

# iAMP300600040-R / -VR

## 10 W High Power Scalar / Vector Amplifier and Signal Generator 300 ... 6000 MHz

### Features

- Compact 19", 2 U design
- Rugged design
- Internal CW signal source
- Optional pulse modulator
- Optional vector signal generator
- High accuracy and stable RF power
- AC mains supply

### Applications

- Antenna testing
- EMC immunity testing
- R&D
- Medium power wideband amplifiers



similar appearance

### At a Glance

The iAMP300600040-R is a compact solid-state power amplifier with an integrated CW RF source and an optional pulse modulator. An RF input also allows the power amplification of externally generated RF signals. The amplifier can be used over a very wide bandwidth.

The user can select between a fixed gain and an automatic-level (ALC) controlled mode. In ALC mode, iAMP300600040-R directly and accurately provides the desired output power level with virtually no drift over time.

### Forward and Reverse Power Measurement

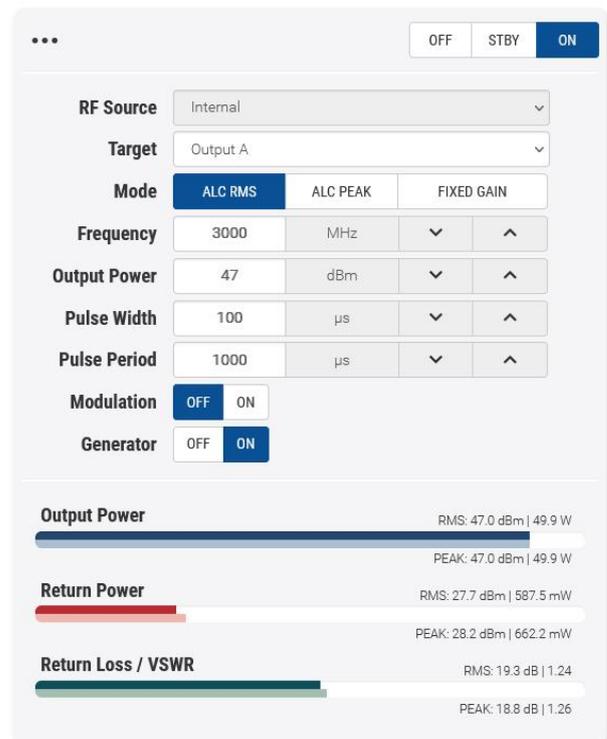
Forward and reverse power is continuously monitored at the output. This allows the operator to monitor the return loss or voltage standing wave ratio (VSWR) of the object being fed. Reflected power measurement serves also to protect the amplifier from excessive mismatch, which leads to automatic switch-off.

### Rugged Design

The amplifier device comes with a high-quality aluminum housing that protects the hardware from mechanical damage and avoids EMI influences caused by radio signals coming from the environment. The RF connectors on the unit rear side are N female type.

### Graphical User Interface (GUI)

The iAMP300600040-R can be remotely controlled via LAN or USB. An intuitive graphical user interface is accessible via standard internet browser and allows easy control and configuration of the device. Furthermore, remote control via SCPI-oriented ASCII string commands is possible, allowing the integration into automated processes.



## Health Monitoring

iAMP300600040-R has an internal health status monitoring. The module temperatures and supply currents are monitored. The health status can be read out via the LAN and USB remote interfaces. In case of critical device states, error signaling is possible via an SNMPv2 trap, while the faulty status is also reflected in the color of the status LED.

The integrated thermal management keeps the noise from cooling fans automatically to minimum level. It also reduces primary power consumption depending on amplifier state.

The unit is factory calibrated, traceable to recognized standards.

