

Product Information: Rev 1A, Issue February 2013, Revised February 2013

**ODLA203000-BPS is outdoor wideband low noise amplifier intended for very precision measurements of RF-signals up to 3GHz. Built-in switch allows by-pass of the signals also up to 3GHz. ODLA203000-BPS is powered through RF-OUT connector only, thanks to what need of special power cable is eliminated.**

### KEY FEATURES

- Low noise
- By-pass switch mode
- Wideband
- High and flat gain
- Built-in bias-T circuit
- Outdoor and waterproof
- Compact and reliable

### APPLICATIONS

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



Image is for illustrative purposes only.

### TECHNICAL SPECIFICATIONS

#### RF characteristics in amplifier mode\*

<b>Frequency range</b>	20-3000						<b>MHz</b>
<b>IN/OUT impedance</b>	50/50						<b>Ohm</b>
<b>Frequency</b>	<b>20</b>	<b>100</b>	<b>1000</b>	<b>2000</b>	<b>3000</b>	<b>3500</b>	<b>MHz</b>
<b>Gain</b>	16.5	17.2	17.0	15.8	16.5	16.0	<b>dB</b>
<b>Noise figure</b>	3.1	1.4	1.3	1.6	2.0	2.4	<b>dB</b>
<b>VSWR IN</b>	<2.5	<2.0	<2.0	<2.0	<2.0	-	
<b>VSWR OUT</b>	<2.0	<1.5	<1.5	<1.5	<1.5	-	
<b>Output 1dB</b>	12.5	13.0	14.5	16.5	17.0	-	<b>dBm</b>
<b>Output IP3 spacing 1MHz</b>	29.0	30.0	32.0	35.0	33.0	-	<b>dBm</b>

\* Measured at temperature T=+25°C

#### RF characteristics in by-pass mode\*

<b>Frequency range</b>	20-3000						<b>MHz</b>
<b>IN/OUT impedance</b>	50/50						<b>Ohm</b>
<b>Frequency</b>	<b>20</b>	<b>100</b>	<b>1000</b>	<b>2000</b>	<b>3000</b>	<b>3500</b>	<b>MHz</b>
<b>Insertion loss</b>	0.5	0.5	0.5	0.8	1.1	1.6	<b>dB</b>
<b>VSWR IN/OUT</b>	<1.7	<1.7	<1.7	<1.7	<1.7	-	
<b>Relay sum isolation</b>	>70	>70	>70	>55	>40	-	<b>dB</b>

\* Measured at temperature T=+25°C

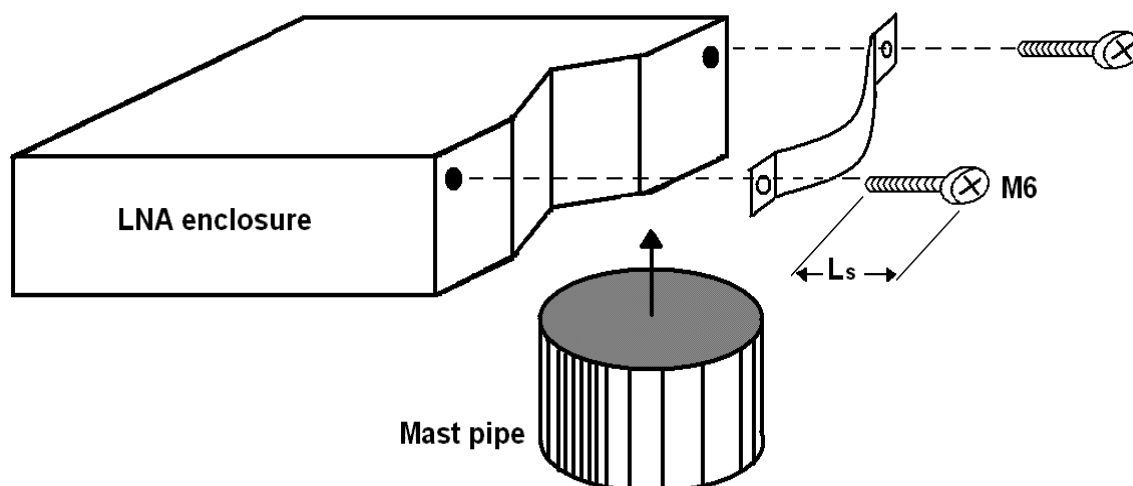
### DC and mechanical characteristics

Device current	160	mA
Device voltage (DC)	+12...+17 <i>(positive on central pin)</i>	V
IN/OUT Connector	N-female/ N-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	+170	mA
Device voltage	+17	V
CW RF input power (in amplifier mode)	+20	dBm
CW RF input power (in by-pass mode)	+30	dBm
Voltage at RF-input	+50	Vdc
Internal switch mechanical endurance	10 <sup>7</sup>	Times
Switching rate (without load)	50	Times/s
Temperature	-40...+85	°C

