

## GENERAL DESCRIPTION

The NWHPRA021N is a high-power receiver assembly (HPRA) offering 34dB gain and 4dB noise figure over the 20MHz to 1000MHz band. The HPRA includes SPDT switch, Limiter, LNA and output power detector. A digital 16dB gain control feature is included.



## FEATURES

- 70W Input power handling capability
- Output power limiting protection for user's receiver

## APPLICATIONS

- Communication
- Defense
- Industrial

## ELECTRICAL PARAMETERS

Parameter	Unit	Min	Typ.	Max	Remarks
Operating Frequency Range (BW)	MHz	20		1000	
Gain	dB	32		36	
Gain flatness	dB			±1.8	
Gain setting (Gmin to Gmax)	dB	18.5		34.5	
Gain setting step size	dB		1		Digital attenuator controlled externally through discrete lines.
Number of Gain setting control lines	-		5		5 discrete bits
Noise figure at Gmax (zero attenuation)	dB				
20MHz to 30MHz				4	@ 25°C
				6	@ 70°C
30MHz to 40MHz				3	@ 25°C
				4.5	@ 70°C
40MHz to 1000MHz				2.5	@ 25°C
				3.5	@ 70°C
Input power handling	W		70		Includes Limiter
Output power	dBm			-10	Output power limiting function included
Input power	dBm		-52		
Limiter recovery time	µs			0.5	

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Parameter	Unit	Min	Typ.	Max	Remarks
Gain Control line interface			TTL		Low" (0-0.8V) "High" (2.0-5.0V) TTL current $\pm$ 1.3mA max.
RF Switch control lines			1 discrete bit		TX Path: "Low" (0 - -0.8V) RX Path: "High" (-2.0V - -5.0V)
RF Switch isolation	dB				
ANTENNA to Tx (Rx ON)		20			
ANTENNA to Rx (Tx ON)		50			
RF Switch Insertion Loss	dB				
Tx to ANTENNA (Tx ON)				-1	
RF Switch speed	$\mu$ s				
Tx-ANTENNA from OFF to ON			160		
Tx-ANTENNA from ON to OFF				10	
ANTENNA-Rx from OFF to ON			250		
ANTENNA-Rx from ON to OFF				5	
ANTENNA Input Return Loss	dB			-12	
Tx Input Return Loss	dB			-12	
Rx Output Return Loss	dB			-16	
DC Supply Voltage	V		12		
DC Supply Current	A		0.25		

## MECHANICAL AND ENVIRONMENTAL PARAMETERS

Parameter	Unit	Min	Typ.	Max	Remarks
Operating Temperature Range	$^{\circ}$ C	-20		+70	
Storage Temperature Range	$^{\circ}$ C	-55		+100	
Dimension W x H x D	Inch/mm		5.00 x 1.16 x 4.00 / 127.0 x 29.5 x 101.6		Including mounting feet
Weight	Grams		530		
MTBF	Hours		400,000		@30 $^{\circ}$ C operation
Transmitter Input	-		N-Female		
Antenna Port	-		N-Female		
Receiver Output	-		SMA		
DC Power and Control Connector	-		1924169		

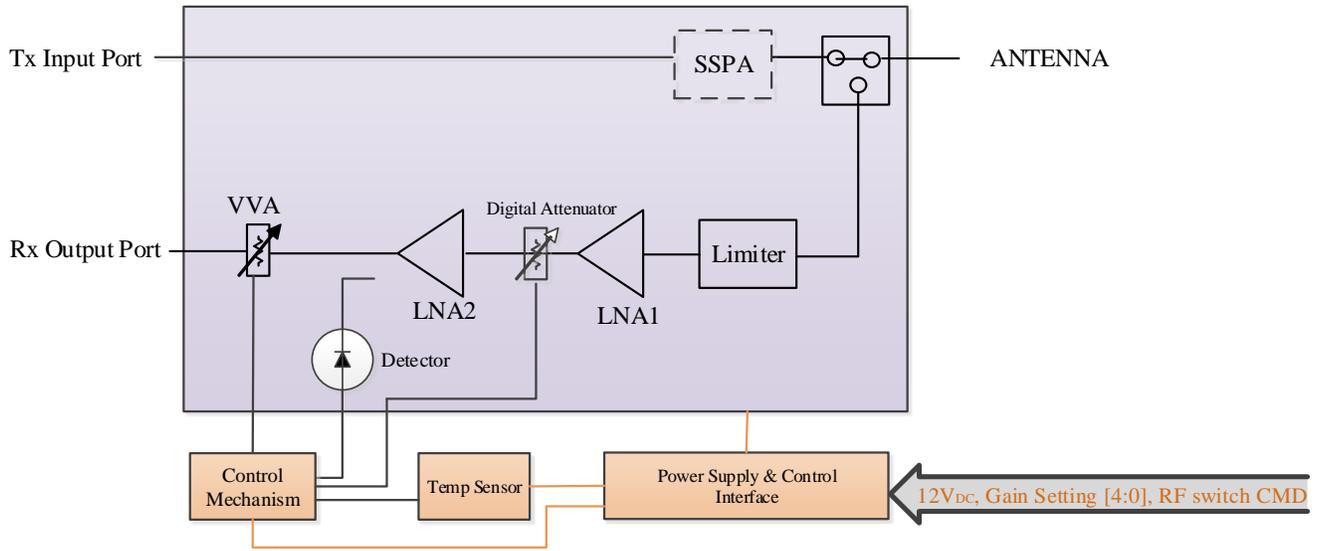
Notes:

