New Age Instruments
& Materials Pvt. Ltd.

RF DRIVER (C -RD20-01)

DATASHEET

The indigenously designed and developed RF driver module C - RD20-01 is optimized for applications requiring an upper operation voltage. It exhibits upto 7 Vpp output voltage and 29 dB gain up to 15 GHz. It is an important component to obtain high quality 2.5 Gbps up to 15 Gbps eye diagrams with low rise and fall time, low jitter and high SNR. It operates from a single power supply for safety and ease of use, and offers gain and cross point controls. It comes with SMA RF connectors and interfaces with external blocks using RS 232 UART interface. This has necessary power generation and protection element during power failure.

APPLICATIONS

- LiNbO3 modulators
- 12.5 Gbps NRZ and RZ
- OC-192 SONET / SDH
- Research & Development

FEATURES

- Bandwidth up to 15 GHz
- Variable Gain Control built-in
- Single 12 V Power supply
- Low Rise time and fall time
- Power failure & overvoltage protection
- RS-232 interface for gain and cross point control

1. Performance Highlights

Parameter	Min	Typ	Max	unit
Cut-off frequencies	0		15G	Hz
Output voltage	3.5		8	V_{pp}
Gain			30	dB
Saturated output power		29	33	dBm
Added jitter				fs
Rise / Fall times	14/14	15/15	17/17	ps

2. DC Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	unit
Supply voltage	V_{bias}	10	12	13	V
Drain Voltage	V_{drain}	5		7	V
Current consumption	I_{bias}	200		450	mA
Cross Point control voltage	V_{g1},V_{g2},V_{g3}	0		1.5	V
Gain control voltage	V_{c1},V_{c2},V_{c3}	0		1.8	V
Temperature of operation	T	0		35	°C

3. Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	unit
Lower frequency	$f_{3dB,\ lower}$	0			kHz
Upper frequency	$f_{3dB,\ upper}$			15	GHz
Gain	S_{21}			30.5	dB
Input voltage	V_{in}	250	400	600	mV
Additive jitter	J_{RMS}		0.6	1.1	ps
Noise Figure	NF				
Power dissipation	$P_{dissipation}$		2.0	3.5	W
Signal to noise ratio	SNR	13.3			dB
Continuous input power	Pin			4	dBm

4. USER INTERFACES

4.1. Connector Housing Accessories

Port	Type	Part Number
RS-232	Header	RCC-SPFSX003-000
RS-232	Crimp	RCC-PAXSC019-401
12V Port	Header	RCC-SPFSC004-000
12V Port	Crimp	RCC-PAXSC020-401

4.2. RS 232 Interface

The crossing control voltage, drain voltage & amplitude control voltage values can be adjusted through command line which is based RS-232 protocol. The RS232 interface is isolated and has voltage swing of +/- 5.7 volt. UART baud rate is 115200 bps.

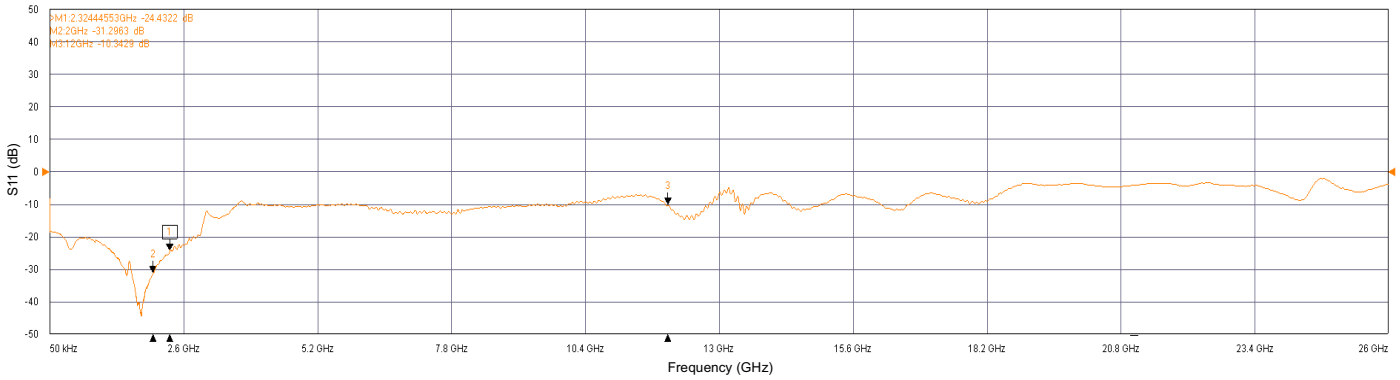
PIN	Type
PIN 1	GND
PIN 2	Tx(OUT)
PIN 3	Rx(IN)

