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A11 Amplifier

Technical Product Data

Features

- **Excellent Noise Figure**
F < 1.8dB
- **Excellent Gain**
G = 30dB
- **Passes GPS, Galileo & GLONASS L1/L2**
- **0dB to 30dB Variable Gain Option Available**



Description

Designed with the thin link margins of satellite navigation systems in mind, the A11 Amplifier is a single stage gain block that covers the GPS, Galileo, and GLONASS frequencies. The device features 30dB of gain and a noise figure of less than 1.8dB. The product may be powered externally with an AC input voltage option, a DC input option, or since the product consumes less than 16mA, it may be powered by the GPS receiver's antenna voltage output. Regardless of the input power configuration, the A11 can provide a DC voltage output to power an active GPS antenna.

Electrical Specifications, Operating Temperature -40 to 85°C

Parameter	Conditions	Min	Typ	Max	Units
Freq. Range	IN – OUT, IN/OUT-50Ω	1		2	GHz
In/Out Imped.	IN, OUT		50		Ω
Gain	IN – OUT, IN/OUT-50Ω				
1227MHz		30	32	33	dB
1575MHz		30	32	33	
Variable Gain Opt.	IN – OUT, IN/OUT-50Ω				
1227MHz:					dB
Max Gain		28	30	32	
Min Gain:		-4	-3	-1	
1575MHz					
Max Gain		28	30	32	
Min Gain:		-2	0	1	
Input SWR	OUT Port - 50Ω			2.0:1	-
Output SWR	IN Port - 50Ω			2.0:1	-
Noise Figure ⁽⁴⁾	IN – OUT, IN/OUT-50Ω			1.8	dB
Gain Flatness	L1 – L2 , IN – OUT, IN/OUT-50Ω			2	dB
Group Delay Flatness	$\tau_{d,max} - \tau_{d,min}$, IN – OUT			1	ns
Reverse Isolation	OUT – IN	30			dB
AC IN	110	Wall Mount Transformer ⁽³⁾		110	VAC
	220/240	Wall Mount Transformer (Various Intl. plug types available) ⁽³⁾		230	VAC
DC IN	Pass DC	Non-Powered Configuration, DC Input on OUT port		3	VDC
	Powered	Powered, Mil. Conn. Or Quick Connect Option		3 ⁽¹⁾	28 ⁽²⁾ VDC
Device Current	Current Consumption of device, excludes Ant. Cur.			16	mA
Ant/Thru Current	Pass DC	Non-Powered Configuration, DC Input on OUT port			250 mA
	Powered	Powered, Mil. Conn. Or Quick Connect Option			Note 3 mA
Max RF Input	Max RF input without damage			10	dBm

Notes:

- DC IN for powered option must be 2V greater than desired DC Voltage Out
- Maximum DC IN is 35V when 1275B Powered option is included
- Maximum combined DC current draw out all ports of the device is a function of the DC input voltage and desired DC output voltage , according to the following:

