

1. Features

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

4W UMTS2100 HPA

Part No: RMA2140 36 43 28V01

Date: April 10, 2014

Revision No: 00

2. Electrical Specifications

ITEM		Specification	Remark
Operating Frequency		2110 ~2170MHz	
Output Power (Linear)		36.0dBm Min	
Output power @1dB compression point		47dBm	P1dB
Small Signal Gain		42dB Min, 43dB Typ. 44dB Max	
Broad Band Gain		36dB max	100 to (Lower Freq.-50MHz) and (Higher Freq.+50MHz) to 2.7GHz.
Small Signal Gain Flatness		1dBp-p Max	Over temperature
Gain Variation Over operation Temp		±1 dB	
Spurious emission		-20dBm Max	1. With CW tone 2. Without input signal 3. Including IMD5 products with 2 tone testing.
WCDMA (HSPA+) @ 35.5dBm output	EVM	3%	Test Model-1 with 64DPCH, One Carrier, PAR=10.2dB@ 0.01% Probability on CCDF
	Frequency Error	±0.01ppm	
	Spectrum Emission Mask	Per ETSI TS 25.106. Category B.	
	ACPR	Per ETSI TS 125 106 V10.2.0 (2012-07)	
2nd Harmonic		- 40dBc	
Input / Output VSWR		1.2:1Typ , 1.5:1Max	S11 / S22
Noise Figure		10 dB Typ 15 dB Max	NF shall not be changed With or without input signal.
Turn-on time		300 mS	From DC power On or Enable
Forward (FWD) Power Monitoring: @33dBm CW 1FA 100mv/dB		3.95V Min , 4V Typ ,4.05V Max	True RMS detector. See detector table.
Reverse Power Monitoring:		True RMS detector	Used only as internal but must be the same behavior as FWD.
Operating Voltage		27V Min , 28V Typ ,30V Max	
No Damage Supply Voltage		32V	
Supply Current @ Pout = 36dBm / 1CW		1.4A Max	
Supply Current @ Pout = 38dBm / 1CW		1.7A Max	
Supply Current @ Pout = 10W / 1CW		2A Max	

2. Mechanical Specifications

ITEM	Specifications	Remark
Dimensions (L x W x H)	130x120x25mm	
Weight	0.6kg	
RF Connectors In/Out	SMA – Female	
Monitoring/DC Connectors	D-sub, 9 Pins, 4 – 40 screw	
Cooling	External Heat sink	Not included

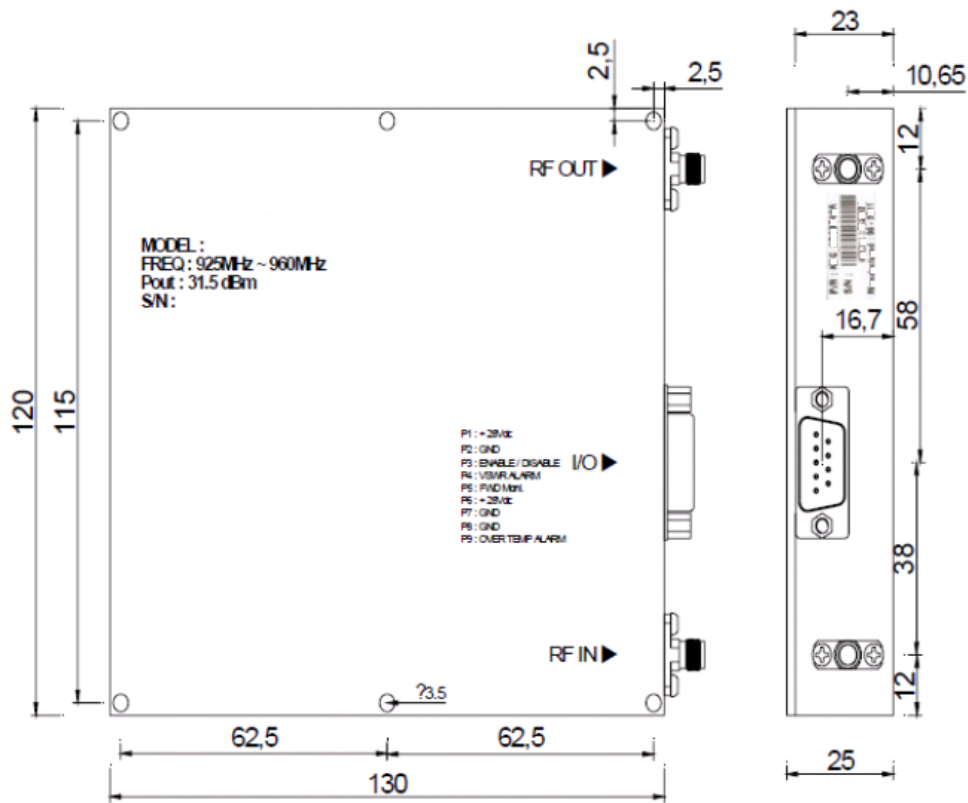
3. Environmental Specifications

ITEM	Specification	Remark
Case Temperature for operating without damage	-20 ~ +60°C	
Storage Temperature	-40 ~ +85°C	
Relative humidity w/o condensation	95%	
MTBF	220000Hr (25 years)	

