

Twin WCDMA Tower Mounted Amplifier

TA-W24VDA



Features

- Two TMA units in one enclosure.
- Balanced uplink LNA design with bypass ensures minimal disruption to uplink signal during power failure.
- Light weight and compact design.
- Gain adjustment.
- Built-in lightning protection.
- Ventilated design using GORE-TEX membrane helps prevent moisture from building up within enclosure.
- AISG 2.0 Compatible.



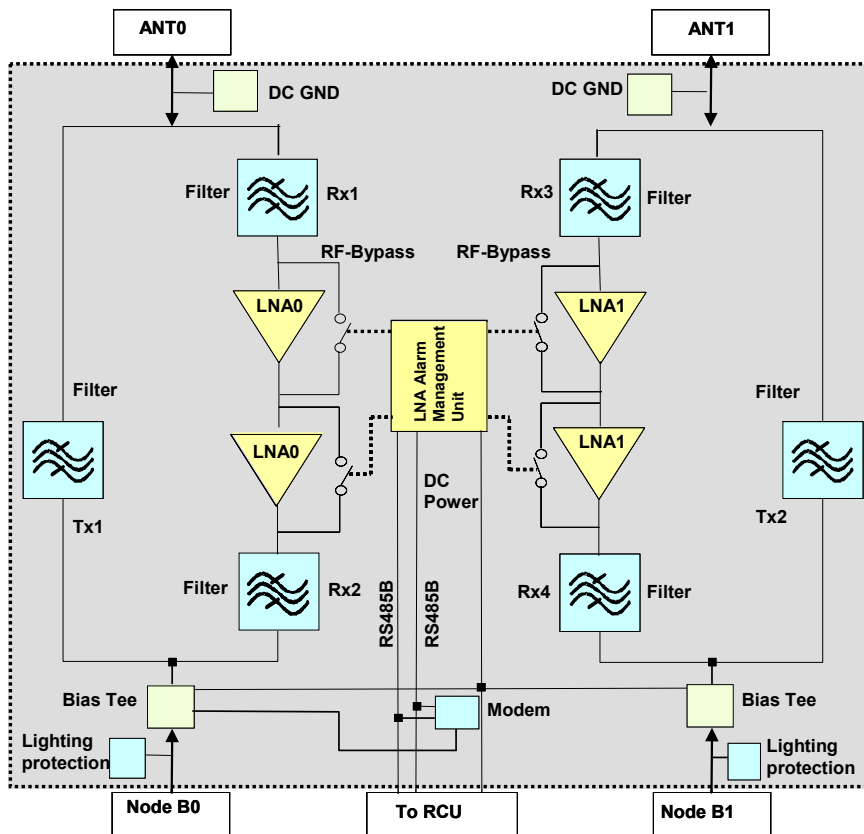
Product Description

The TA-W24VDA is a WCDMA twin tower mounted amplifier for both main and diversity branch and fits with cross-pole antennas. The unit is installed near the antenna at the tower top to improve receiver sensitivity of the base station. The usage of TA-W24VDA will result in an increase of successful call attempts, reduction of call drops, maximized data transmission rate, improved call quality and extended handset talk time. Quality improvements will lead to increased traffic volume and user satisfaction, hence increasing network revenue. It is recommended for use in new network roll-outs to minimize base station count, or for upgrading of existing base stations to improve signal quality and drop call performance.

The system comprises of high quality band-pass filters, low noise amplifiers (LNA), bias tee, lightning protection and by-pass circuitries. The LNA bypass circuitry is activated when the DC supply is switched off or when there is a fault in the system.

Power is supplied via external bias tees that connect between the TA-W24VDA and the PDM. Each PDM is constructed into a 19" 1U form factor, and can provide power for up to three units of TA-W24VDA.

Block Diagram



Twin WCDMA Tower Mounted Amplifier

TA-W24VDA



Technical Specifications

Electrical - Uplink

Frequency Range	MHz	1920-1980	
System Gain	dB	24 ± 1	
Gain Adjustment Range (0.5dB step)	dB	12-24	
Gain ripple	dB	≤ 1.0	
Noise Figure	Normal Temperature	dB	≤ 1.8(typ. 1.4)
	(-40°C to +65°C)		≤ 2.0
3 rd order intercept point (OIP3)	dBm	≥ 29	
Insertion Loss, By-pass Mode	Normal Temperature	dB	≤ 1.7(typ); 2.3(max)
	(-40°C to +65°C)	dB	≤ 2.6
Output 1-dB compression point	dBm	≥ 19	
Return Loss	Normal Operation	dB	≥ 18
	By-pass Mode	dB	≥ 14
Maximum Delay in RX band	ns	80	
Maximum Delay per 5MHz band	ns	20	
TX rejection	dB	≥ 100	

Electrical – Downlink

Frequency Range	MHz	2110-2170	
Insertion Loss	Normal Temperature	dB	≤ 0.5
	(-40°C to +65°C)	dB	≤ 0.6
Return Loss (-40°C to +65°C)	dB	≥ 18	
Absolute Maximum RF Input Power	dBm	52(CW); 59(Peak)	
PIM in Rx band @2x43dBm Carrier at Tx input	dBm	≤ -117	
Maximum Delay in TX band	ns	25	
Maximum Delay per 5MHz band	ns	5	
Rx Rejection	dB	≥ 55	

Power, Mechanical & Environmental

Modem characteristics		According to AISG standard 2.0(Data rate:9.6kB)
Alarm management		According to AISG standard 2.0
Connectors Type	RF	7/16 DIN-Female
	AISG	8-pin Female IEC60130-9 (Pin1: +12V ,Pin3:RS485B, Pin5:RS485A, Pin7:DC return; other pins: not connected)
Operating Voltage	V	+10 to +30
Power Consume	W	≤ 2.5 per TMA
Operating Current with single port power supply	mA	90 ± 10 @+24V
Operating Current with dual port power supply	mA	180 ± 10 @+24V
Operation mode		DC/AISG Node B0
		DC Node B1
Dimensions, L x W x H (excluding connector)	mm (in)	192x196x54 (7.6x7.7x2.1)
Weight	kg (lb)	4 (8.8)
Mounting		Wall mounting: With 4 screws
		Mast mounting: With clamp set
Enclosure Color		Light Grey
Enclosure Material		Aluminum
Operating Temperature	°C	-40 to +65
Storage Temperature	°C	-40 to +85
Operating Humidity	%	≤ 95
EMC		ETS 300 342-3
Lightning Protection	RF	8kA, 8/20µs
	AISG	RS485A. RS485 B Different mode 3kA. Common mode 5kA, DC and GND Different mode 3kA
Environmental Class		IP67
MTBF	hr	> 1,000,000 per TMA

Note: Measurements taken at room temperature, unless otherwise stated.