Wideband Driver Amplifiers

1 Introduction

TBDA1 wideband driver amplifiers are versatile building blocks that can easily be integrated into laboratory setups. With a frequency range of 40MHz to 3GHz and an output power of + 22 dBm at 1dB compression, they are ideal to boost the amplitude of low power RF sources or to drive power amplifier stages. The TBDA1 wideband amplifiers are available with 14dB or 28dB gain.

Picture 1 – TBDA1 wideband driver amplifiers front view

Picture 2 – TBDA1 wideband driver amplifiers rear view

Application:

general purpose gain block

RF driver amplifier

Wideband Driver Amplifiers

2 Electrical Specifications

2.1 TBDA1/14dB

Technical Data:

Input: 50 Ohm, SMA female

Output: 50 Ohm, SMA female

Nominal supply Voltage: 5V, typ. 115mA, Mini-USB-B connector

Maximum supply voltage: 5.5V

Maximum input power: +20dBm

1dB output compression point @ 40MHz: +21.5dBm

1dB output compression point @ 2 GHz: +22.5dBm

3rd order output intercept point @ 40 MHz: +40dBm

3rd order output intercept point @ 2 GHz: +43dBm

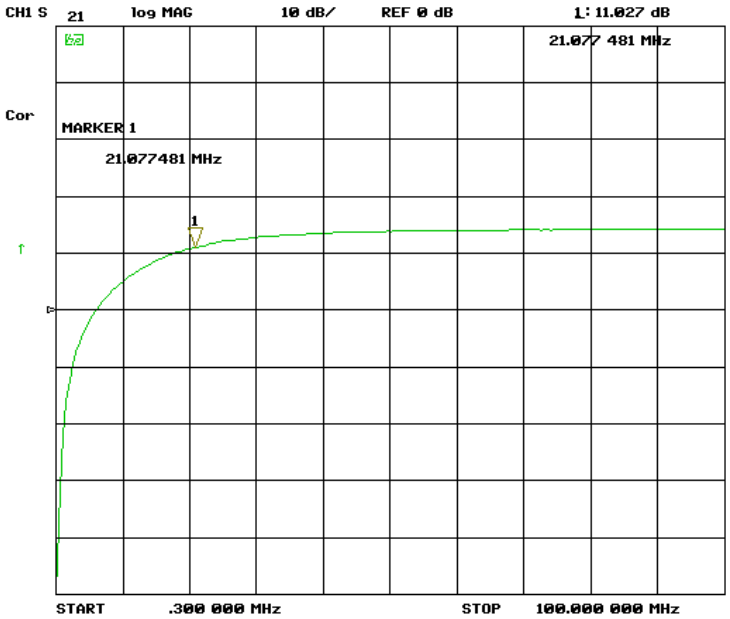
Reverse isolation S12: -20dB

Noise Figure: 3 … 4 dB

Gain:

25 MHz	50 MHz	100 MHz	500 MHz	1 GHz	1.5 GHz	2 GHz	2.5 GHz	3 GHz
12 dB	13.8 dB	14.2 dB	14.2 dB	14.3 dB	14.3 dB	13.7 dB	14.8 dB	14.6 dB

Table 1 – TBDA1/14dB gain



Picture 3 – TBDA1/14dB, gain, 300 kHz – 100 MHz, lin.

