

Product Information: Rev 1B, Issue May 2009, Revised July 2011

ODLA502000-BPS is outdoor wideband low noise amplifier intended for very precision measurements of RF-signals up to 2GHz. Built-in switch allows by-pass of the signals up to 3GHz. ODLA502000-BPS is powered through RF-OUT connector only, thanks to what need of special power cable is eliminated.

KEY FEATURES

- Very low noise!
- High gain
- Wideband
- By-pass switch mode
- Built-in bias-T circuit
- Outdoor and waterproof
- Compact and reliable
- Wide voltage range

APPLICATIONS

- Radio-monitoring
- Small signals receiving
- IF-systems
- Cable loss compensation



Image is for illustrative purposes only.

TECHNICAL SPECIFICATIONS

RF characteristics in amplifier mode*

Frequency range	50-2000									MHz
IN/OUT impedance	50/50									Ohm
Frequency	30	50	200	500	1000	1500	2000	2500	3000	MHz
Gain	25.0	25.5	24.8	21.0	16.5	12.7	9.7	6.0	1.0	dB
Noise figure	1.40	0.90	0.55	0.70	0.90	1.10	1.60	2.1	-	dB
VSWR IN	4.0	3.0	2.0	1.7	1.5	1.2	1.3	2.4	-	
VSWR OUT	2.0	1.2	1.2	1.5	1.6	2.0	2.0	2.8	-	
Amplifier isolation	33.0	32.0	29.0	26.0	22.0	20.0	18.0	18.0	-	dB
Output 1dB	-	18.5	18.5	18.5	18.5	19.0	19.5	-	-	dBm
Output IP3 spacing 1MHz	-	31.0	32.0	33.0	34.0	35.0	36.0	-	-	dBm

* Measured at temperature T=+25°C. 50 Ω input/output impedances are used.

RF characteristics in by-pass mode*

Frequency range	10-3000						MHz
IN/OUT impedance	50/50						Ohm
Frequency	10	100	500	1000	2000	3000	MHz
Insertion loss	0.7	0.1	0.3	0.5	1.1	1.9	dB
VSWR IN/OUT	1.8	1.1	1.3	1.3	1.6	2.0	
Relay sum isolation	>70	>70	>70	>70	>55	>40	dB

* Measured at temperature T=+25°C. 50 Ω input/output impedances are used.

DC and mechanical characteristics

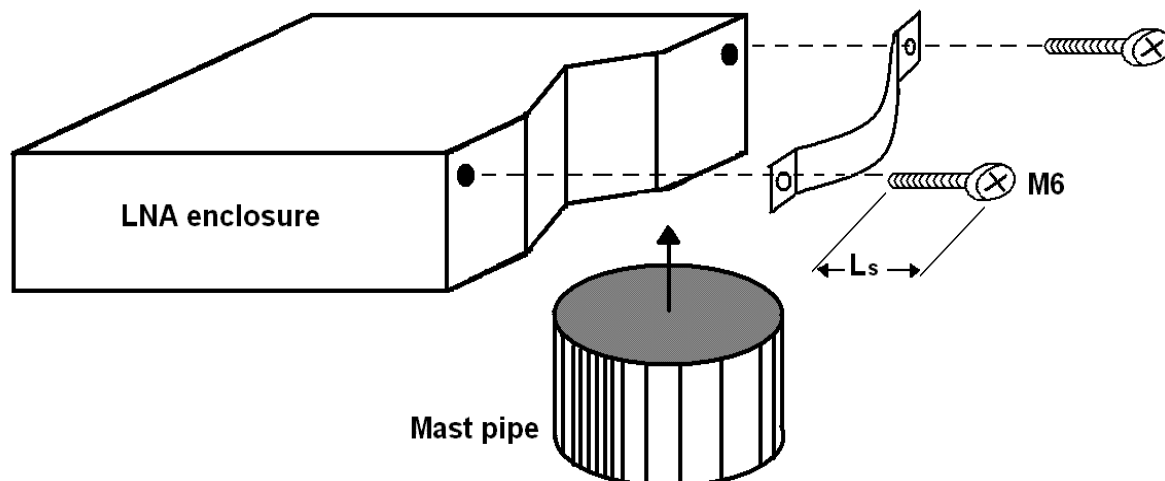
Device current	135	mA
Device voltage (DC)	+5...+17	V
IN/OUT Connector	N-type female/ N-type female	
Enclosure type	Outdoor, aluminium	
Mounting	Suitable for mounting onto mast up to 2"	
Dimensions (without mounting clip)	80x80x45	mm

Absolute maximum ratings

Device current	145	mA
Device voltage	+17	V
CW RF input power (in amplifier mode)	+18	dBm
CW RF input power (in by-pass mode)	+33	dBm
Voltage at RF-input	+50	Vdc
Internal switch mechanical endurance	10 ⁷	Times
Switching rate (without load)	50	Times/s
Temperature	-40...+85	°C

Not observing the requirements, the device may be damaged. Switching ODLA502000-BPS on make sure that device input and output are correctly loaded with 50Ω.

