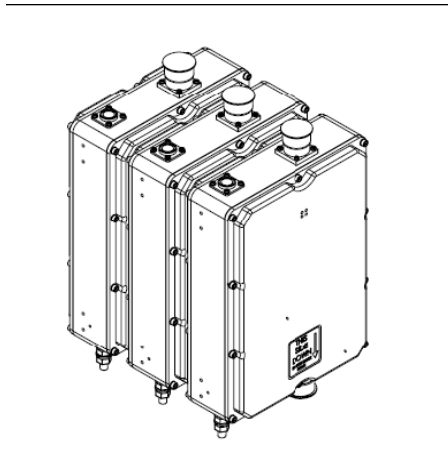


# Modular High Power Tower Top Amplifier for SMR Band

## General Information



Communication Components, Inc. Tower-Top Amplifier (TTA) system improves the sensitivity of base stations in locations where there is a significant amount of cable loss between the antenna and the base station. The SMR High Power TTA system is designed specifically for SMR/iDen systems where multiple Base Radios are combined on a single feeder line using either Autotune combiners or MCPA's. A single indoor 1U rack mount unit supports up to three diversity branches that are tower-mounted in a modular approach.

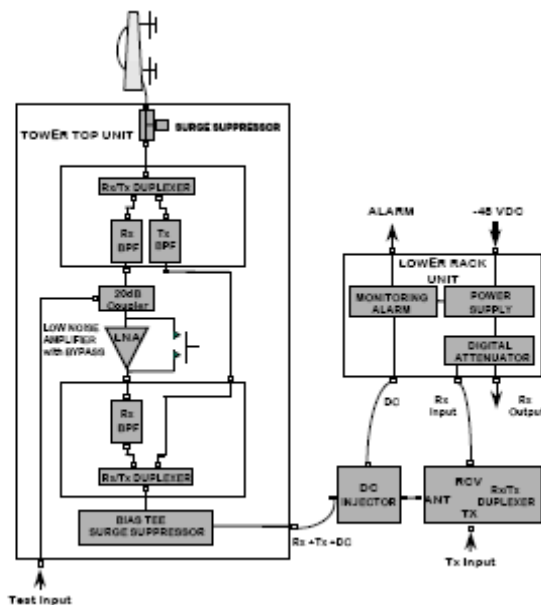
### CCI's SMR TTA Features

- Aluminum outdoor NEMA 4 Enclosure
- 7/16 DIN Connectors
- High Power Handling
- Low Noise Figure with Bypass
- Three Branch Diversity in a single outdoor package
- Built-in Lightning and surge protection
- Built-in Test port

## Technical Description

The TTA system consists of two main blocks, outdoor tower mount units and a single indoor rack mount unit. The modular tower mount units are moisture proof IP55 enclosures containing low noise amplifiers, bypass circuitry, highpower duplexers, lightning surge protection and bias tee's for each diversity branch. Up to three units can be co-mounted on the tower structure to support three-branch diversity systems. The high power duplexers have been designed specifically for high-density sites where multiple Base Radios (BR's) are being combined using either low-loss Autotune Combiners or Multi-Channel Power Amplifiers (MCPA's). The use of these combining schemes versus traditional hybrid combiners produce significant power peaks that can damage other TTA systems and cause failure. The indoor unit is housed in a single 1.75" x 19" rack mountable enclosure. It contains a dual redundant power supply which provides a regulated DC supply voltage on the RF coax for the tower mount amplifiers. The indoor unit provides all the monitoring and alarm functions for the TTA system. An optional indoor unit is available that offers active VSWR monitoring of the feeder line.

## Block Diagram



PRODUCTS MANUFACTURED BY: Communication Components Inc., [www.cciproducts.com](http://www.cciproducts.com)

## Tower Mount Electrical & Mechanical Specification

Receive Frequency Range	806 - 824 MHz
Transmit Frequency Range	851- 869 MHz
Rx Amplifier Gain @ 0dB Attenuation	15 dB Min
Bypass Mode Rx Insertion Loss	2.2 dB Max
Rx Passband Ripple	+/- 0.5 dB Max
System Noise Figure	1.8 dB Max
Output Third Order Intercept Point	+35 dBm Min
Input/Output VSWR	1.5:1 Max
Filter Characteristics	
Out of Band Rejection	70 dB Min. @ 851 to 878 MHz
Peak Power Handling	3 KW
Average Power Handling	300 Watts
Tx Insertion loss	0.7 dB Max
Tx Passband Ripple	+/- 0.2 dB Max
Operating Voltage	+10 - +14 VDC on center conductor coax
Fail Mode	Automatic Bypass Switching
Lightning Protection	Input & Output Surge Protection
Maximum Transient	50 kA
Multiple Strike	20 kA 10 times
Let-through Protection Voltage	2200/14 (Vpk/ mJ) <sup>3</sup>
MTBF	>500,000 Hours
Dimensions (three branches)	10.63" x9.81" x7.87"
Enclosures	IP55 Ventilated Weather Proof
Connectors	7/16 DIN
Weight (three branches)	30 lbs. Max (10 lbs per enclosure)
Mounting	Pole/Wall Mounting Bracket

## Ordering Information

### Tower Mount Unit:

Model TTA-815D-3-B-HP  
 Model TTA-815D-2-B-HP  
 Model TTA-815D-1-B-HP

### Power Distribution Unit:

PDU-815-6  
 PDU w/VSWR monitor:  
 PDU-815-6-VR

### DC Bias Injectors:

Model BT-835-N  
**DC Bias Injectors with VSWR:**  
 BT-835-DIN-VR

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3.iDEN Next Generation High Power Simplex Tower Top Amplifier (SMR Band)

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