Tower Top Amplifier System
700/800MHz
Tower Top Amplifier system (796-824MHz) for integration into the Motorola GTR800 ESS System
TTA7982-0100-10-00 & RX6996-3001-36-xxN

The TTA7982-0100-10-00 Tower Top Amplifier is a full-featured, high performance system utilizing a quadrature-coupled Low Noise Amplifier (LNA) design to improve the performance of a network site. The TTA system comprises two components; the Tower Top Amplifier (TTA), and an RX6996-3001-36-xxN Receiver Multicoupler/TTA Controller unit (RxMUX) that intergrates into a Motorola GTR800 ESS system.

TOWER TOP AMPLIFIER

The Tower Top Amplifier is designed and built for ease of mounting to varying size tower legs using commonly available fasteners with a compact and integrated precision milled high selectivity low loss preselector, reducing the TTA profile and hence tower loading. Two independent LNA's, with an auto by-pass mode and constant monitoring provide system redundancy, resilience and improved availability. Low noise linear amplifiers provide excellent Inter-Modulation (IM) performance ensuring maintained integrity of received signals across a wide signal amplitude dynamic range.

The precision milled and integrated TTA preselector provides >110dB of selectivity before the TTA LNA and RxMUX active circuitry. A comprehensive microprocessor-controlled status and fault monitoring system provides continuous monitoring and switching of the redundant LNAs.

RxMUX / TTA CONTROLLER

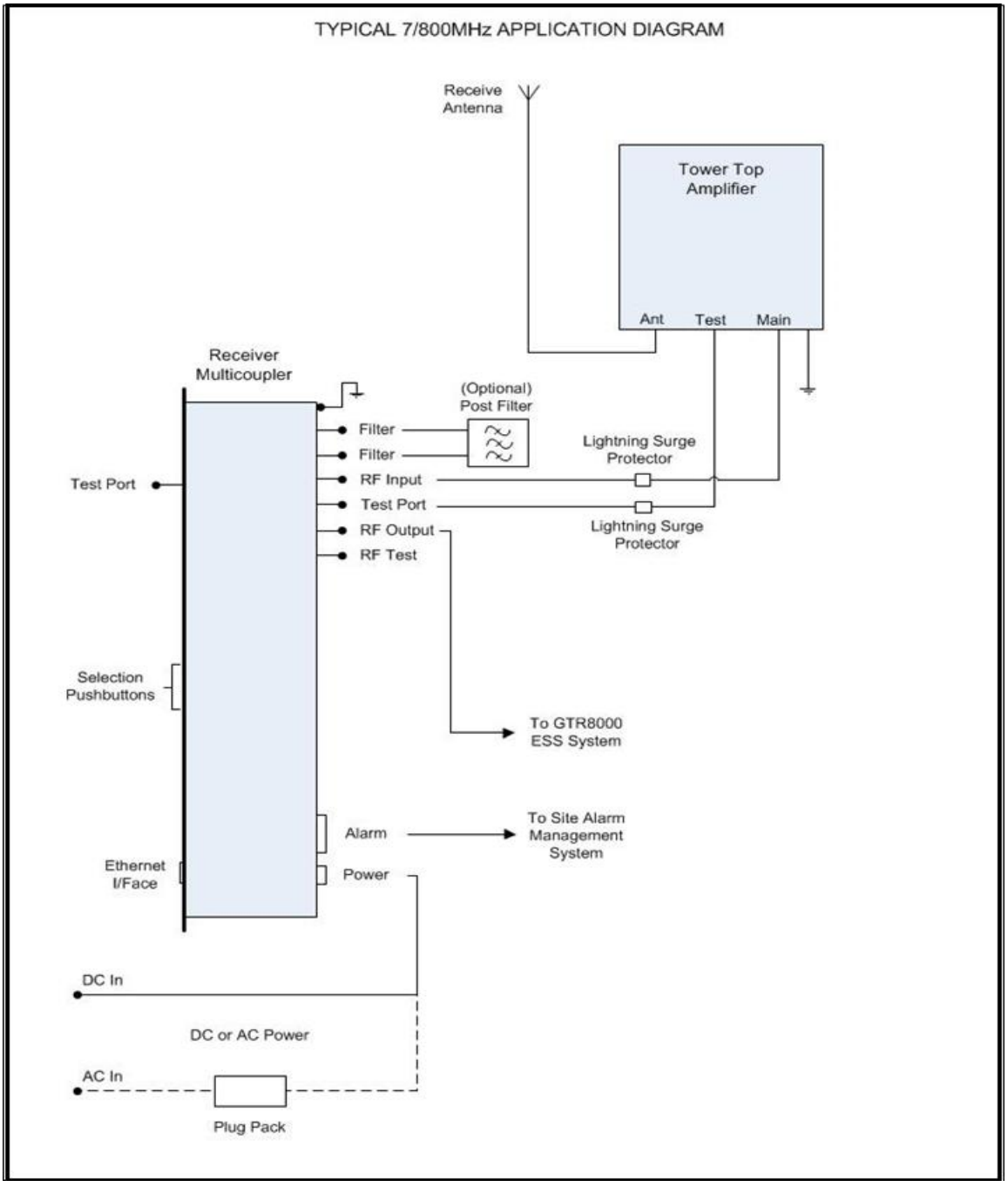
Ease of installation and configuration via user-friendly switches or an on-board web server and GUI interface, reduces installation setup time. Unique "auto-gain" feature provides an additional level of failure tolerance. Test port functionality facilitates the Motorola 5 step plan for commissioning and Performance Logging ensures that ongoing optimum system performance is measurable. Front and rear panel LED indicators and Form-C relay fault reporting with the simplicity of local or remote system status diagnostics via the Ethernet port greatly assists in determining network health and pro-active maintenance. The RxMUX features selectable in-line Post filter connections to facilitate additional