## iAMP300600040-VR: Variant for Vector Signal Processing

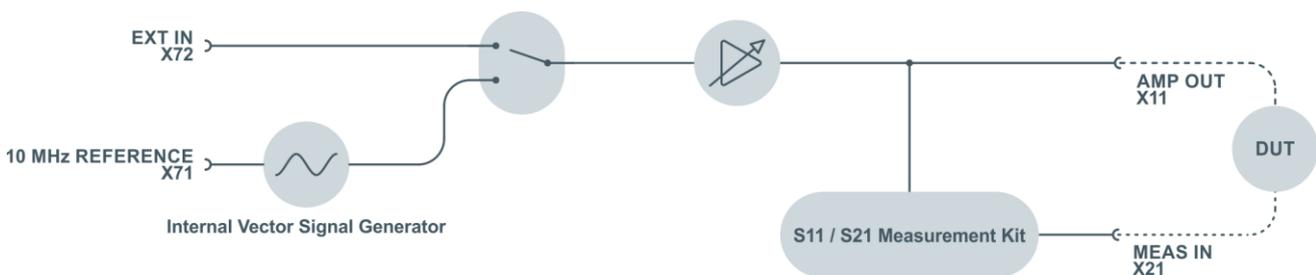
### VAR1: Vector Signal Generator

In the iAMP300600040-VR variant, the device integrates a software defined baseband generator and an I/Q modulator to generate high-power multi-standard vector signals for wireless, cellular, automotive and broadcast applications.

### VAR2: S-Parameter Measurement Set

The S-Parameter measurement set offers the possibility of vectorial return loss (S11) and insertion loss (S21) measurement through a connected DUT. This function is ideal for characterizing measuring devices such as antennas. For S21 measurement, the device is equipped with an additional MEAS port.

## Principle Block Diagram



**RF-Specification**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Impedance	$Z_{IN}/Z_{OUT}$		50		$\Omega$	
low frequency	$f_{MIN}$			300	MHz	
high frequency	$f_{MAX}$	6000			MHz	
minimum output power	$P_{RF\_MIN}$			+30.0	dBm	1 W
maximum output power	$P_{RF\_MAX}$	+40	+41		dBm	$f \leq 5000$ MHz
	$P_{RF\_MAX}$	+37	+39		dBm	$f > 5000$ MHz
ALC resolution	$\Delta P_{RF}$		0.05		dB	
level accuracy	$dP_{RF}$		$\pm 0.3$		dB	CW, RMS detection
harmonics	HD		-27		dBc	$f = 3$ GHz, $P_{RF} = +36$ dBm
non-harmonics	SD		-60		dBc	$P_{RF} = P_{1dB}$
RF connectors	$X_{RF}$	N female				back panel
<b>CW- und Pulse Generator</b>						
minimum frequency	$f_{MIN}$			300	MHz	
maximum frequency	$f_{MAX}$	6000			MHz	
frequency resolution	$\Delta f_{GEN}$		10		kHz	
frequency accuracy	$df_{GEN}$		$\pm 5$		ppm	
pulse width	$t_w$	1		9999	$\mu s$	
repetition rate	$t_p$	2		10000	$\mu s$	
<b>Ext. generator input</b>						
minimum frequency	$f_{MIN\_EXT}$			300	MHz	
maximum frequency	$f_{MAX\_EXT}$	6000			MHz	
input level	$P_{GEN\_EXT}$		+0	+10	dBm	
RF connector	$X_{GEN\_EXT}$	SMA female				
<b>REF input</b>						
impedance	$Z_{IN}$		50		$\Omega$	
frequency	$f_{REF}$		10		MHz	
input level	$P_{REF}$	-20	10	+15	dBm	
DC offset	$U_{DC}$	-20		+20	V	AC coupled
RF connector	$X_{REF}$	BNC female				rear panel
<b>Variant with RF Signal Generator</b>						
low frequency	$f_{VMIN}$			300	MHz	
high frequency	$f_{VMAX}$	6000			MHz	
modulation bandwidth	$B_V$		20		MHz	
S11 magnitude accuracy	$dP_{RF,S11}$		$\pm 0.5$		dB	
S21 magnitude accuracy	$dP_{RF,S21}$		$\pm 0.5$		dB	



