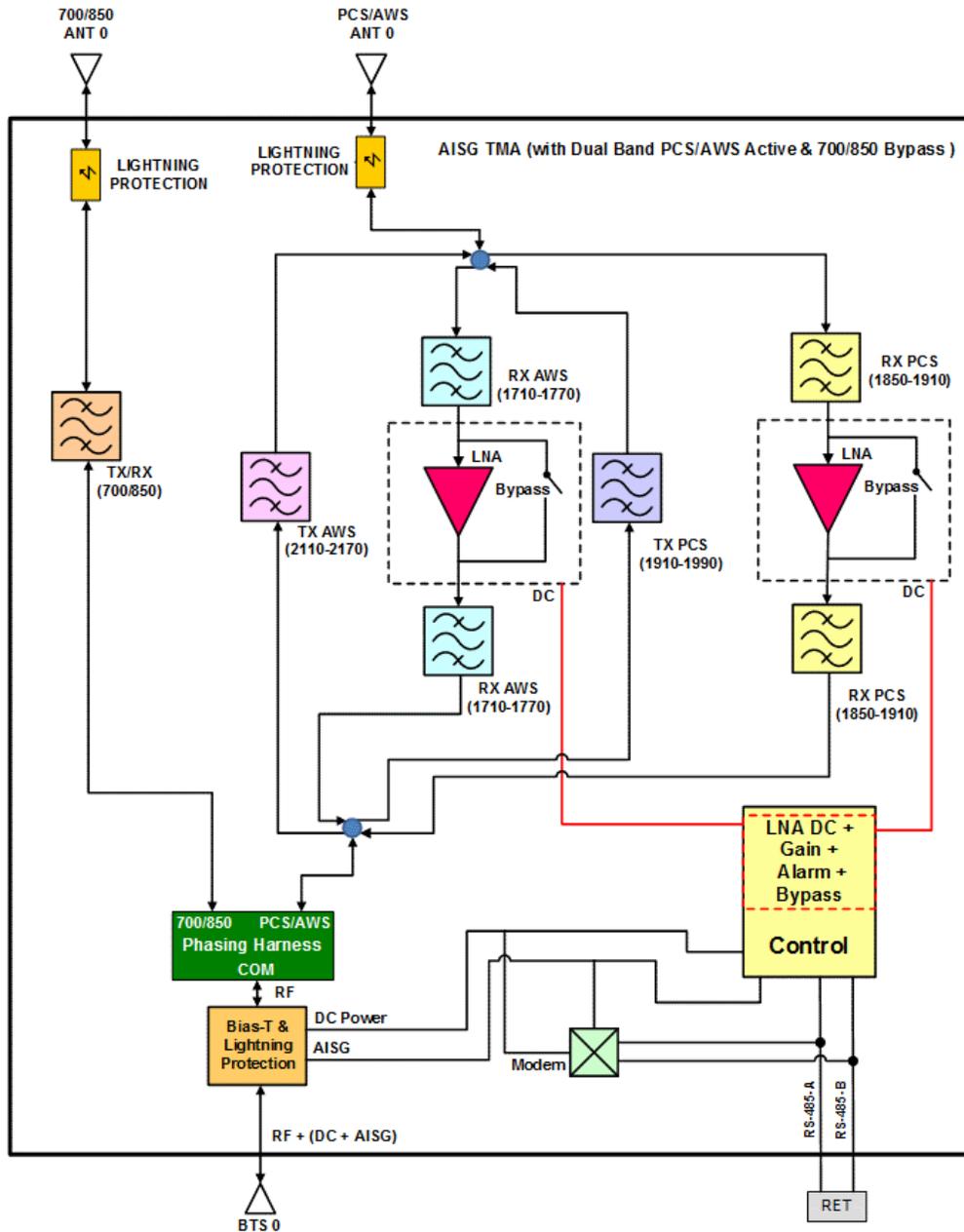


Amplifiers

Dual Band (AWS/PCS) with 700/850 Bypass TMA SPECIFICATIONS

TMADB7821VG12A

Block Diagram



TMADB7821VG12A Block Diagram



Amplifiers

Dual Band (AWS/PCS) with 700/850 Bypass TMA
ORDERING

TMADB7821VG12A

Parts & Accessories

TMADB7821VG12A Dual Band (PCS/AWS) with 700/850 Bypass TMA



Amplifiers

STANDARDS &
CERTIFICATIONS

Dual Band (AWS/PCS) with 700/850 Bypass TMA

TMADB7821VG12A

Certifications

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