4. Inter-Connection Description

Pin No	Description	Specifications	Remark
1	+28V DC Input	Capacitance allowed on the 28V pin is 750 μ F max (750 Micro-Farad).	
2	GND		
3	Enable: Low Disable : High or Open		
4	VSWR Alarm	Alarm “High” at VSWR event	See table
5	Forward Power Detector	4.0V @ 33dBm CW 1FA, 100mv / dB	
6	+28V DC Input	See pin 1	
7	GND		
8	PA Shut Down Indicator	Alarm “High” PA Shut Down	Open Drain
9	Over Temperature Alarm	Alarm “High” at Over temperature event –measured on PA case.	See table

5. Mechanical Drawings



3. Protection & PA Control Specifications

ITEM	Shut Down	Auto Recovery	Specifications
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#102-704, SK Ventium, Bldg, 522, Dangjung-Dong, Gunpo-Si, Kyunggi-Do, Korea. PIN: 435-776
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High Temp	o	o	Alarm : +85℃ ~ +90℃ Shutdown : ≥ +90℃ Auto-recovery : ≤ +75℃		
Over PWR	o	x	1. Alarm ≥ 41.0dBm ±0.5dB 2. Shutdown ≥ 42.0dBm ±0.5dB		
VSWR	o	o	※ : If have PAU output Power is 25dBm, VSWr Alarm Working		
			1. Alarm(Shutdown) : 5.0 ~ 7.0dB		
			구분	R.L<5dB	5dB≤R.L≤7dB
			Alarm	Occur	Occur/None Occur
			▶ Shutdown condition : Output Cable Open Test Up to Return Power 30dBm±1 -> Shutdown. Under 30dBm -> None Shutdown. 2. Auto-recovery : After 1minute Shutdown, PA Check shut down level 3times during 1m40s If have Shutdown, PA need to enable control by User.		
DC Fail	o	o	1. Alarm(Shutdown) : 19.5V (±0.5V) , 31.5V (±0.5V) 2. Auto-recovery : 20.5V (±0.5V) ~ 30.5V (±0.5V)		
ALC	x	x	ALC Start : If have over output power, PA will be Over Power Alarm occur. ALC WORKING OUTPUT POWER: 41.0dBm ±0.5dB (10dB Range)		

4. Environmental Specifications

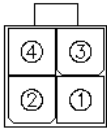
Parameter	Specifications	Remark
Operating Temperature	-40℃ ~ +85℃	
Storage Temperature	-50℃ ~ +95℃	
Relative Humidity	0 ~ 90% RH (non-Condensing)	
MTBF (Mean Time Between Failure)	300,000 hours @ 25℃ (Ambient Temperature)	

5. Mechanical Specifications

Parameter	Specifications
Physical Dimension	216.4mm x 151.5mm x 34.5mm (W x D x H) @2T Size



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Power Connector Type & Pin configurations	LAD1140-04(X) 1 : GND 2 : GND 3 : +28Vdc 4 : +5.6Vdc	 (HPA)																																																																		
I/O Signal Connector Type	SMAW200-12C <table border="1" data-bbox="568 472 1495 1003"> <thead> <tr> <th>Pin No.</th> <th>Pin Name</th> <th>I/O</th> <th>Signal</th> <th>Discription</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>PAU_UART_TXD</td> <td>O</td> <td>RS232</td> <td>TX Data</td> </tr> <tr> <td>2</td> <td>PAU_UART_RXD</td> <td>I</td> <td>RS232</td> <td>RX Data</td> </tr> <tr> <td>3</td> <td>PAU_Enable</td> <td>I</td> <td>TTL</td> <td>Low : Enable High : Disable</td> </tr> <tr> <td>4</td> <td>Reserved</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>5</td> <td>PAU_RST</td> <td>I</td> <td>TTL</td> <td>If have Low signal over 2ms PA will be Reset</td> </tr> <tr> <td>6</td> <td>GND</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>7</td> <td>GND</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>8</td> <td>GND</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>9</td> <td>N.C</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>10</td> <td>N.C</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>11</td> <td>N.C</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>12</td> <td>Reserved</td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table>			Pin No.	Pin Name	I/O	Signal	Discription	1	PAU_UART_TXD	O	RS232	TX Data	2	PAU_UART_RXD	I	RS232	RX Data	3	PAU_Enable	I	TTL	Low : Enable High : Disable	4	Reserved	-	-	-	5	PAU_RST	I	TTL	If have Low signal over 2ms PA will be Reset	6	GND	-	-	-	7	GND	-	-	-	8	GND	-	-	-	9	N.C	-	-	-	10	N.C	-	-	-	11	N.C	-	-	-	12	Reserved	-	-	-
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