

# Full Band Twin GSM1800 Tower Mounted Amplifier

TA-D12FDA



## Features

- Two TMA units in one enclosure
- Balanced LNA design and power failure bypass for high reliability
- Alarm management: DC current load simulation
- Light weight and compact design
- Salt spray resistance
- IP66 with Gore Tex ventilation membrane
- Built-in lightning protection and vented enclosure design
- EMP protection with excellent MTBF
- AISG 1.1 Compatible



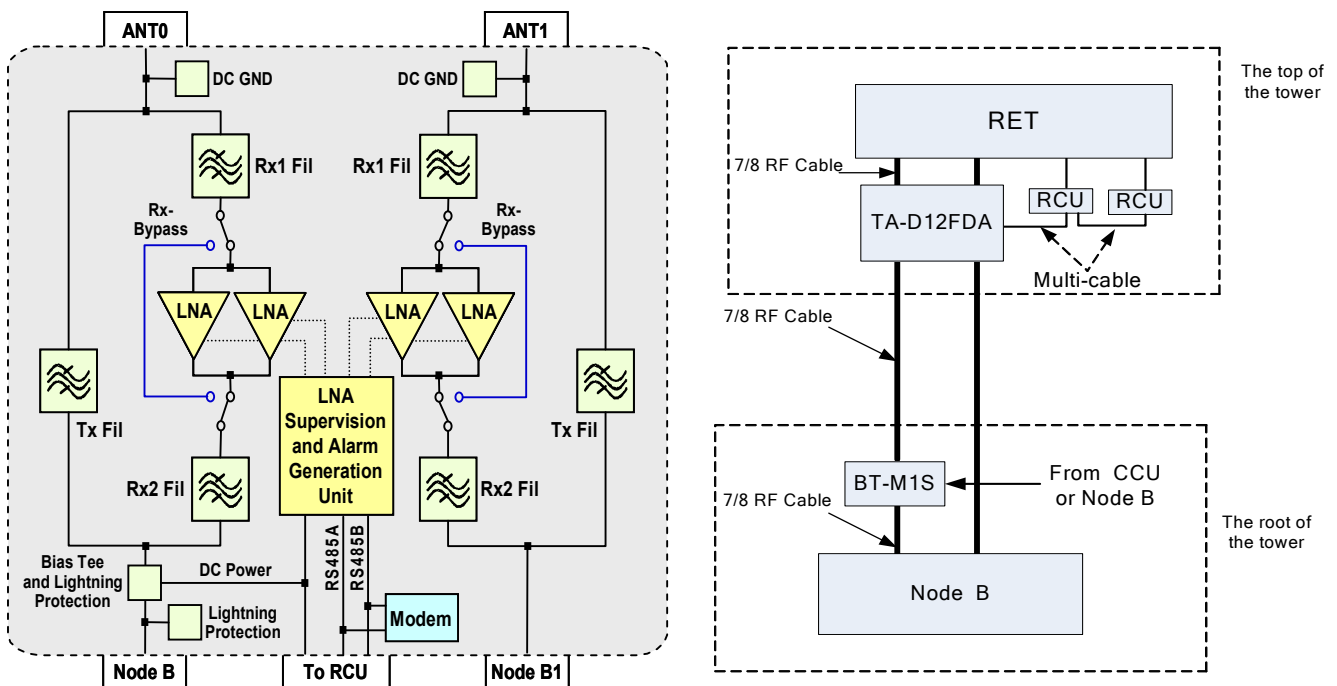
## Product Description

The TA-D12FDA is a full band GSM1800 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-D12FDA 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 high quality band-pass filters, low noise amplifiers (LNA), bias tee, and lightning protection and bypass 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 smart bias tee that connects between TA-D12FDA and Node B. AISG signals pass through smart bias tee and are transmitted to other antenna line devices via TA-D12FDA.

## Typical Application Block Diagram



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## Technical Specifications

### Electrical - Uplink

Frequency Range	MHz	1710-1785
Bandwidth	MHz	75
System Gain	dB	12 ± 1
Noise Figure	dB	≤ 1.9 (typ. 1.5)
Pass Band Ripple	dB	≤ 1.2
Insertion Loss in By-pass Mode	dB	≤ 2.2
Output 3 <sup>rd</sup> Order Intercept Point (OIP3)	dBm	≥ 25
Return Loss	Normal Operation	≥ 18
	Bypass Mode	≥ 14
Group Delay	ns	≤ 100
Alarm Management in Normal Mode	Operation	> 230 ± 20@+12V (Minor Alarm)
	By-pass Mode	> 330 ± 20@+12V (Major Alarm)
Alarm Management in AISG Mode		Compatible with AISG 1.1

### Electrical - Downlink

Frequency Range	MHz	1805-1880
Bandwidth	MHz	75
Insertion Loss	dB	≤ 0.6
Return Loss	dB	≥ 18
Absolute Maximum RF Input Power	dBm	52 (CW); 59 (Peak)
Inter-modulation Products in RX Band	dBm	≤ -110 (2 TX carriers at +43dBm)
Group Delay	ns	≤ 50

### Power, Mechanical & Environmental

Modem Characteristics		According to AISG standard 1.1 (Data rate:9.6kB)
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 +15
Operating Current with Dual Ports Power Supply	mA	130 ± 10 @+12V
Operating Current with Single Port Power Supply (AISG Mode)	mA	240 ± 10 @+12V
Power Consume	W	≤ 3
Operation Mode		DC/OOK Node B0
		DC Node B1
Dimensions, LxWxH (excluding connectors & mounting brackets)	mm(in)	250x224x60 (9.8x8.8x2.4)
Weight	kg(lb)	5 (11)
Mounting		Wall mounting: with 4 screws
		Mast mounting: with clamp set
Enclosure Color		Light Grey
Enclosure Material		Aluminum
Operating Temperature		-40 to +65
Operating Humidity	%	≤ 95
EMC	°C	ETS 300 342-3
Lightning Protection	RF Ports	Comply with IEC 61000-4-5; 8kA, 8/20μs
	AISG Port	RS485A, RS485 B Different mould 3kA, Common mould 5KA ,DC and GND Different mould 3kA
Environmental Class		IP66
MTBF	hr	> 500,000

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