

## 434B-Mission Critical Series Mini AutoQuad™ Tower Top Amplifier Systems



The TX RX Systems Auto Quad Tower-Top Amplifier (TTA) system is a high performance, quadrature-coupled low noise amplifier (LNA). The TTA increases receive sensitivity, improves receiver noise figure and can make all the difference in mission critical communications.

The TTA operates independently, monitoring LNA current and automatically switching to a redundant LNA if needed. Status reporting is accomplished via AISG compliant telemetry between the controlling processor in the Tower Box and the base control unit. The base control unit has an on board AISG modem which does not require the use of an external data cable. This telemetry does not interfere with RF Signals in any way and communicates the LNA currents, temperature and operational status to the base control unit LCD display. Test modes and manual switching between LNA's is also accomplished by way of the telemetry system.

The TTA consists of two components: the tower top amplifier mounted close to the antenna and the receiver multicoupler. In order to reduce the size of the TTA and simultaneously provide 120 dB of isolation to a TX carrier, filtering has been split between the TTA and the base unit.

### FEATURES

- ▶ All tower top ports protected by internal surge suppressors
- ▶ Two independent Quadrature Coupled LNA's in the tower top assembly provides the redundancy needed to ensure maximum uptime
- ▶ Microprocessors continuously monitor amplifiers and will switch tower top LNA's if needed
- ▶ Ethernet
- ▶ Multiple Real-Time Status and Alarm Annunciation Methods:
  - Secure SNMP (v3.0) Trap Messaging (compatible with most SNMP Managers)
  - Form-C contacts
  - Front Panel Status Indicators
- ▶ Wind loading is reduced due to the smaller enclosure size
- ▶ Available with a 16 port receive multicoupler unit
- ▶ Expandable as needed to 32, 40 or 48 ports

### APPLICATIONS

The TTA is designed to increase the performance of a Base Transceiver Station (BTS) while ensuring reliable communications for critical Public Safety applications. This increase in sensitivity can make up for the imbalance between mobile and handheld users in critical systems.

#### TX RX Systems Inc.

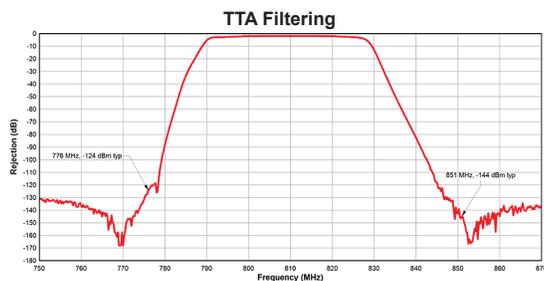
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716.549.4700 | Sales@txrx.com | www.txrx.com

### SYSTEM SPECIFICATIONS

Frequency Bands	700-800 MHz, 900 MHz
Net Gain	15.0 Typ.
Rejection	110 dB min. at 776 and 851 MHz
Noise Figure	2.9 dB Typ.
Total Power Dissipation	17W

### TOWER TOP AMPLIFIER SPECIFICATIONS

Frequency Bands	
700/800 MHz	792-824 MHz
900 MHz	896-902 MHz
Preselector Included	Yes
Preselector Frequency Range	792-824 MHz, 896-902 MHz
Type of Amplifier	Quadrature Coupled (Redundant)
Amplifier Switching	Automatic
Type of Amplifier Switching	Solid State RF Switch
TTA Gain (Input to output of TTA)	22.5 dB Typ.
LNA OIP3	> 42 dBm Typ.
Return Loss of all RF Ports	> 14 dB
Power Requirements	Power derived from Rx Cable
Operating Temperature Range	-30° C to +60° C
Amplifier Redundancy	Automatic change - over
Lightning Protection	Impulse suppressor on all external ports
Test Port Included	Yes
Coupling Test Port (Test in/Amp in)	30dB
50 Ohm Termination Test	Controlled by base unit
Type of RF Test Switching	Solid State RF Switch
Bypass Test Mode	Controlled by base unit
Enclosure	Weather resistant Housing, Designed to NEMA Standards
700/800 Dimensions/Net Weight	8.84" x 5.77" x 6.04"/8 lbs
900 Dimensions/Net Weight	7.25"x11.25"x11.25"/14.28 lbs