**Common specification**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
power supply	$U_{AC}$	120	230	260	V	50 / 60 Hz
power consumption	$P_{AC}$		30		W	standby mode
			350		W	RF power +43 dBm
				600	W	saturated power
power socket	$X_{AC}$	IEC-60320 C14				
dimensions	B x H x T	approx. 483 x 89 x 460			mm	19", 2 HE
weight			20		kg	
remote interface		RJ45 10/100BaseT				ASCII strings
operating temp. range	$T_o$	+ 5		+ 45	°C	
storage temp. range	$T_s$	- 40		+ 70	°C	
Product conformity						
electromagnetic capability	EU: In line with EMC directive (2014/30/EC)					applied harmonized standards: EN61326-1:2013, (for use in control and laboratory environments), EN55035, EN55011 (Group 1, Class B), EN61000-3-2, EN61000-3-3
electrical safety	EU: in line with low voltage directive (2014/35/EC)					Applied harmonized standards: EN 61010-1
<b>Ordering Information</b>						
variants	iAMP300600040-R	2200.6502.1		Scalar Signal Generator		
	iAMP300600040-VR	2200.6512.1		Vector Signal Generator		
	iAMP300600040-VR	2200.6512.2		S-Parameter Measurement Set		
options	iAMP300600040-R-O1	2200.6502.O1		Option Pulse Modulator		



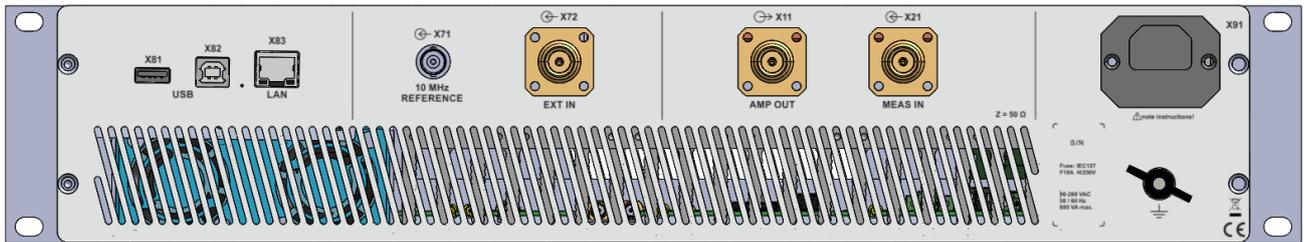
## Appearances

Number of N-connectors on the back depend on product variant

### Front View

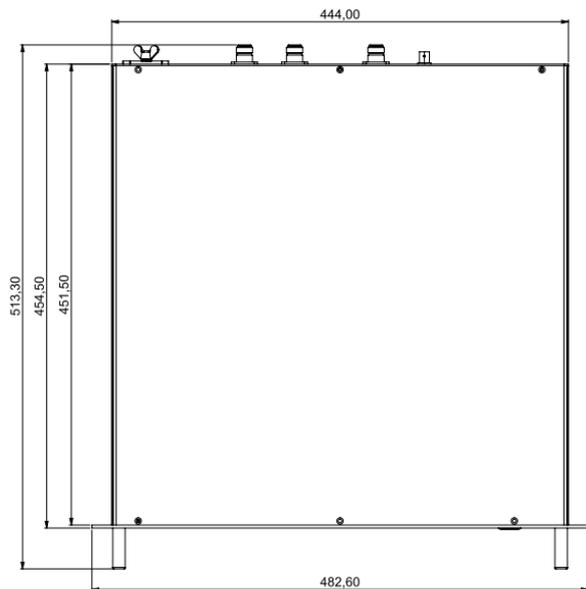
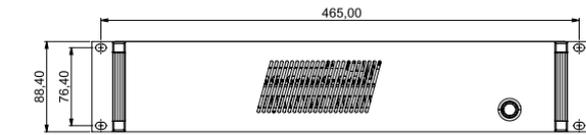


### Rear View



## Dimensions

Number of N-connectors on the back depend on product variant



all dimensions in mm  
± 2 mm



**Related Products**

Product	Description
iAMP300600040-R	10 W High Power Scalar / Vector Amplifier / Signal Generator, 300 ... 6000 MHz
iAMP300600043-R	20 W High Power Scalar / Vector Amplifier / Signal Generator, 300 ... 6000 MHz
iAMP300600047-R	50 W High Power Scalar / Vector Amplifier / Signal Generator, 300 ... 6000 MHz
iAMP1700980043-R	20 W High Power Scalar / Vector Amplifier / Signal Generator, 1700 ... 9800 MHz

