

NEW



RADIO FREQUENCY SYSTEMS

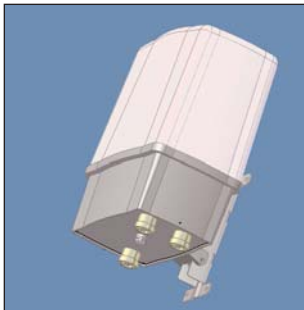
Wideband Tower Mount Amplifier



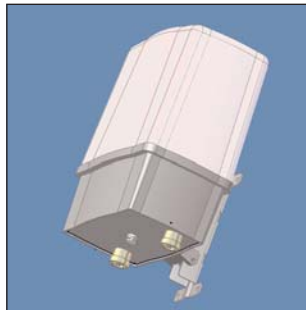
RFS's new wideband tower mount amplifier was developed specifically for use in the UMTS overlay.

These units improve base station receiver sensitivity and enhance coverage while they provide higher data rates to subscribers without reducing capacity.

Four configurations of TMA's are available.



Configurations 1 and 2



Configurations 3 and 4

Configuration 1

ATM19801712-0 850/1900 MHz dual-band dual-duplex TMA for sites where both 850 and 1900 systems are co-located and both systems need TMAs.

Configuration 2

ATM192012B-0 1900 MHz dual-duplex TMA with a 850 MHz bypass connector for sites where a TMA is used for the PCS 1900 MHz system but no TMA is used for the 850 MHz cellular system. The unit includes an internal DC block for the 850 MHz connector port.

Configuration 3

ATM192012-0 1900 MHz dual-duplex TMA (Configuration 1 with the 850 MHz side unequipped) for sites with only 1900 MHz systems.

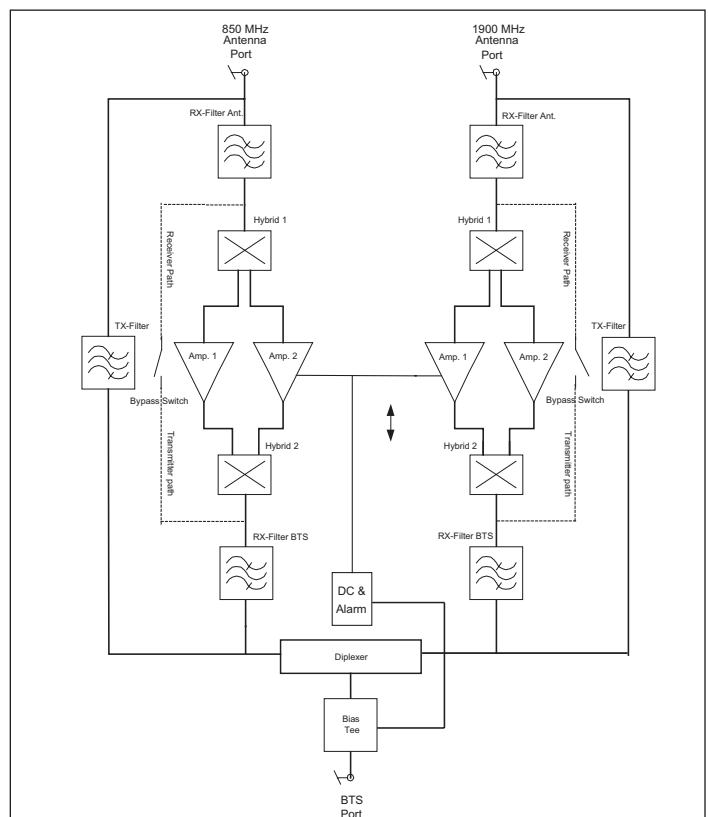
Configuration 4

ATM801712-0 850 MHz dual-duplex TMA (Configuration 1 with the 1900 MHz side unequipped) for sites with only 850 MHz systems.

