

THPRM NAC 850MHz 60W GMSK 45W EDGE

**Model: RF100739(RM2 850)
/NTQA65JD
Doc: PT08004**

Operation Instruction

Date: September 30, 2008
Version. 1.0

Ref# : FCC ID: S8L-100739THPRM & IC:2237F-100739THPRM

1. Introduction

This document presents description of the Andrew Corporation 850 NAC Band RM2 Power Amplifier (60W GSMK / 45W EDGE). The RF100739 (RM2 850) amplifier is a medium power, RF amplifier intended to provide signal amplification. The RF100739 (RM2 850) amplifier is compatible with GSM and EDGE air interfaces operating in U.S. domestic cell sites where FCC compliance is mandatory.

The RF100739 (RM2 850) power amplifier includes 3 lines of RF amplification (“TX paths”). Each TX path is capable of supporting both GSMK and EDGE standards on the NAC band (869 MHz to 894 MHz). Each TX path is rated for 45W output with EDGE signal, and 60W with GSMK signal.

2. RF100739 (RM2 850) Specifications

The RF100739 (RM2 850) provide linear amplification of single-carrier signals in the NAC frequency band. The RF100739 (RM2 850) have the following specifications for each TX path:

Parameter	Specification
Operating RF Band	869-894MHz
In band RF gain	44 dB
Input signal types	GSM or EDGE single carrier
Input DC Power	28 VDC +/-1%, nominal
DC voltage input range	26VDC to 30.5VDC
Rated Output Power @ 28VDC +/-1% & GSMK signal	60W average
Rated Output Power @ 28VDC +/-1% & EDGE signal	45W average
DC-Power Consumption @ GSMK signal & rated output power	170W (29% Power efficiency)
DC-Power Consumption @ EDGE signal & rated output power	150W (20% Power efficiency)
Physical dimensions	11.5” x 16.15” x 2.4”
Weight	< 12.13lbs
Cooling technique	External cooling when the Amplifier is placed in the customer frame.
Temperature Range	-5°C to +60°C (heat sink inlet air), meeting specifications.

Table 1 RF100739 (RM2 850) Specifications

3. Functional Blocks:

The Andrew RF100739 (RM2 850) includes 3 lines of RF amplification. Each of them contains the following functional areas:

- Power Amplification Line-Up

This block gives to the unit its specified gain through 4 amplifier stages: 1 pre-amplification stage, 1 medium power stage, and a final 2-stages power transistor. This power final stage brings the signal to its desired high power level. It is the heart of the RF section of each TX path. The unit power, linearity and efficiency essentially come from this block.

- Power Conversion and Conditioning Circuit

This block is made of a DC/DC converter and various voltage adapters to do the interface between the customer supply network and the internal functions of the unit. It provides all the voltages and signal interface to the internal blocks of the unit.

- Monitoring and Control Circuit

Several internal features enable to monitor and control the internal parameters. The signals provided by these circuits could have different nature (current image, voltage image, RF power image, temperature image). All these signals, transmitted through analogical lines, are exchanged with the customer controller circuit through an interface connector (common for the 3 TX paths). It is critical that signals are not interfering prior sent to the customer controller circuit. It means that one transmitting TX must not interfere with other TX analogical lines.

4. **Block Diagram:**

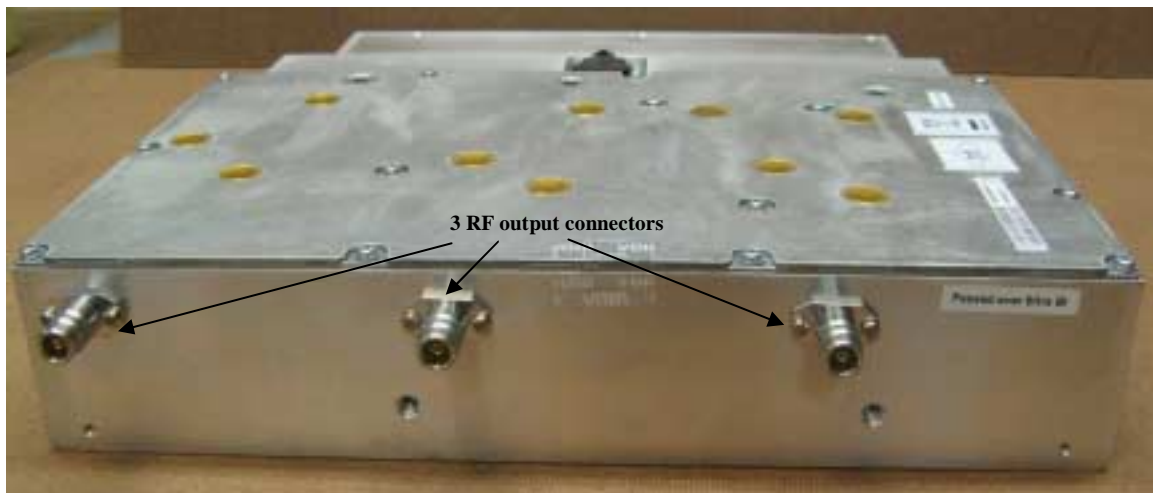
See attachment

5. Inputs and Outputs:

The amplifier is powered from a DC supply voltage, which can range from 26VDC to 30.5VDC. The DC power is brought into the amplifier through a header right angle, 2 pins connector, located on the amplifier motherboard.

A 44 pins connector, also located on the amplifier motherboard, is used for analogical lines enabling monitoring and control. This connector is used both during factory tests and at the system level by the customer .

The 3 RF input signals are brought into the amplifier through 3 female SMA type connectors located on the amplifier motherboard. The 3 amplified RF signal are brought out of the amplifier through 3 N type connectors. They are located on the face plate of the amplifier.



RF100739 (RM2 850) Face plate view

6. Control System:

The RF100739 (RM2 850) power amplifier is controlled by the customer logic board, which builds control signals and accepts monitoring signals. This additional board is also responsible for the whole transmitter external digital / analogical interfaces. A controller is used at system level to control the amplifier alarm system (by monitoring temperature and currents for each TX paths) and to compensate the environmental drift (ambient temperature).

7. Installation and Operation Set-Up

The RF100739 (RM2 850) is easy to operate and use, only requiring a special cables for DC power and interface connection into the customer frame. RF input and output connections are done with industry standard SMA and N connectors.

8. FCC Statements:

FCC ID: S8L-100739THPRM

This device complies with Part 2, 15 & 22 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

IC Information:

Trade Name: ANDREW CORP, Tri-High Efficiency Power Amplifier THPRM850

Model No.: RF100739

IC: 2237F-100739THPRM

This device complies with RSS-131, RSS-102 of the IC Rules.

Warning

Changes of modifications not expressly approved by the manufacturer could void the user's authority to operate the equipments.