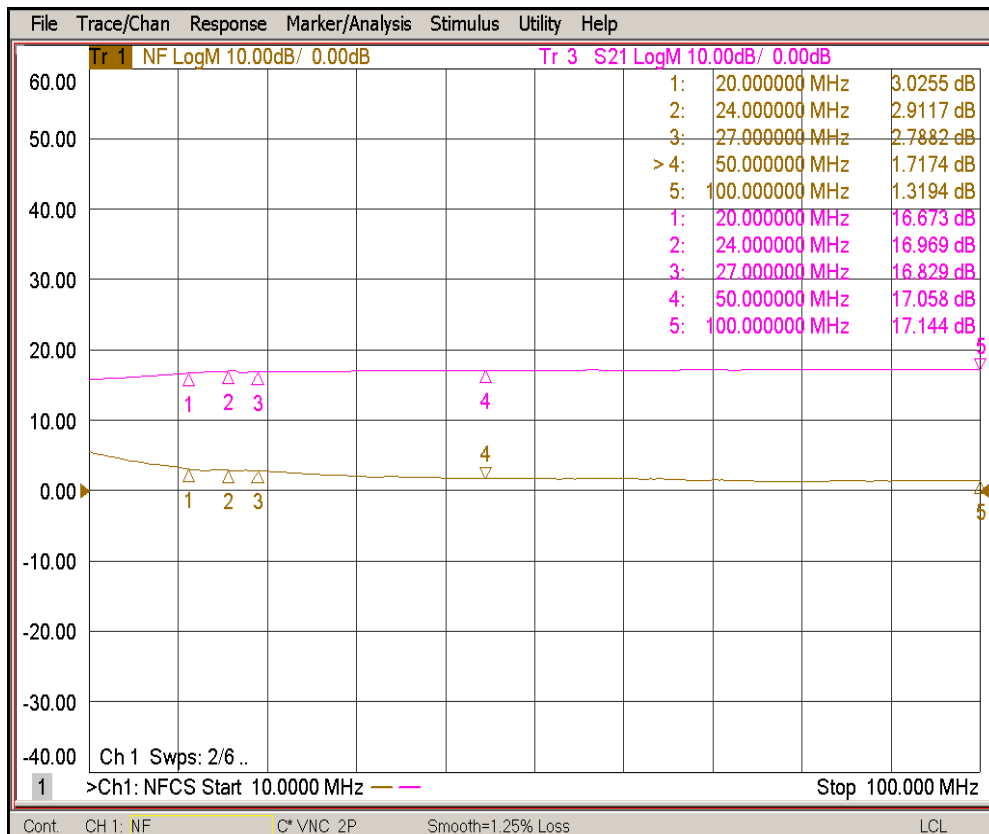
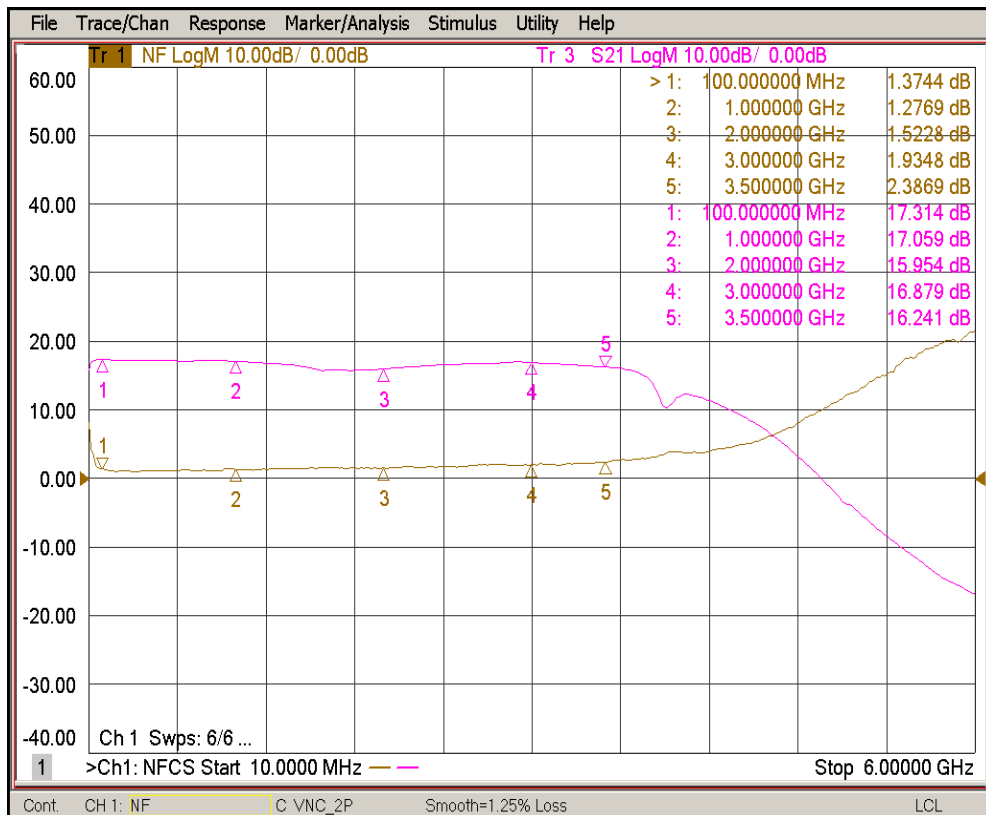
## INSTALLATION AND OPERATION INSTRUCTIONS



