

RF Instrument Amplifier

TVA-11-422

50Ω

10 to 4200 MHz

The Big Deal

- Ultra-Wideband, 10 - 4200 MHz
- High Gain, 42 dB typ.
- Output Power, +27 dBm
- Digital Step Attenuator, 0-15 dB
- Self Contained Power Supply with selectable 110 or 220 volts AC supply
- External Access to Power Supply, 15 Volts, 0.5 Amperes
- N-Type to SMA Adapters included
- Connector Caddy
- Thermally self protected



CASE STYLE: AP1603

This model will be replaced in the future with a RoHS version. The new model will be [TVA-11-422A+](#). It will have similar performance and will be in a new form factor.

Product Overview

The TVA 11- 422 is an ultra-wideband instrument amplifier with a digital gain control and an internal power supply, making it exceptionally suitable and convenient for a wide variety of laboratory testing applications.

Key Features

Feature	Advantages
Ultra-wideband	Over eight octaves of bandwidth covers the spectrum from FM broadcast into the microwave range in a single instrument.
Output Power	This unit provides a minimum of 27dBm across the band.
High Gain	Provides typically 42 dB gain, allowing the unit to be driven to full output power with only -15 dBm of input power.
Digital Attenuator	Provides gain attenuation of 15 dB in one dB steps.
Self Powered	An internal power supply means that only one unit need be transported and makes test set-ups quick and simple.
Power supply	External access to the power supply which can supply 0.5 amperes at 15 volts externally while the amplifier is still in full operation.
Cooling System	A self contained cooling system provides cooling to the amplifier.
Warning System	Over temperature warning and automatic shut down are safety features to aid in providing a long operating life.
Carrying Handle	A single strap carrying handle provides a means for conveniently transporting the unit.

Notes

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
 B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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Coaxial

RF Instrument Amplifier

TVA-11-422

50Ω

10 to 4200 MHz

Features

- Ultra Wide band, 10 to 4200 MHz
- High Gain 42 dB typ.
- Output Power, 27 dBm
- Built-in power supply and attenuator 0-15 dB
- CE marked

Applications

- Laboratory test instrument
- Signal generator output amplification
- EMI and antenna testing



CASE STYLE: AP1603

Connectors	Model
N-Type	TVA-11-422
N-Male - SMA Fem Adapter	NM-SF50+ (2 Included)

Electrical Specifications at 25°C, unless otherwise noted

Parameter	Condition (MHz)	Min	Typ.	Max.	Units
Frequency Range		10	—	4200	MHz
Gain	10 - 4200	36	42	—	dB
Gain Flatness ¹	10 - 4200	—	±1.0	±1.5	dB
Output Power at 1dB compression ²	10 - 4200	+28	+30	—	dBm
Noise Figure ³	10 - 4200	—	10.5	—	dB
Output third order intercept point	10 - 4200	—	+44	—	dBm
Input VSWR	10 - 4200	—	1.35	—	:1
Output VSWR	10 - 4200	—	1.7	—	:1
AC Supply	—	—	110/220	—	V

1. Measured at 25°C

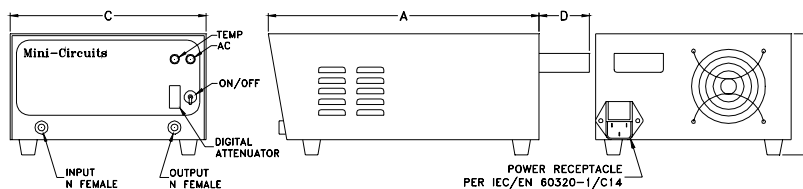
2. 27 dBm at 10-700 MHz

3. Below 100 MHz, NF increases to 15 dB at 10 MHz

Open load is not recommended, potentially can cause damage. With open load derate max input power by 20 dB

Note: Keep area adjacent to the louvers clear to allow free air flow.

Outline Drawing



Maximum Ratings

Parameter	Ratings
Operating Temperature	0°C to 55°C
Storage Temperature	-40°C to 70°C
Input RF Power (no damage)	-9 dBm

Permanent damage may occur if any of these limits are exceeded.

Outline Dimensions (inch/mm)

A	B	C	D	wt
10.8	4.8	7.8	2.00	grams
274.3	121.9	198.1	50.8	3000

Notes

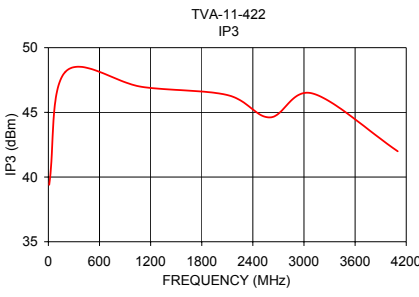
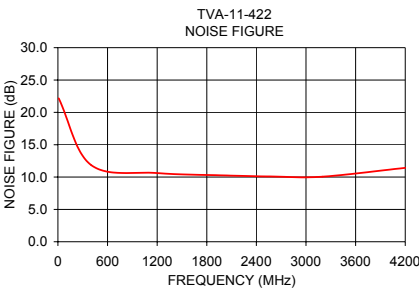
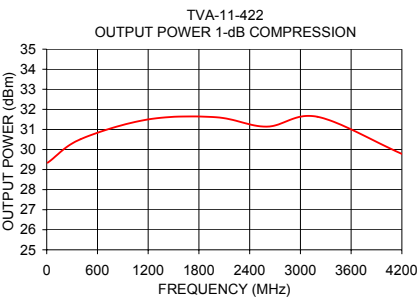
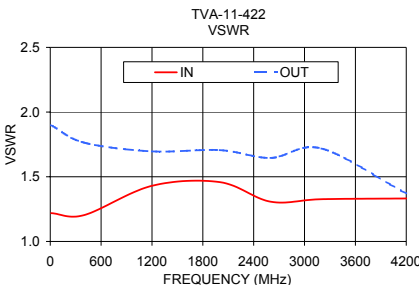
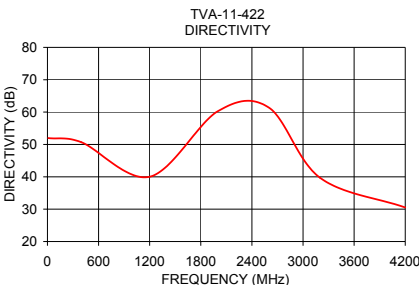
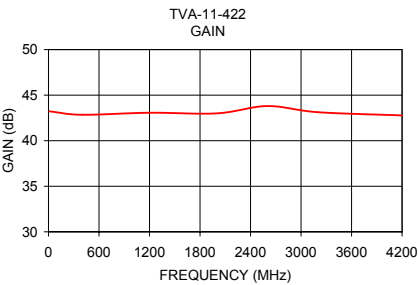
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FREQUENCY (MHz)	GAIN (dB)	DIRECTIVITY (dB)	VSWR (:1)		NOISE FIGURE (dB)	POUT at 1 dB COMPR. (dBm)	IP3 (dBm)
			IN	OUT			
10.00	43.22	51.97	1.22	1.90	22.16	29.34	39.40
400.00	42.85	50.67	1.20	1.76	11.88	30.51	48.13
1200.00	43.07	40.01	1.43	1.70	10.62	31.50	46.97
2000.00	43.00	60.26	1.46	1.71	10.26	31.61	46.34
2600.00	43.80	61.39	1.31	1.65	10.08	31.14	44.61
3200.00	43.13	39.68	1.33	1.72	10.06	31.63	46.46
4200.00	42.77	30.53	1.33	1.37	11.42	29.78	41.99



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