

iAMP1700980043-R / -VR

20 W High Power Scalar / Vector Amplifier and Signal Generator 1700 ... 9800 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 iAMP1700980043-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, iAMP1700980043-R directly and accurately provides the desired output power level with virtually no drift over time.

Forward and Reverse Power Measurement

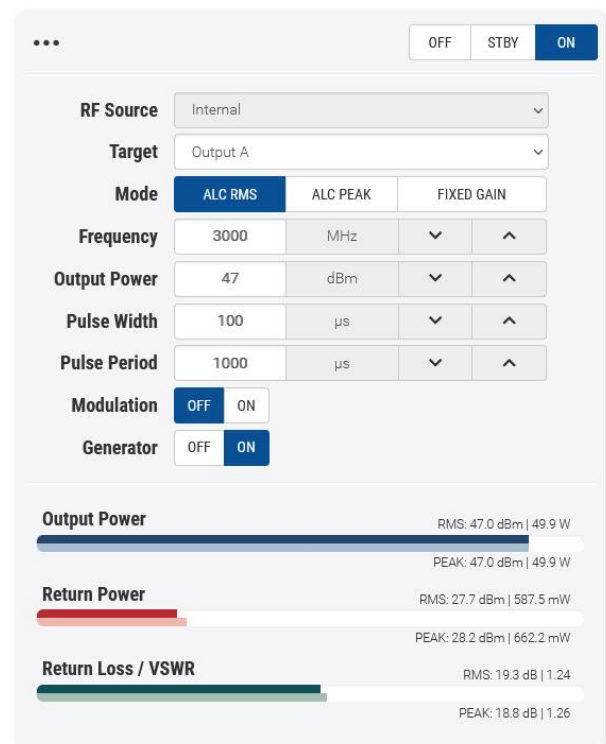
Forward and reverse power is continuously monitored at the output. This allows the operator to monitor the return loss or voltage standing wave ratio (VSWR) of the object being fed. Reflected power measurement serves also to protect the amplifier from excessive mismatch, which leads to automatic switch-off.

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 iAMP1700980043-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

iAMP1700980043-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.

iAMP1700980043-VR: Variant for Vector Signal Processing

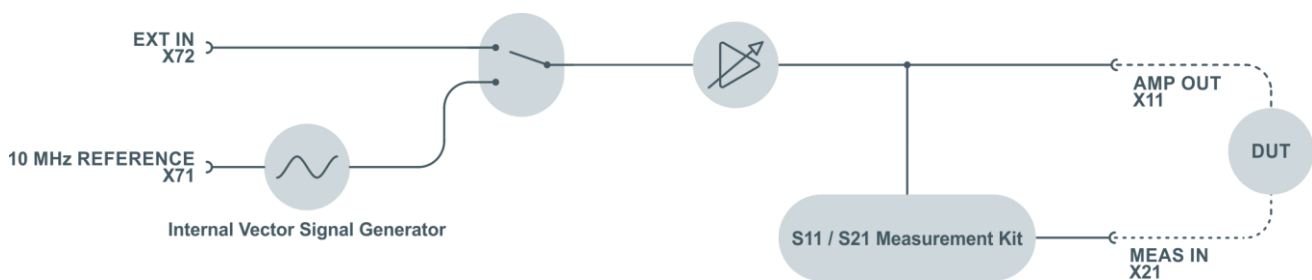
VAR1: Vector Signal Generator

In the iAMP1700980043-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		Ω	
low frequency	f _{MIN}		1700	2000	MHz	
high frequency	f _{MAX}	8500	9800		MHz	
minimum output power	P _{RF_MIN}			+20.0	dBm	1 W
maximum output power	P _{RF_MAX}		+42		dBm	f < 2 GHz
	P _{RF_MAX}		+43		dBm	2 GHz < f ≤ 2.4 GHz
	P _{RF_MAX}		+44		dBm	2.4 GHz < f ≤ 4 GHz
	P _{RF_MAX}		+43		dBm	4 GHz < f ≤ 8.5 GHz
	P _{RF_MAX}		+40		dBm	f > 8.5 GHz
ALC resolution	ΔP _{RF}		0.05		dB	
output power accuracy	dP _{RF}		±0.3		dB	CW, RMS detection
harmonics	HD		-25		dBc	f = 2.7 GHz, P _{RF} = + 40 dBm
non-harmonics	SD		-60		dBc	P _{RF} = P _{1dB}
RF connectors	X _{RF}	N female				front panel
CW- und Pulse Generator						
minimum frequency	f _{MIN}			1700	MHz	
maximum frequency	f _{MAX}	9800			MHz	
frequency resolution	Δf _{GEN}		10		kHz	
frequency accuracy	df _{GEN}		±5		ppm	
pulse width	t _W	1		9999	μs	
repetition rate	t _P	2		10000	μs	
Ext. generator input						
minimum frequency	f _{MIN_EXT}			1700	MHz	
maximum frequency	f _{MAX_EXT}	9800			MHz	
input level	P _{GEN_EXT}		+0	+10	dBm	
RF connector	X _{GEN_EXT}	SMA female				
REF input						
impedance	Z _{IN}		50		Ω	
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
Variant with RF Signal Generator						
low frequency	f _{VMIN}			300	MHz	
high frequency	f _{VMAX}	6000			MHz	
modulation bandwidth	B _V		20		MHz	
S11 magnitude accuracy	dP _{RF,S11}		±0.5		dB	
S21 magnitude accuracy	dP _{RF,S21}		±0.5		dB	

