

# AT11DV Digital Variable Attenuator

## Technical Product Data



### Features

- 55 dB of Attenuation
- Easy to Use Digital Display and User Interface
- Optional RS232 Interface for ATE
- Optional Filtered L1 or L1/L2
- Optional Oscillation Detection & Prevention
- Optional Antenna Monitor & Alarm Indication
- Wireless Remote Control via Bluetooth Option



## **Description**

Ideal for Automated Test Environments (ATE), the AT11DV is a high dynamic range digital attenuator. Designed specifically for GPS applications, the AT11DV has provisions for supplying the DC voltage for the active antenna, including an optional feature for monitoring the health of the receive antenna system. The product includes additional optional features for oscillation detection and prevention, and filtering for the GPS L1 & L2 bands. The AT11DV features digital display with a user friendly menu enabling easy operation and configuration of the device. With an optional Bluetooth wireless interface also available, the AT11DV may be configured remotely when access to the system is not convenient.

Call, email ([sales@gpssource.com](mailto:sales@gpssource.com)), or visit our website ([www.gpssource.com](http://www.gpssource.com)) for further information on product options, specifications, or to receive an easy to use order sheet.

**Electrical Specifications, Operating Temperature -20 to 65<sup>0</sup>C**

Parameter	Conditions	Min	Typ	Max	Units
Freq. Range:	IN – OUT, IN/OUT-50Ω	1200		1700	MHz
Attenuation <sup>(1)</sup> 1575MHz -Max. Atten Setting -Min. Atten Setting 1227MHz -Max. Atten Setting -Min. Atten Setting	IN – OUT (Tx Ant.)	58 -1	55 0	54 +1	dB
L1 Filtered Opt 1575MHz -Max. Atten Setting -Min. Atten Setting +/- 50MHz <sup>(2)</sup> +/- 100MHz <sup>(2)</sup> +/- 300MHz <sup>(2)</sup> 1227MHz	IN – OUT, IN/OUT-50Ω;	58 -1 5 12 40	55 0	54 +1	dB
L1\L2 Filtered Opt 1575MHz -Max. Atten Setting -Min. Atten Setting +/- 50MHz <sup>(2)</sup> +/- 100MHz <sup>(2)</sup> + 300MHz <sup>(2)</sup> 1227MHz -Max. Atten Setting -Min. Atten Setting +/- 50MHz <sup>(2)</sup> +/- 75MHz <sup>(2)</sup> - 300MHz <sup>(2)</sup>	IN – OUT, IN/OUT-50Ω;	58 -1 5 12 40  56 -1 12 45	55 -0    55 0	52 +1    52 +1	dB
Input 1dB Comp.	IN – OUT, IN/OUT-50Ω	-55			dBm
Input IP <sub>3</sub>	IN – OUT, IN/OUT-50Ω	-43			dBm
Input/Output Imped.	IN, OUT Port		50		Ω
In/Out SWR <sup>(1)</sup>	Input, Output Port 50Ω			2.0:1	-
Flatness <sup>(1,3)</sup>	L1 – L2 , IN – OUT, IN/OUT-50Ω			2.5	dB
Noise Figure	IN- OUT, IN/OUT -50Ω; Max. Signal Setting			2.5	dB
DC IN	DC Input from wall mount transformer, or quick disconnects  Optional DC input on IN Port:	8  6	9	16  16	VDC  VDC