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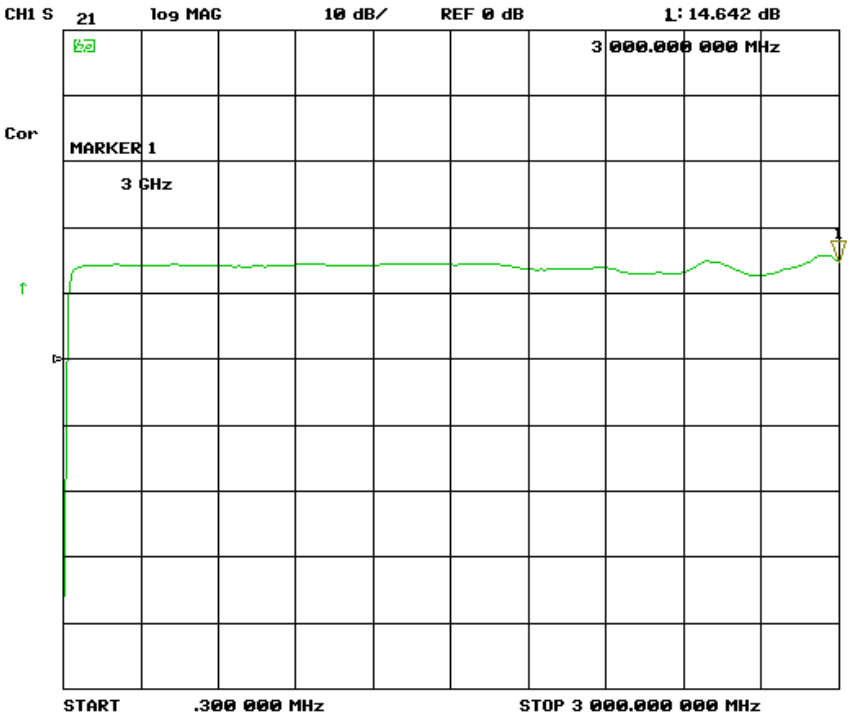
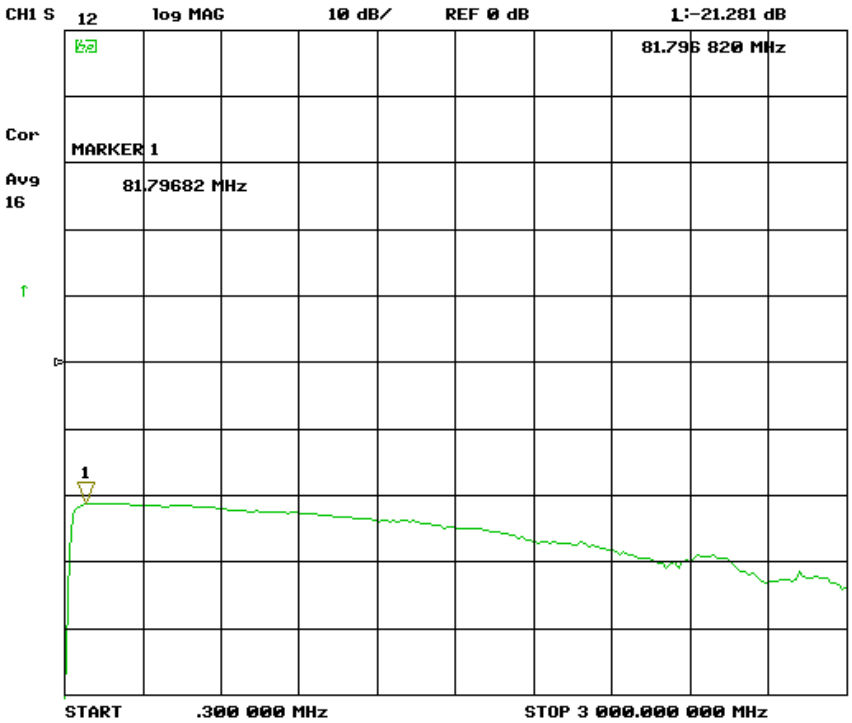


Picture 4 – TBDA1/14dB, gain, 300 kHz – 3 GHz, lin.



Picture 5 – TBDA1/14dB, reverse isolation, 300 kHz – 3 GHz, lin.

