



## Twin AWS/PCS Dual Diplexed UltraAmp™ Tower Mounted Amplifier with 555-960 Bypass, AISG 2.0 Compatible & CWA

RFS' UltraAmp Tower Mounted Amplifiers (TMAs), designed for use in AWS/PCS deployments with a shared low frequency path, improve base station receiver sensitivity and enhance coverage. Use of these TMAs can increase data rates without a reduction in capacity. They are wideband and cover the entire 60 MHz in the PCS and 90 MHz in the AWS (AWS-1, AWS-3, and upper AWS-4) frequency bands. Lightweight, weighing just 7.6 kg (16.8 lbs), these TMAs are easy to install and meet IP67 requirements for ingress protection. They are made of cast aluminum and have a light grey painted housing to blend with antenna radomes. Their dual diplexed configuration enables the use of a single feeder for PCS, AWS and 600/700/850 MHz.

### FEATURES / BENEFITS

- ➔ Four TMAs in a single enclosure – reduces tower load and installation time
- ➔ Internal 600/700/850MHz diplexer – provides an easy method to add low band without additional devices on the tower
- ➔ Covers all of the AWS-1, AWS-3 and upper AWS-4 frequencies
- ➔ Very low noise figure – overcomes feeder losses and enhances site coverage
- ➔ AISG 2.0 protocol compatible – enables TMA alarm reporting and supports easy remote tilt connection
- ➔ Dual diplexed configuration – enables use of a single feeder for PCS, AWS and 600/700/850MHz
- ➔ Low insertion loss Tx filter – helps maintain good downlink coverage
- ➔ Lightest weight, highest performance TMA available – reduces tower loading and facilitates installation
- ➔ Equipped with breather valves – guards against internal condensation buildup
- ➔ Auto Bypass Switch – increases the reliability of the system
- ➔ Dual mode alarm system – flexible for both CWA and AISG 2.0



### Technical Features

#### GENERAL SPECIFICATIONS

Frequency Range	MHz	1695-2200
Frequency Band		LTE700, 850, PCS, LTE1900, CDMA, UMTS, AWS-1, AWS-3, AWS-4(U)
Configuration		Twin, Dual Diplexed, Fixed Gain, Low band bypass
Impedance	Ohms	50.0

#### RX (UPLINK)

Frequency Range	MHz	AWS: 1695-1780, PCS: 1850-1910
Bandwidth	MHz	AWS: 85, PCS: 60
Noise Figure, Typical	dB	AWS: 1.1, PCS: 1.25
Gain	dB	12 +/-1.0
Return Loss, Min	dB	18.0
Tx Rejection in Rx Branch, Min	dB	80
Group Delay	ns	AWS: 30, PCS:100
Bypass Return Loss, Typ	dB	14.0
Bypass Insertion Loss, Max	dB	3.0

#### TX (DOWNLINK)

Frequency Range	MHz	AWS: 2110-2200, PCS: 1930-1990
Bandwidth	MHz	AWS: 90, PCS: 60
Insertion Loss, Max	dB	AWS: 0.3, PCS: 0.55
Insertion Loss, Typical	dB	AWS: 0.2, PCS: 0.3, LB: 0.1
Return Loss, Min	dB	18.0
Passive Intermodulation	dBm	-117.0
Passive Intermodulation Test Method		2 x 43 dBm carriers at ANT port
Rx Rejection in Tx Branch, Min	dB	AWS: 60, PCS: 50
Power Handling, Max	W	180.0
Power Handling, Peak	W	5000.0

#### TESTING AND ENVIRONMENTAL

MTBF	hrs	>2,000,000 (Telcordia SR-332, Issue 3, 2011)
Ingress Protection		IP67
Environmental		ETSI 300 019 1-4 Class 4.1E
Lightning Protection		Connector Pin IEC 61000-4-5 10 kA, 8/20 us; Enclosure IEC 1312-1 50 kA, 10/350 us

#### BAND PASS

Frequency Range	MHz	555-960
Bandwidth	MHz	405.0
Insertion Loss, Max	dB	0.2
Insertion Loss, Typical	dB	0.1
Group Delay	ns	3.0
Return Loss, Min	dB	18.0
Passive Intermodulation	dBm	-117.0
Passive Intermodulation Test Method		2 x 43 dBm carriers at ANT port