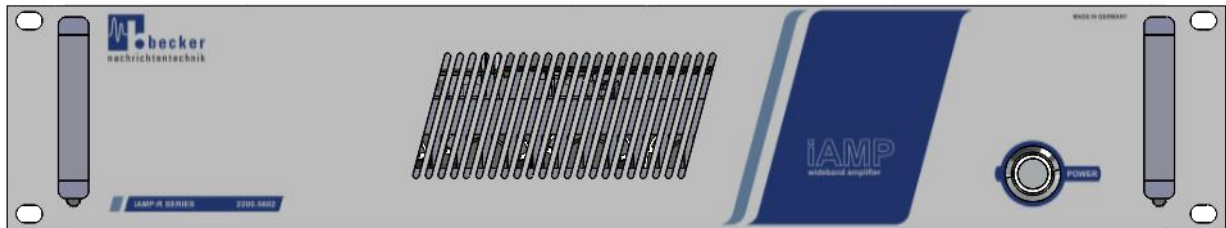
Common specification

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
			450		W	RF power +43 dBm
				550	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
Ordering Information						
variants	iAMP1700980043-R		2200.6642.1		Scalar Signal Generator	
	iAMP1700980043-VR		2200.6652.1		Vector Signal Generator	
	iAMP1700980043-VR		2200.6652.2		S-Parameter Measurement Set	
options	iAMP1700980043-R-O1		2200.6642.O1		Option Pulse Modulator	

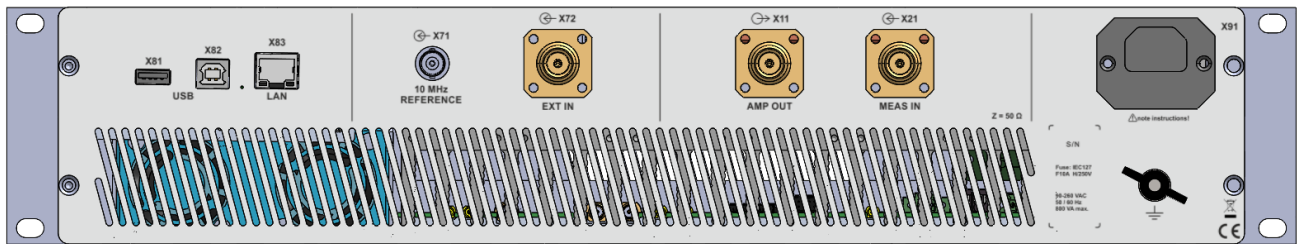
Appearances

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

Front View

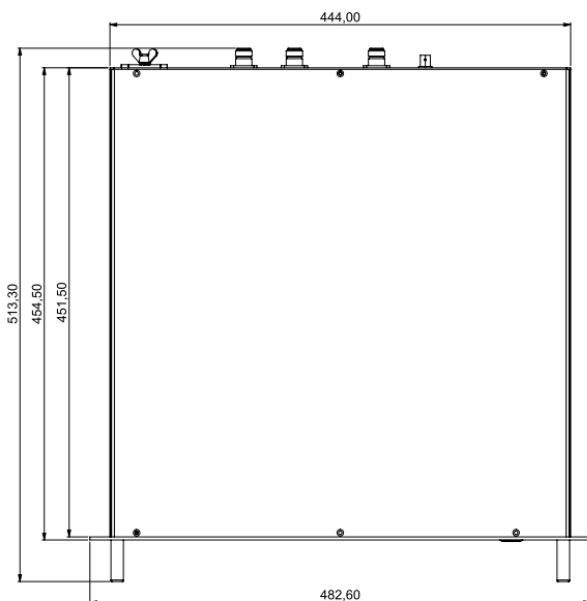
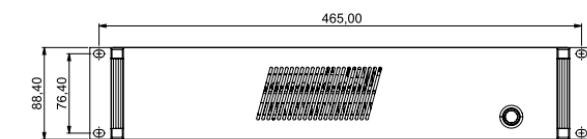


Rear View



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