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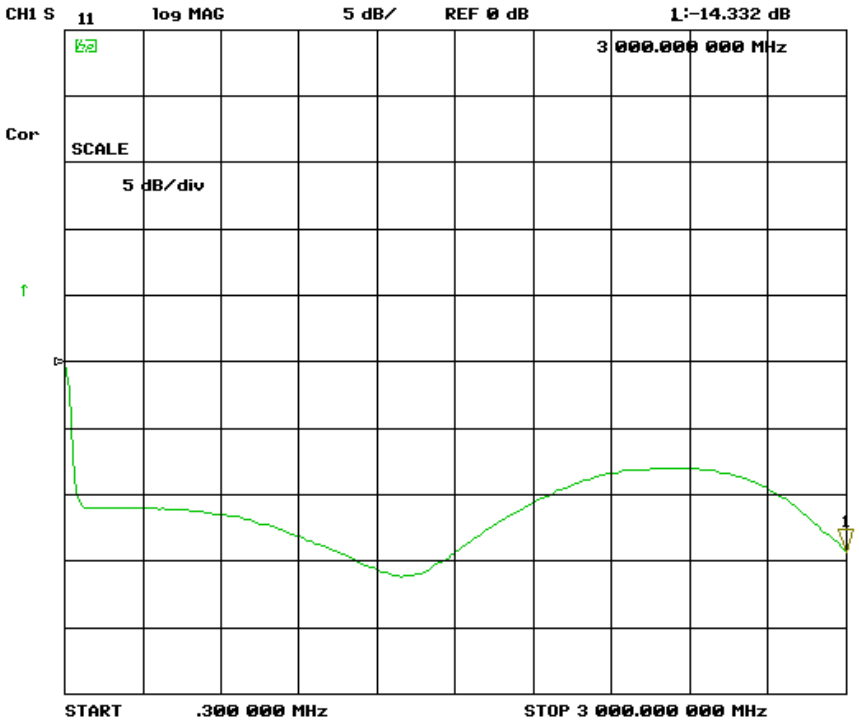
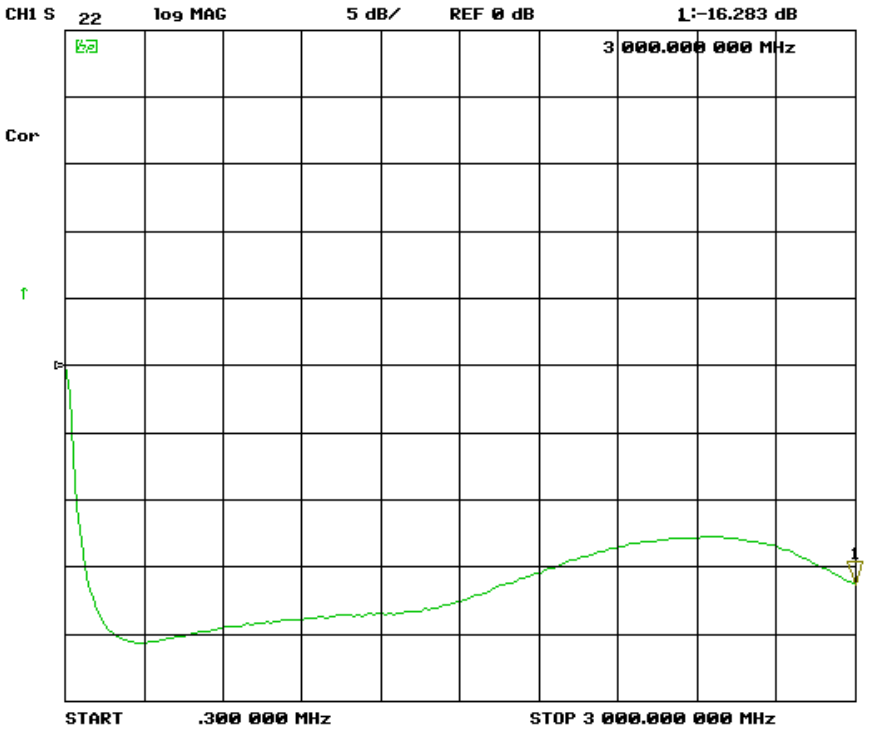


Picture 6 – TBDA1/14dB, input return loss, IS11I, 300 kHz – 3 GHz, lin.