#### AISG

Voltage Range	VDC	10-30
Protocol		AISG 2.0, AISG 1.1, CWA
AISG Bypass, Max	A	2.0

#### DC POWER/ALARM

Power Supply Voltage	VDC	10-30
Nominal Current, AISG	mA	380 +/-20
Nominal Current, CWA	mA	100 +/-20
Alarm Current, CWA	mA	190 +/-20
Power Consumption, CWA, Max	W	3.0

#### MECHANICAL SPECIFICATIONS

RF Connectors		7-16 DIN Female, Long Neck
RF Connector Configuration		2 BTS, 2 ANT, 2 Bypass
AISG Connectors		AISG 8-pin female
Weight	kg (lb)	7.19 (15.85)
Dimensions, H x W x D, mm (in) (not including connector length)	mm (in)	284 x 203 x 126 (11.2 x 8 x 4.9)
Volume	L	7.3
Mounting		Wall, Pole (54-105mm) - Hose Clamps included
Color		Grey

#### RELATED PRODUCTS

Supporting Power Distribution Unit (For CWA Mode Operation)		PDU-6A with 2x Bias-T (BITUB-07 or BITUB-09)
Smart Bias T (For AISG 2.0 Operation)		BITUB-4AL20, BITUB-5AL20, BITUB-6AL20, BITUB-7AL20, BITUB-8AL20
Diplexer/Triplexer (For feeder/antenna sharing applications)		FDA3P series, FD9R series, FDBL series, FTL8Z series, FTA3PB series, FTA4P series

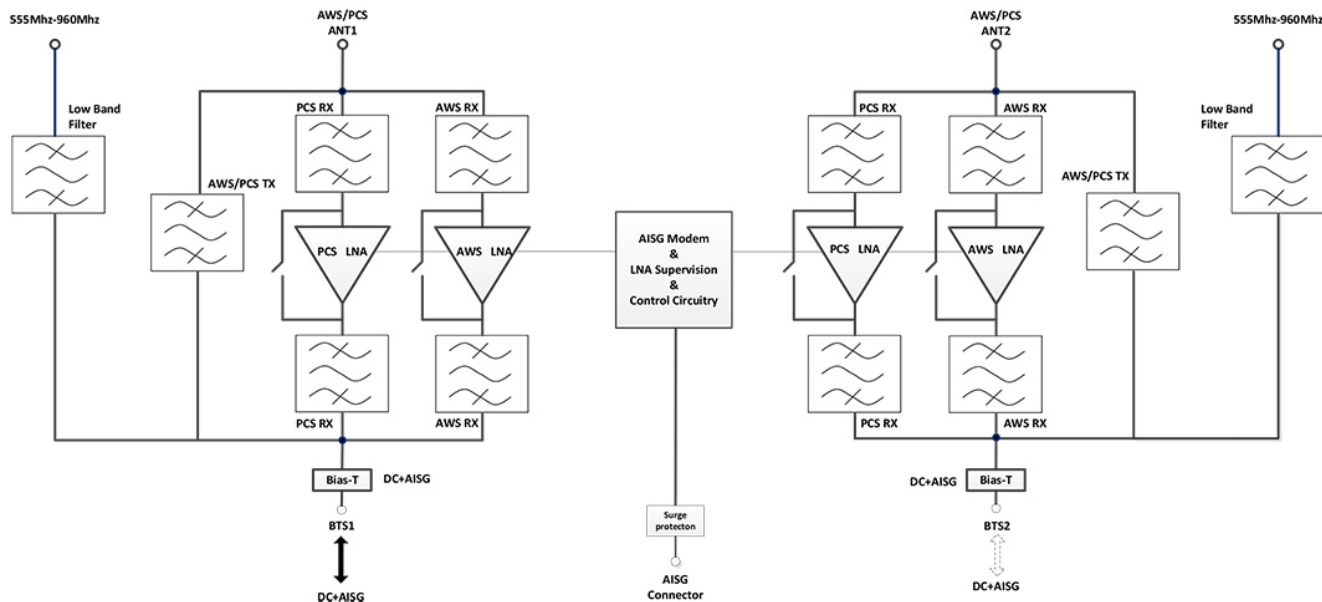


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**External Document Links**

Installation Instructions  
 RFS TMA Field Test Procedure

**Notes**



Block Diagram