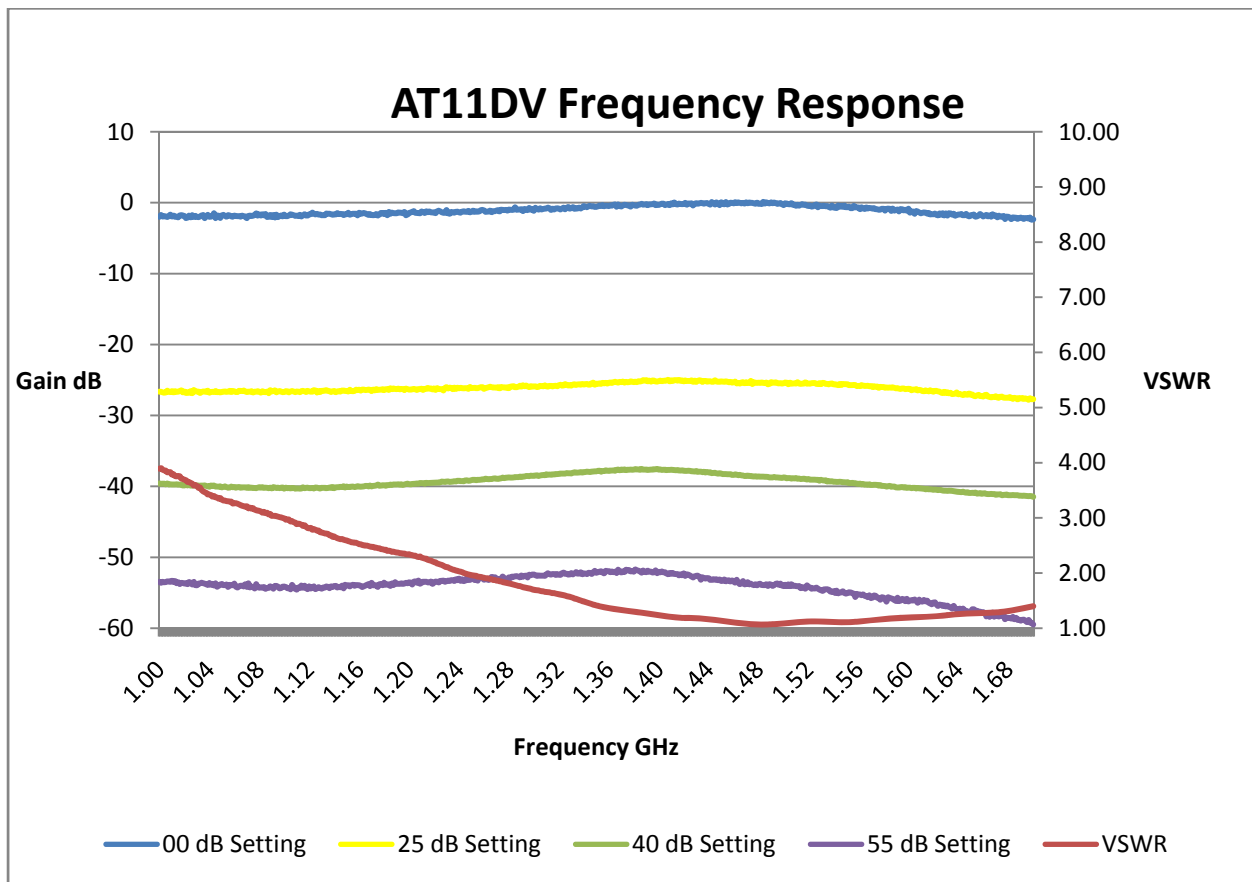
Parameter	Conditions	Min	Typ	Max	Units
Current	Attenuator Current Draw, DC Input			180	mA
Antenna Monitor <sup>(4)</sup>	$I_{OC}$	15		75	mA
	$I_{SC}$	100		125	
Current (Iout)	Antenna Current Draw, DC output to Ant VDC In = 9V			70	mA

**Notes:**

1. Performance guaranteed for N(F) connectors.
2. Relative to the passband.
3. Non-Filtered.
4. Open Circuit & Short Circuit Current ( $I_{OC}$ ,  $I_{SC}$ ) may be set by the customer within the specified range. Antenna Monitor Option (-M) is only available with 5VDC output voltage.

**Figure 1. AT11DV Non-filtered Frequency Response**

**Performance Data:**



**Available Options:**

<b>Power Supply Options:</b>		
<b>Source Voltage Options</b>	<b>Voltage Input</b>	<b>Type</b>
	DC 8-16 VDC	Transformer, Quick Connects
	DC 6-16 VDC	DC Input on IN Port
<b>Output Voltage Options</b>	<b>DC Voltage Out<sup>(1)</sup></b>	
	5 (Antenna Monitor Option (-M) only available with 5VDC output)	
	7.5	
	9	
	12	
	Variable 5-12 (Future)	
	Custom	
<b>RF Connector Options:</b>		
<b>IN Port Connector Options</b>	<b>Connector Type</b>	<b>Limitations</b>
	N (Male & Female)	
	SMA (Male & Female)	
	TNC (Male & Female)	
	BNC (Male & Female)	Performance Not Guaranteed