Picture 7 – TBDA1/14dB, output return loss, IS22I, 300 kHz – 3 GHz, lin.

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2.2 TBDA1/28dB

Technical Data:

Input: 50 Ohm, SMA female

Output: 50 Ohm, SMA female

Nominal supply Voltage: 5V, typ. 225mA, Mini-USB-B connector

Maximum supply voltage: 5.5V

Maximum input power: +6 dBm

1dB output compression point @ 40MHz: +21.5dBm

1dB output compression point @ 2 GHz: +22.5dBm

3rd order output intercept point @ 40 MHz: +39.8dBm

3rd order output intercept point @ 2 GHz: +42.8dBm

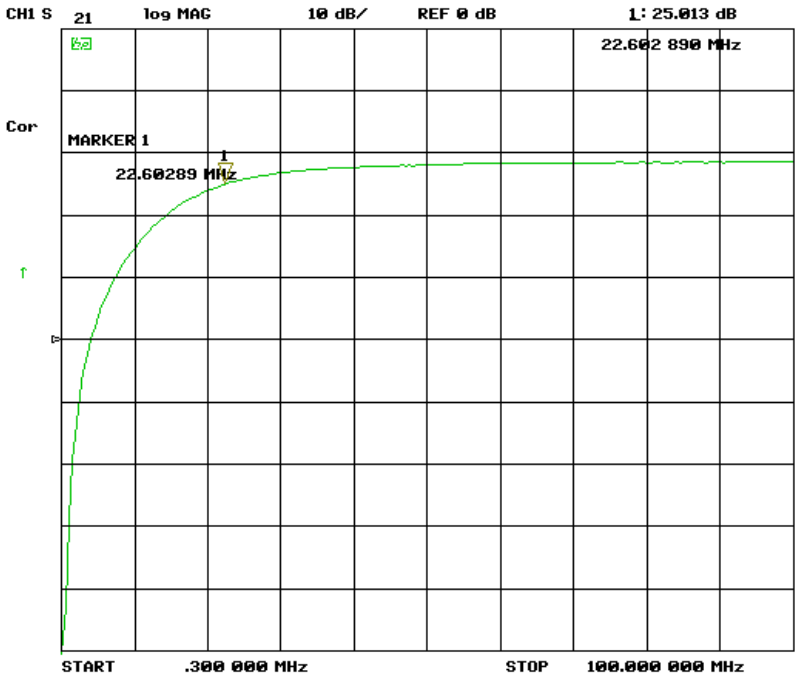
Reverse isolation S12: < -40dB

Noise Figure: 3.1 … 4.1 dB

Gain:

25 MHz	50 MHz	100 MHz	500 MHz	1 GHz	1.5 GHz	2 GHz	2.5 GHz	3 GHz
26 dB	28.4 dB	28.6 dB	28.6 dB	28.8 dB	28.3 dB	27.2dB	28.5 dB	28.9 dB

Table 2 – TBDA1/28dB gain



Picture 8 – TBDA1/28dB, gain, 300 kHz – 100 MHz, lin.