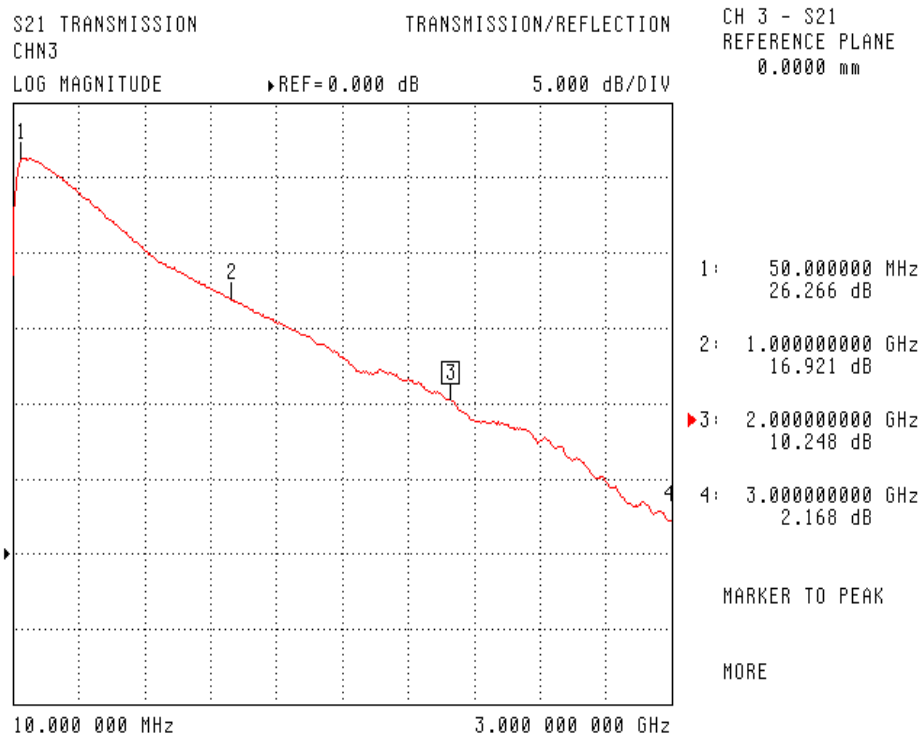
INSTALLATION AND OPERATION INSTRUCTIONS



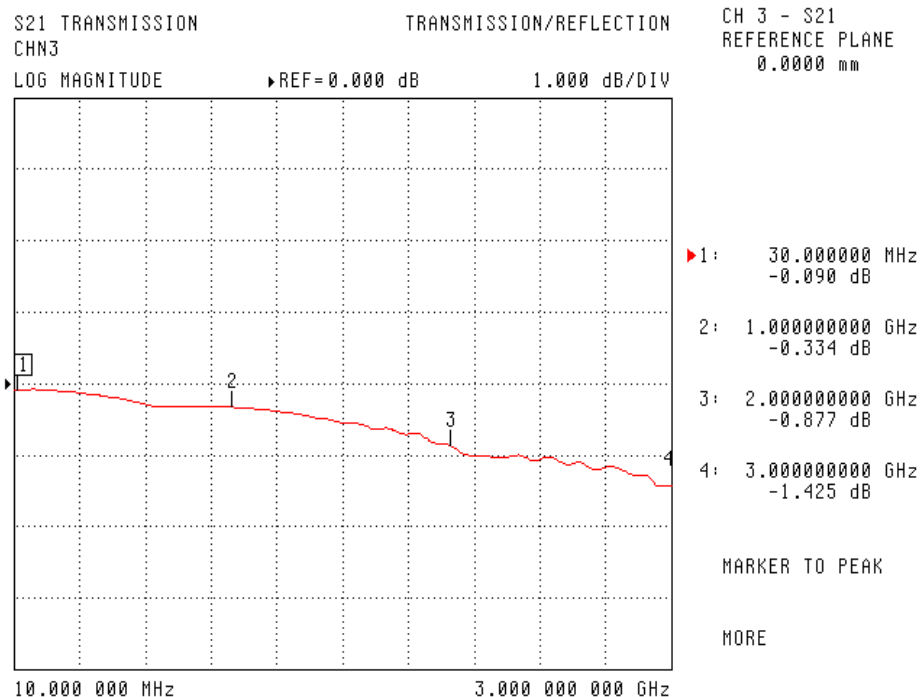
For convenience pair of M6-screws are included in the final set. $L_s = 45\text{mm}$.

ODLA502000-BPS is unidirectional amplifier. RF signal, that must be amplified, comes to RF IN input only. On the RF OUT+DC output amplified input signal can be found. Since ODLA502000-BPS is powered through output RF connector only, proper voltage and sufficient current must be provided onto RF OUT+DC output. If the device is not powered internal switches go into by-pass mode. In this mode ODLA502000-BPS works just like through connection with very low its own insertion loss.

Example of ODLA502000-BPS transfer function curve in amplifier mode



Example of ODLA502000-BPS transfer function curve in by-pass mode



Rantelon reserves the right to change the specification without notice.