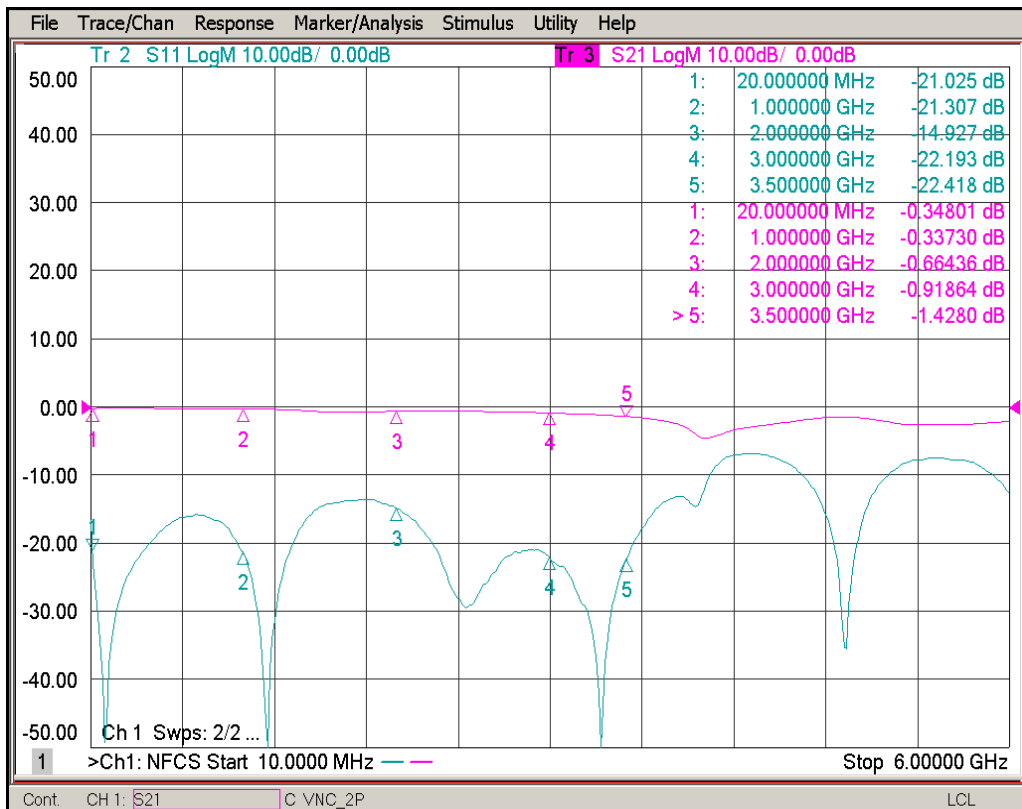
For convenience pair of M6-screws are included in the final set.  $L_s = 45\text{mm}$ .

ODLA203000-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 ODLA203000-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 ODLA203000-BPS works just like through connection with very low its own insertion loss.

Example of ODLA203000-BPS performance (noise figure and gain) in amplifier mode



Example of ODLA203000-BPS performance (matching and losses) in by-pass mode



Rantelon reserves the right to change the specification without notice.