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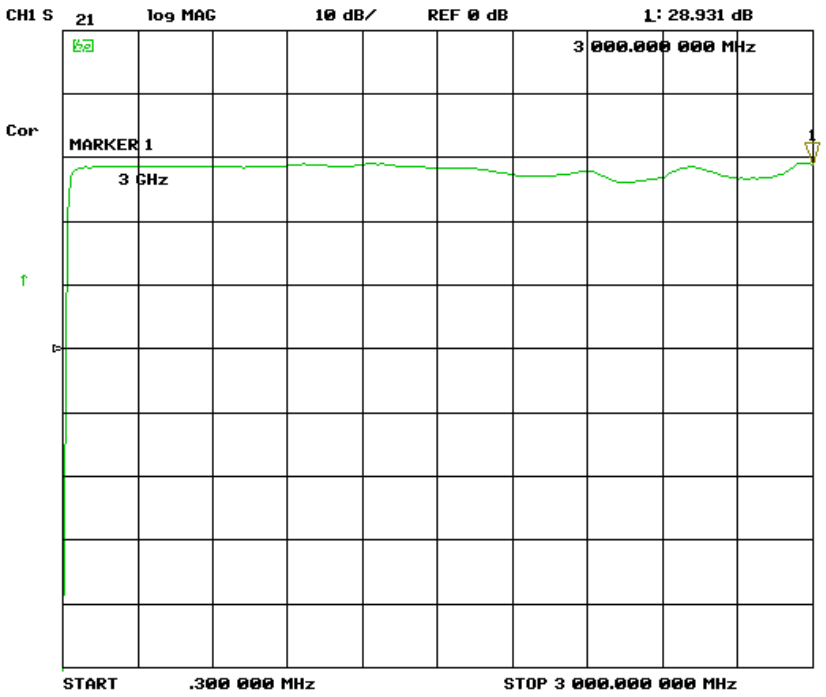
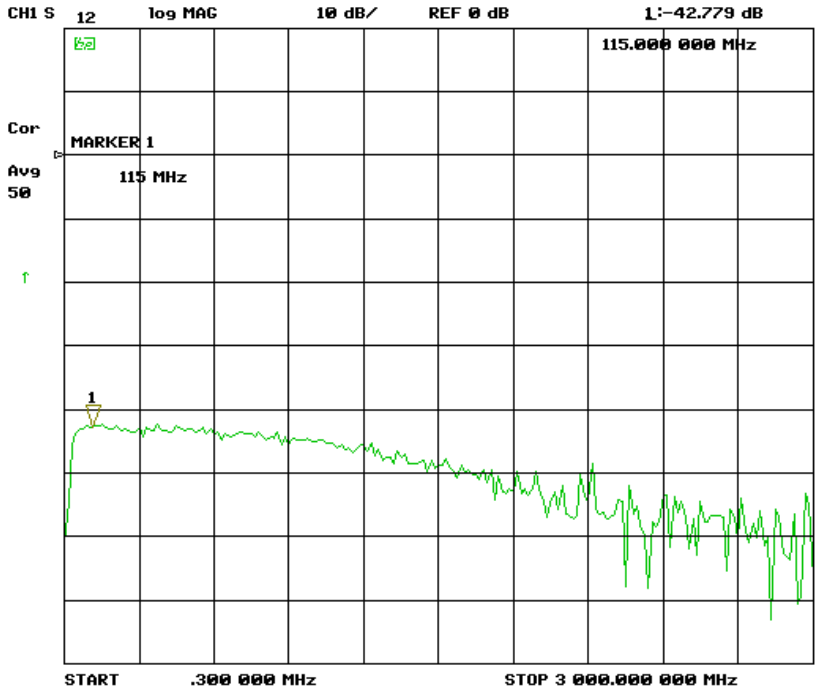


Picture 9 – TBDA1/28dB, gain, 300 kHz – 3 GHz, lin.



Picture 10 – TBDA1/28dB, reverse isolation, 300 kHz – 3 GHz, lin.