Features

- Integrated precision milled pre-selector filter in TTA
- TTA selectivity (>110dB) prior to all active circuitry
- Redundant TTA quadrature LNA circuits
- Extensive circuit monitoring and alarm management
- Test Ports and Functionality supports Motorola 5 Step Plan
- Convenient RxMUX front panel controls
- User-friendly webserver Graphical User Interface (GUI)
- Auto-Gain and Auto-Changeover modes
- Compact and light weight TTA for minimal tower loading
- Form-C contacts for fault reporting through an alarm management system
- 12VDC, 24VDC, 48VDC or 90-264VAC versions available
- Designed to interface to a Motorola GTR800 ESS System

MANUAL ATTENUATION SWITCHES

REAR VIEW



TTA UNDER VIEW

Rx MULTICOUPLER / TTA CONTROLLER FRONT VIEW

REAR VIEW

System Specification

Specifications:	TTA7982-0100-10-00 & RX6996-3001-36-xxN
Frequency Band	700/800MHz
Frequency Range	796-824MHz
Preselector Selectivity	>110dB @ 776MHz, >110dB @ 851MHz
Amplifier (LNA) Type	Quadrature
TTA System Net Gain	Adjustable via Switches or webserver GUI
Number of RF Outputs	1
System Noise Figure	<3.5dB (note 1)
Test Port	Included
Isolation of Test Port	30dB +/-2dB
50ohm Termination Testing	Included
Bypass Test Mode	Included
Net Weight	TTA / RxMux 12lbs
Ship Weight	TTA / RxMux 17lbs

Note 1. Noise figure takes into account 6dB cable loss between TTA and RxMUX

Available Options

- Optional 12, 24 or 48VDC & 90-264VAC
- Post Band Pass Filters - wide range available

Tower Top Amplifier

Specifications:	Model TTA7982-0100-10-00
Frequency Band	700/800MHz
Frequency Range	796-824MHz
Preselector Selectivity	>110dB @ 776MHz, >110dB @ 851MHz
Amplifier (LNA) Type	Quadrature
Redundant LNA	Yes
Gain	25dB (typ)
LNA Noise Figure	<1.5dB (1.2dB typ.)
3rd Order IIP	>15dBm
Return Loss (All Ports)	>14dB
Test Port	Included
50ohm Termination Testing	Included
Bypass Test Mode	Included
RF Connectors (All Ports)	N-type (female)
Power Requirements	Power derived from "Main" port coaxial cable
Lightning Protection	Integrated in unit (20kA IEC 61000-4-5 8/20uS)
Operating Temperature	-22°F to 140°F / -30°C to +60°C
Extended Operating Temperature	-22°F to 158°F / -30°C to +70°C
Mounting	Universal bracket to suit hose clamps, bolts, U-bolts (316 S/Steel)
Enclosure	IP-rated NEMA-4 Weather Resistant Housing
Weight	8.5lbs (incl mounting bracket / excluding fasteners)
Dimensions (W x H x D)	9.8" x 6.3" x 3.55" (TTA Only) 9.8" x 10.1" x 4.7" (with Universal Brackets)

Receiver Multicoupler / TTA Controller

Specifications:	RX6996-3001-36-xxN
Frequency Range	698-960MHz
Number of RF Outputs	1
Number of RF Test Outputs	1
Expansion Port	No
Net Gain	-10dB (Total system gain: 8dB)
Amplifier Type	Quadrature
Amplifier Noise Figure	<2.5dB (1.9dB typ.)
Amplifier OIP3	>45dBm (48dBm typ.)
RF Port Return Loss (All Ports)	>14dB
Main and Test Port Connectors (rear)	N-type (female)
RF Outputs Connector (rear)	N-type (female)
RF Test Connector	N-type (female)
In-line Post Filter Connectors (rear)	BNC-type (female)
Test Port (front)	BNC-type (female)
Input (Reserve) Gain Attenuator	15dB (in 1dB steps)
Lightning Protection	Internal surge protection to supplement building entry point protection
Alarms Contacts	Form-C contacts (n.o./n.c. 1A 60V)
Alarm Connector	3pin Phoenix style (locking)
Communications	TCP/IP Ethernet
Communications Connector	RJ45
Indicators	Front and Rear Panel LEDs
Power Requirements	12VDC nom. (10-18VDC floating) @ 2.5A (typ.)
AC Power Supply Option	Supplied with 90-264VAC 50/60Hz PSU
DC Connector	2pin Pheonix style (locking)
Earthing	M6 Stud and M5 Screw provided
Operating Temperature Range	32°F to 122°F / 0°C to +50°C
Mounting	1RU 19in Rack Mount
Weight	4.7lbs
Dimensions (W x H x D)	19" x 1.75" x 5.9"

Ordering information

Motorola E-CAT Number	RFI Part Number	Description
DSTA798201001000	TA7982-0100-10-00	TTA-01, 796-824MHz (TTA only - No RMC)
DSRX6996300136ACN	RX6996-3001-36-ACN	RMC03, 1 PORT CMU WITH TTA CONTROL, 698-960MHz, 110-240VAC
DSRX699630013648N	RX6996-3001-36-48N	RMC03, 1 PORT CMU WITH TTA CONTROL, 698-960MHz, -48VDC