Specifications subject to change without notice

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**Figure 1: HPR block diagram**

**Table 1: Power and Control Connector**

PIN ID	Signal	Comment
1	INPUT +12V	Input Voltage +12V
2	GND	Ground
3	GAIN_SET_[0]	Gain Setting Control Pin 0
4	GAIN_SET_[1]	Gain Setting Control Pin 1
5	GAIN_SET_[2]	Gain Setting Control Pin 2
6	GAIN_SET_[3]	Gain Setting Control Pin 3
7	GAIN_SET_[4]	Gain Setting Control Pin 4
8	GND	Ground
9	RF_SW_CMD	Control for RF switch
10	GND	Ground

## OUTLINE DRAWING

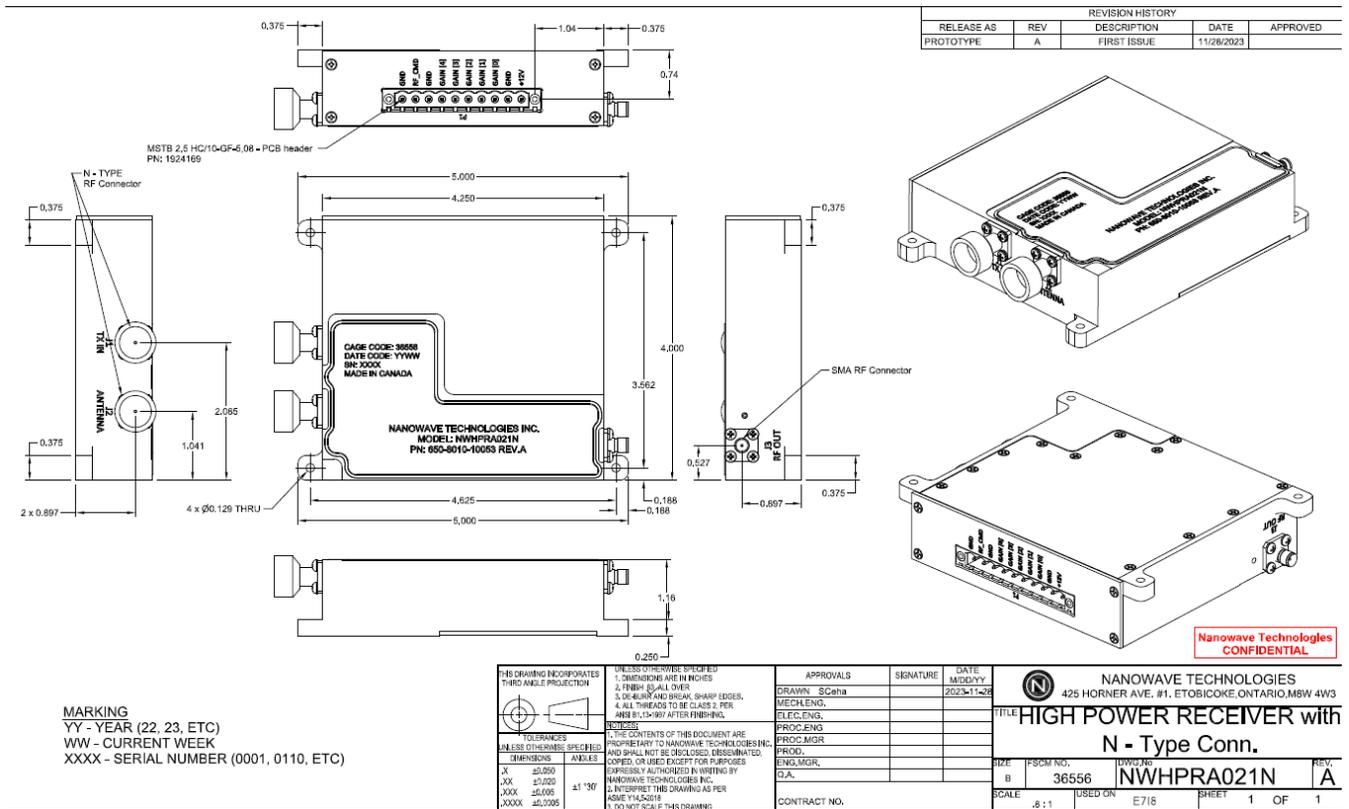


Figure 2: NWHPR021N Outline Drawing

## ADDITIONAL FEATURES

- Marking: The unit is marked with Manufacturer Part Number, Date Code, and Serial Number.
- All plating and painting is RoHS compliant

For further information please contact NANOWAVE Technologies Inc. at [sales@nanowavetech.com](mailto:sales@nanowavetech.com), or call at (+1) 416-252-5602.