Features and Benefits

- **Low noise figure** - overcomes feeder losses and enhances site coverage.
- **Sharp roll-off filters** - improves Tx-Rx isolation by reducing noise and interference.
- **Dual-duplex configuration** - enables use of a single feeder for both Tx and Rx.
- **By-pass switch in both bands** - increases the reliability of the system.
- **Low insertion loss of Tx filter** - provides increased downlink coverage.
- **Integrated diplexer (Configurations 1 and 2)** - no need for an external diplexer at the tower top reducing the number of tower top units required and the tower loading.
- **Extremely light weight** - Reduces tower loading and facilitates installation.
- **Common power supply unit** - reduces inventory and logistics.
- **Tightly controlled filter roll-off** - reduces absolute delay variation in the uplink, enhancing the receive diversity feature.
- **Bias-T with surge protection** - no need for separate surge suppressors, reducing cost.
- **Equipped with breather valve** - guards against internal condensation.

Block Diagram





Specifications

	Cellular Side (850 MHz)	PCS Side (1900 MHz)
Tx Frequency Band, MHz	869-894	1930-1990
Rx Frequency Band, MHz	824-849	1850-1910
851/1912 MHz Attenuation, dB	> 30	>10
Roll Off, dB/MHz	15	5
Gain, dB	12 +/- 1 dB	12 +/- 1 dB
Noise Figure, Mid-Band, dB (Room Temperature)	<1.5 (1.3)	<1.6 (1.35)
Noise Figure, Full-Band, dB (Room Temperature)	<1.75 (1.4)	<1.95 (1.6)
TMA Insertion Loss (Tx path), dB	< 0.5	< 0.5
Amplifier Bypass Loss, dB	< 2.8	< 2.8
850 MHz Bypass loss, dB	<0.4	
Transmit/Receive Isolation Tx into Rx, dB	> 90	> 80
Transmit/Receive Isolation Rx into Tx, dB	> 45	> 50
Maximum RF Power Input, W Continuous	500	300
Peak Power w/MCPA, kW	>5	>3
Input Return Loss (VSWR), Operation/Bypass, dB	18 / 17	18 / 17
Output Return Loss (VSWR) Operation/Bypass, dB	16 / 14	16 / 14
1 dB Compression Point, dBm	0	0
Third Order Intercept, Input, dBm	13	13
3rd Order Intermod (Antenna Connector) Into Rx Band, dBm	<-120	<-120
Differential Delay Across Full U/L Passband, ns	350	220
Absolute Delay (Ant in to BTS out) Mid-Band, ns	120	55
Variance, ns over temperature (unit to unit)	15	15
Maximum Input Level in Rx Band, dBm continuous	10	10
Lightning Protection, kV/kA		
BTS Port	20/10 (IEC 61000-4-5)	20/10 (IEC 61000-4-5)
Antenna Port	Direct Ground	Direct Ground
Operating Temperature, °C	-40 to +65	
Weather Protection	Meets IP66	
MTBF, hrs	>300,000	
Connectors	7-16 DIN long-neck female. Three for Configurations 1 and 2; Two for Configurations 3 and 4.	
Warranty	5 Years	
Weight, Configurations 1,2,3,4, lb	19, 11, 11, 13	
Dimensions, in (max)	10 x 11.5 x 6	
Color	Light Grey RAL 7035	
Housing Material	Metal cast base and radome top	
Mounting Hardware	Included	

Supplementary Items

PDU1912-0	Power distribution unit. A single unit powers up to 6 single TMAs or 6 dual TMAs.
716-UC90-07	Bias-T with surge arrestor (EMP), used to feed the power supply to the feeder cable. Includes 20 ft of cable to connect to PDU. (One required for each TMA.)
Wideband cross-band couplers (diplexers):	
FDGW5504/1C-3	With DC pass in both bands
FDGW5504/2C-3	With DC pass in high band
FEGW5504/3C-3	With DC pass in low band

PDU1912-0

Input Voltage, V DC	+24 or -48
Output Voltage, V	+12 ±0.5 (6 outputs)
Input Power, W	<75
Mounting	19" rack or wall mount
Height	One rack unit

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