**Notes:**

1. Maximum DC current draw out input port of the device is a function of the DC input voltage and desired DC output voltage, according to the following:

$$I_{out} \leq 1.4 / (V_{DC\ IN} - V_{DC\ OUT}) - 0.180 \text{ Amps (or 250mA max)}$$

**Part Number:**

**AT11DV - R2 - F1 - M - O - P110 / 5 - SF**

Product:

Standard AT11DV

RS232 Serial Option:

- BLANK** – No RS232
- R2** – Standard RS232 DCE
- R2B** – Bluetooth Wireless Link

Filter Option:

- BLANK** – No Filter
- F1** – L1 Filtered
- F12** – L1\L2 Filtered

Antenna Monitor Opt:

- BLANK** – No Ant Monitor
- M** – Antenna Monitor Opt.  
(Only ava. w/ 5VDC Output Voltage)

Oscillation Detection Opt:

- BLANK** – No Osc. Det.
- O** – Osc. Det. Opt.

Source Voltage:

- P110** – Transformer,
- P220** – Transformer,
- P240** – UK Transformer,
- PDC** – DC w/Quick Connects
- PM** – Military Connector (User supplies DC)
- NP** – No Power


Output Voltage:


**5, 7.5, 9, 12, XX, V** – Denotes Output Voltage  
(XX – custom output voltage, V – variable{future})

Connector Options:

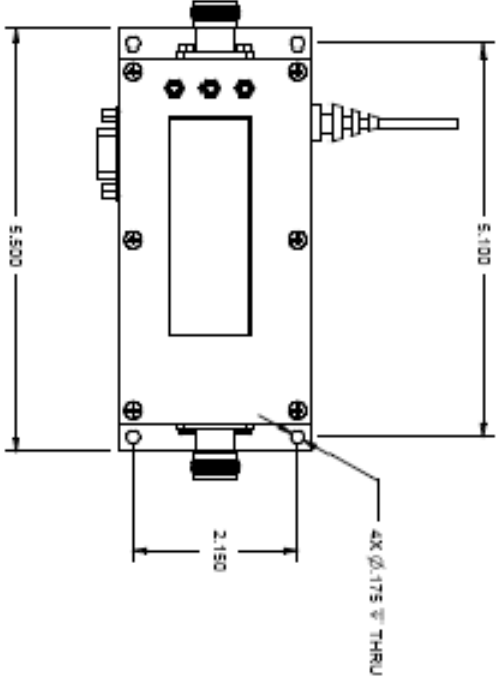
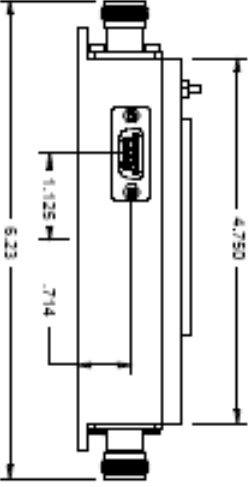
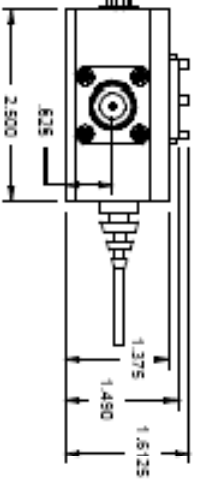
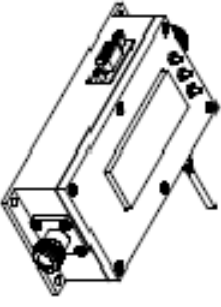
- NM** – N, Male, **NF** – N, Female, **SM** – SMA, Male, **SF** – SMA, Female
- TM** – TNC, Male, **TF** – TNC, Female, **BM** – BNC, Male, **BF** – BNC, Female
- SB** – SMB Jack, Female, **SC** – SMC Jack, Female, **MX** – MCX Jack, Female

**Mechanical:**





DRAWN JMK	DATE 15MAR2008	TITLE FAV ANP VARIABLE A11XCV BRD BND HIGAIN DIGITAL/ATT NO/OSC DET NO/GPS P110/5	
CHECKED P/WC	SCALE 1/2		
APPROVED	SIZE A	DESIG FILE NAME 031-FAV-AAB-AAX-BBZ	GPS SOURCE PART NUMBER FAV-AAB-AAX-BBZ
			SHEET 1 OF 1

REVISIONS			
ZONE	REV	DESCRIPTION	DATE