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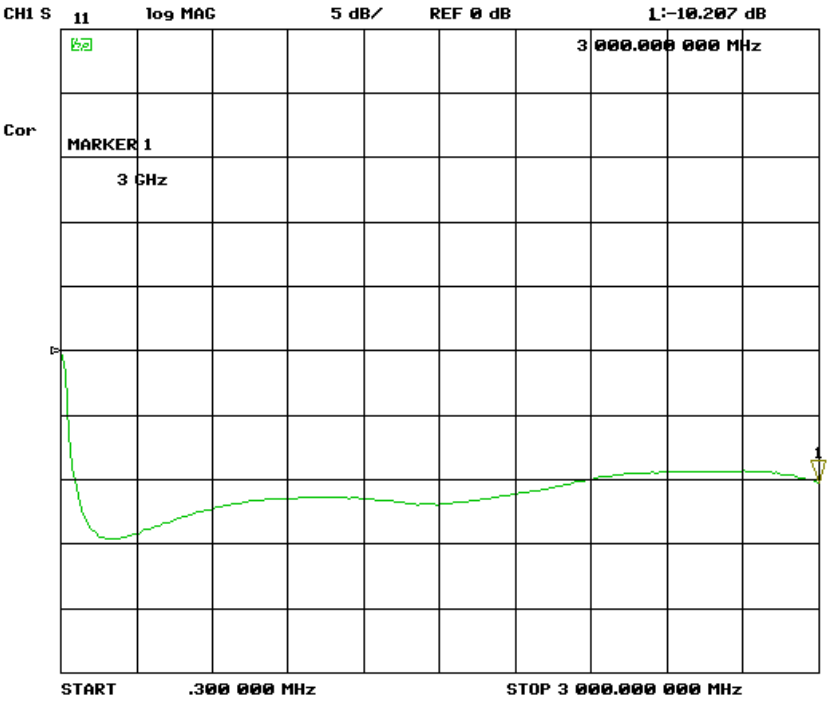
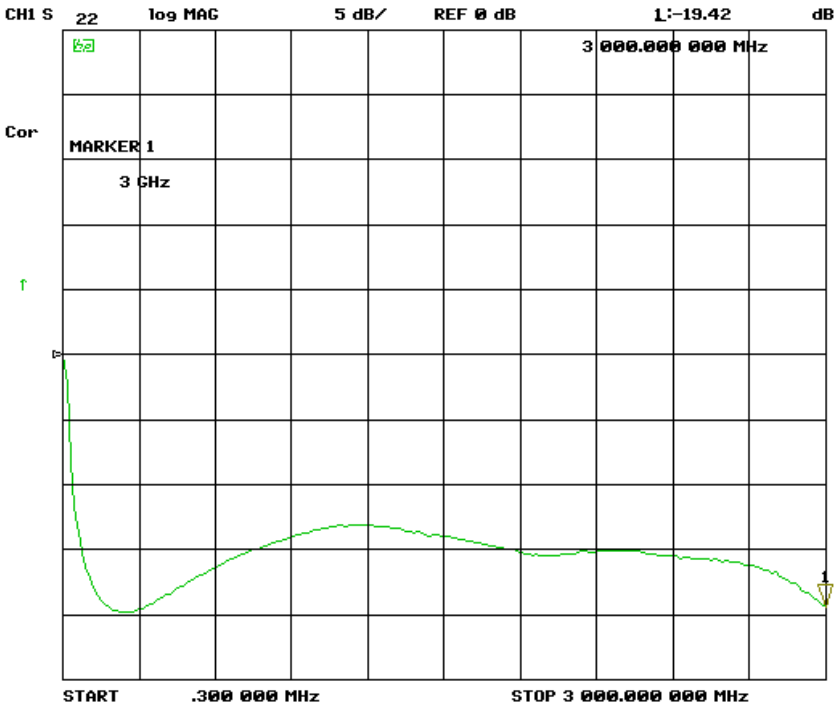


Picture 11 – TBDA1/28dB, input return loss, IS11I, 300 kHz – 3 GHz, lin.



Picture 12 – TBDA1/28dB, output return loss, IS22I, 300 kHz – 3 GHz, lin.

3 Ordering Information

Part Number	Description
TBDA1/14dB	14 dB driver amplifier, 1 pc 25cm SMA-male to SMA-male cable, 1 pc 75cm SMA- male to N-male cable. 1 pc SMA-female to N-male coaxial adapter, USB cable, measurement plot
TBDA1/28dB	28 dB driver amplifier, 1 pc 25cm SMA-male to SMA-male cable, 1 pc 75cm SMA- male to N-male cable. 1 pc SMA-female to N-male coaxial adapter, USB cable, measurement plot

Table 3 – Ordering Information

4 History

Version	Date	Author	Changes
V1.0	16.6.2016	Mayerhofer	Creation of the document
V1.1	14.11.2016	Mayerhofer	Updated chapter 3, deliverables

Table 4 – History