

## 1. Features

- ▶ High Performance
- ▶ High Reliability
- ▶ RoHS Compliant

## 5W 405MHz HPA

Part No: RMA405 37 18.5 18V01

Date: August 21, 2014

Revision No: 02

## 2. Electrical Specifications

Parameter	Specifications				Remark
	Min	Typ	Max	Unit	
Frequency Range	340		470	MHz	
Operating Power (RMS)	37			dBm	5W COFDM=37dBm
Operating Power (Saturated)	45			dBm	5W COFDM=37dBm + 8dB pk~mean=45dBm
Gain	17.5	18.5	19.5	dB	The aim is to run MINIMESH at no more than 100mW.
Gain Flatness		±1		dB	
Gain out of band	-30			dB	The RF gain out of band shall not extend beyond +/-30% of band edges.
Input Return Loss	10	12		dB	
Output Return Loss	10	12		dB	
Shoulder Performance	27	30		dBc	At 5W RMS output power measure at $F_c \pm (BW/2)$ .
Harmonic performance	50	60		dBc	2nd harmonic performance shall be better than 50dBc min across all frequencies.
Spurious emissions	- 36 dBm for $9 \text{ kHz} \leq f < 30 \text{ MHz}$ - 36 dBm for $30 \text{ MHz} \leq f < 1 \text{ GHz}$ - 30 dBm for $1 \text{ GHz} \leq f < 26.5 \text{ GHz}$			dBm	The reference bandwidth in which the spurious limits apply is independent of the BW and only depends on the frequency range: <ul style="list-style-type: none"> <li>• 1 kHz between 9 and 150 kHz,</li> <li>• 10 kHz between 150 kHz and 30 MHz,</li> <li>• 100 kHz between 30 MHz and 1 GHz,</li> <li>• 1 MHz above 1 GHz.</li> </ul>
PAR of signal		8	10	dB	Enter the peak-average power ratio of the signal being used if known
Signal Type		COFDM			
Number of Carriers					Varies based on the BW of the modulation
EVM		3.5	5	%	must be proven in both TDD and non TDD modes
Input Voltage Range	10	12	18	VDC	
DC Current Draw (PA ON)		3.5		A	There shall be no transient current spike that exceeds 2* RMS DC current.
DC Current Draw (PA OFF)			30	mA	
Efficiency	12			%	
Impedance		50		$\Omega$	

### 3. Protection & PA Control Specifications

Parameter	Specifications	Remark
PA Control	TTL On/Off Control High Speed On /Off Control	TDD rise time must be less than 5uS. Logic High=Enabled, Logic Low=Disabled. TTL Logic high must be >2.5V
VSWR	If have 5:1 VSWR PA shut Down	
Monitoring	TTL/ Analog Voltage	

### 4. Environmental Specifications

Parameter	Specifications	Remark
Operating Temperature Range	-10~50°C	Temperature range measured at PA base plate
PA Shutoff Temperature	80°C	Auto Recovery @70°C
Cooling	Base plate conduction	Heat sinks are required for most amplifiers, please contact factory for heat sinking and forced air cooling options
Altitude	0~3000ft	

### 5. Mechanical Specifications

Parameter	Specifications	Remark
Dimensions (L x W x H)	190 x 102 x20mm	
RF Connectors In/Out	SMA(F)	
Monitoring/DC Connectors	Filter cons	TTL,PSU,GND