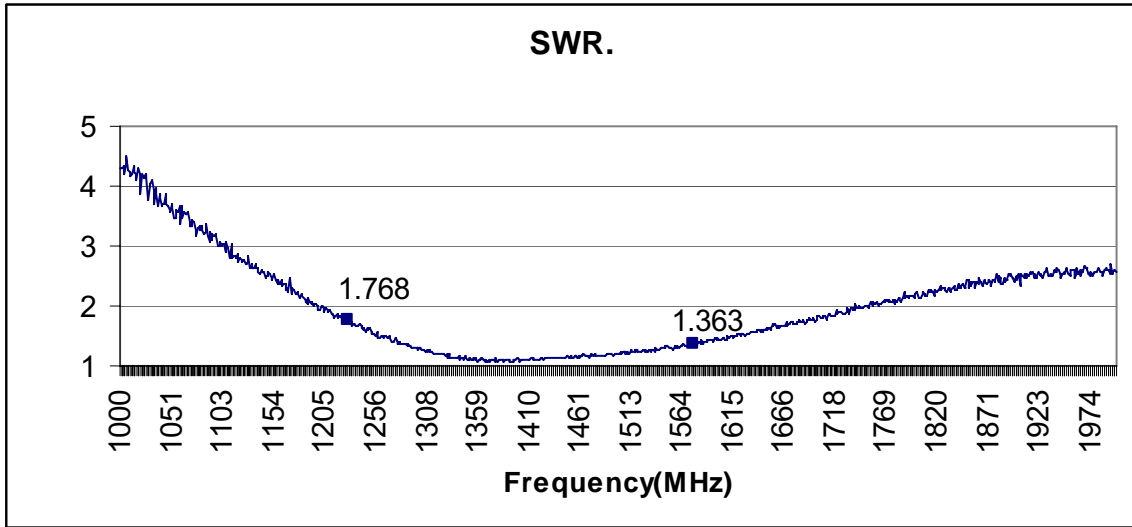
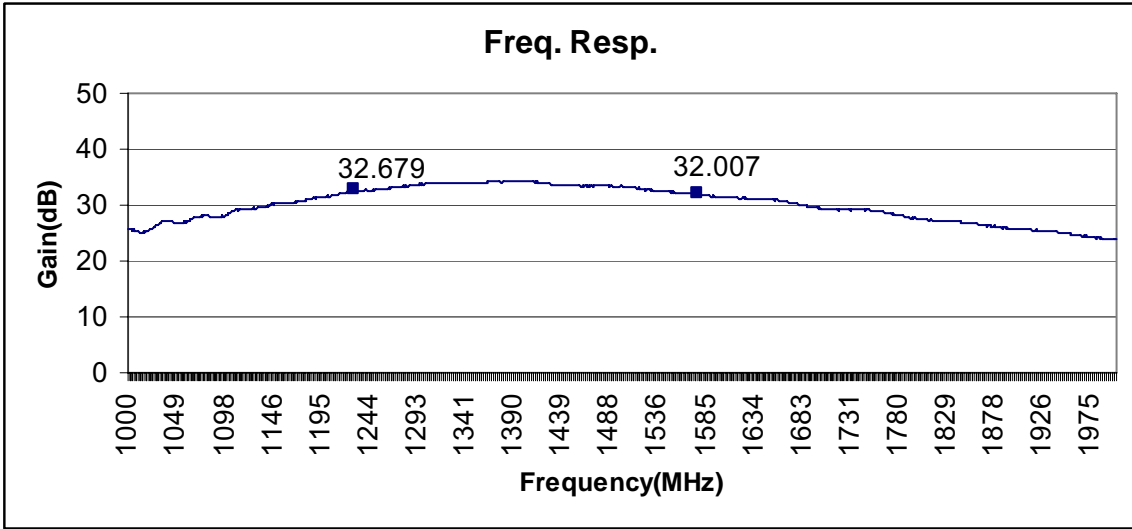
$$I_{out} \leq 1.4 / (V_{DC IN} - V_{DC OUT}) - 0.007 \text{ Amps}$$

For powered option with a wall mount transformer (Voltage Input = 110/220/240 VAC), $V_{DC IN}$ is 9V.

- Does not apply to variable gain option at any setting other than max gain

Performance Data:

A11 Amplifier





Available Options:

Power Supply Options:		
Source Voltage Options	Voltage Input	Type
	110 VAC	Wall Mount Transformer
	220 VAC	Wall Mount Transformer
	240 VAC (U.K.)	Wall Mount Transformer
	DC 5-28 VDC	Military Style Connector or w/Quick Connects
Output Voltage Options⁽¹⁾	DC Voltage Out⁽²⁾	
	3.3	
	5	
	7.5	
	9	
	12	
	Variable (3-12V)	
Custom		
RF Connector Options:		
Connector Options	Connector Type	Limitations
	N (Male & Female)	
	SMA (Male & Female)	
	TNC (Male & Female)	
	SMB (Female)	
	SMC (Female)	
	MCX (Female)	
BNC (Male & Female)	Performance Not Guaranteed	
Housing Options:		
Housings	Housing Type	Limitations
	Standard	None
	Mini, Tiny	Powered Option Not Ava. Powered Option Not Ava. Connectors Not Available: N, TNC, BNC
Port Options:		
Pass DC ⁽¹⁾	IN Port Passes DC	
DC Blocked ⁽¹⁾	IN Port Blocks DC	

Notes:

1. With Powered Option, any or all RF ports (input or output) can be DC Blocked or can pass the powered DC voltage
2. Maximum combined DC current draw out all ports of the device is a function of the DC input voltage and desired DC output voltage , according to the following:

$$I_{out} \leq 1.4 / (V_{DC IN} - V_{DC OUT}) - 0.007 \quad \text{Amps (or 250mA max)}$$

For powered option with a wall mount transformer (Voltage Input = 110/220/240 VAC), $V_{DC IN}$ is 9V.



Part Number:

A11 - AXX - P110 / 5 - SF

Product:
Standard

Custom Gain Option:
AXX – XX = Desired Gain Level
V30 – Variable Gain, 0 to 30dB
Blank – Default Gain, 30dB

Source Voltage:
P110 – Transformer,
P220 – Transformer,
P240 – Transformer,
PDC – DC w/Quick Connects
PM – Military Connector (User supplies DC)

Output Voltage:
3.3, 5, 7.5, 9, 12, XX, V – Denotes Output Voltage
(XX – custom output voltage, V – variable)

Connector Options:
NM – N, Male
NF – N, Female
SM – SMA, Male
SF – SMA, Female
TM – TNC, Male
TF – TNC, Female
BM – BNC, Male
BF – BNC, Female
SB – SMB Jack, Female
SC – SMC Jack, Female