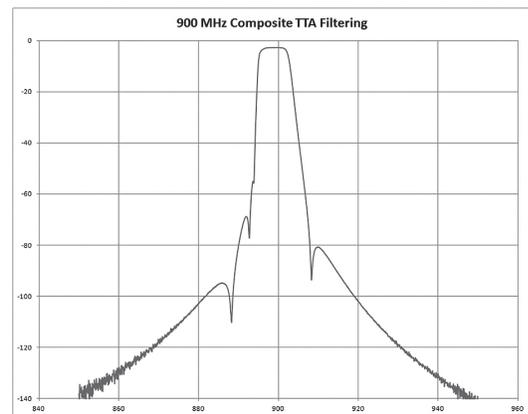
A steep skirted TEM bandpass filter in the tower box augmented by a ceramic filter in the base unit provide a selective 32 MHz system window.

Model Numbers	Description	Power Req
434B-83H-01-T	TTA, Mini AutoQuad, 792-824 MHz, tower top box only	
434B-83H-01-M-110	Multicoupler Unit (MCU) 16-port, 792-824 MHz, used with 434B-83H-01-T	AC
434B-83H-01-M-48	Multicoupler Unit (MCU) 16-port, 792-824 MHz, used with 434B-83H-01-T	-48
434B-94D-01-T	TTA, Mini AutoQuad, 896-902 MHz, tower top box only	
434B-94D-01-M-110	Multicoupler Unit (MCU) 16-port, 896-902 MHz, used with 434B-94D-01-T	AC
434B-94D-01-M-48	Multicoupler Unit (MCU) 16-port, 896-902 MHz, used with 434B-94D-01-T	-48

### BASE UNIT SPECIFICATIONS

Frequency Band	792-824 MHz, 896-902 MHz
Net Gain or Loss (RMC in to Rx out)	+1 dB Typ
Number of Output Ports	16 expandable to 48
TTA Connector	N-Female
Receiver Connector	BNC-Female
Rx-Rx Port Isolation (Min)	>20 dB
Test Port Input (Front of RMC)	BNC-Female
Test Port Output (Rear of RMC)	N- Female
Net Gain Electronic Attenuator	15 dB in 0.5 dB steps (6 dB default)
Alarm Contacts	Form-C contacts
Ethernet Port	RJ45 (front panel access)
Power Requirements	90-240 VAC @ 50/60 Hz or -48 VDC
Operating Temp Range	0°C to +50°C
Enclosure	Standard EIA 19" Rack Mounting
700/800 Dimensions/Net Weight	1 RU x 19" x 14" /9 lbs
900 Dimensions/Net Weight	1.75"x19"x12.25"/13 lbs

### MULTICOUPLER UNIT (MCU)



TTA will function up to 70°C without shutting down however, the specifications are not guaranteed outside the rated temperature range.

### OPTIONAL PRODUCTS

Model Numbers	Description
89-83F-03-03	792-806 MHz, 3 MHz Bandwidth Preselector
89-83F-03-06	792-806 MHz, 6 MHz Bandwidth Preselector
89-83F-03-09	792-806 MHz, 9 MHz Bandwidth Preselector
89-83F-03-14	792-806 MHz, 14 MHz Bandwidth Preselector
89-86A-03-03	806-824 MHz, 3 MHz Bandwidth Preselector
89-86A-03-05	806-824 MHz, 5 MHz Bandwidth Preselector
89-86A-03-10	806-824 MHz, 10 MHz Bandwidth Preselector
89-86A-03-15	806-824 MHz, 15 MHz Bandwidth Preselector
89-86A-03-18	Receive Multicoupler, 8 Port Expansion Kit
75-83K-01	Expansion Kit, 16-32 Port, 792-902 MHz
75-83K-02	Expansion Kit, 16-40 Port, 792-902 MHz
75-83K-03	Expansion Kit, 16-48 Port, 792-902 MHz
91-00-123	TTA Mounting Bracket Kit



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