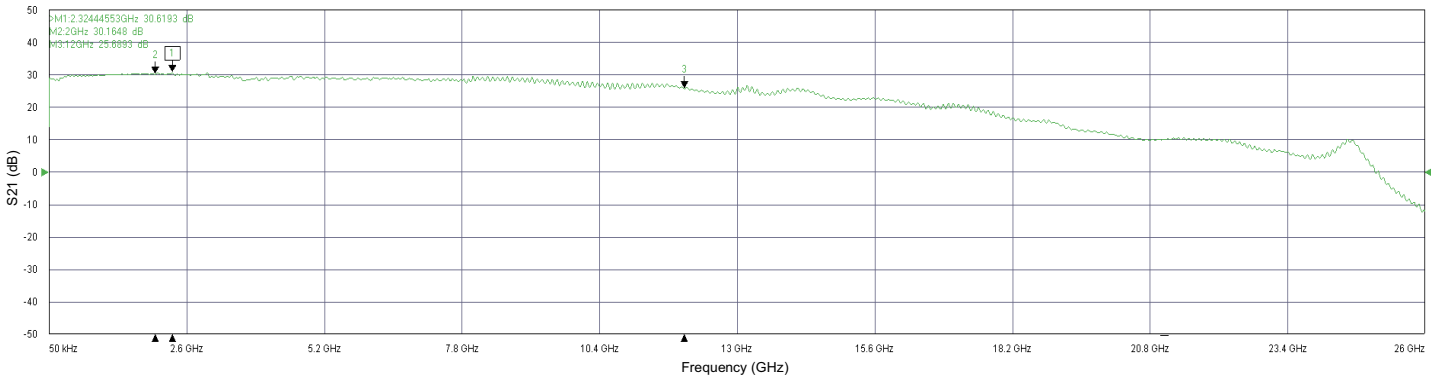
5. DON'TS

Please don't connect RF Inputs without powering RF driver. Connect RF input only after both led indicator go green.

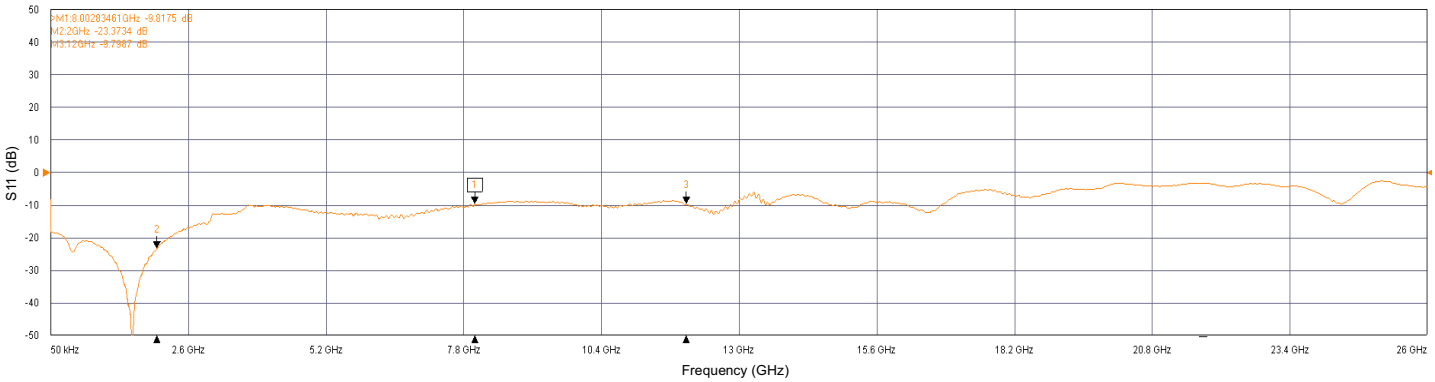
6. Typical Performance Curves

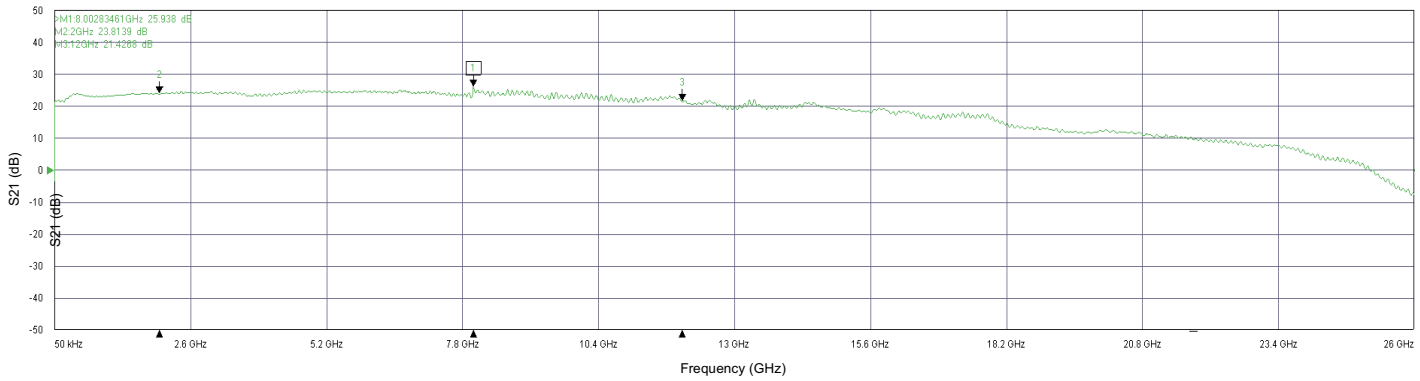
6.1. S parameter at 30dB gain



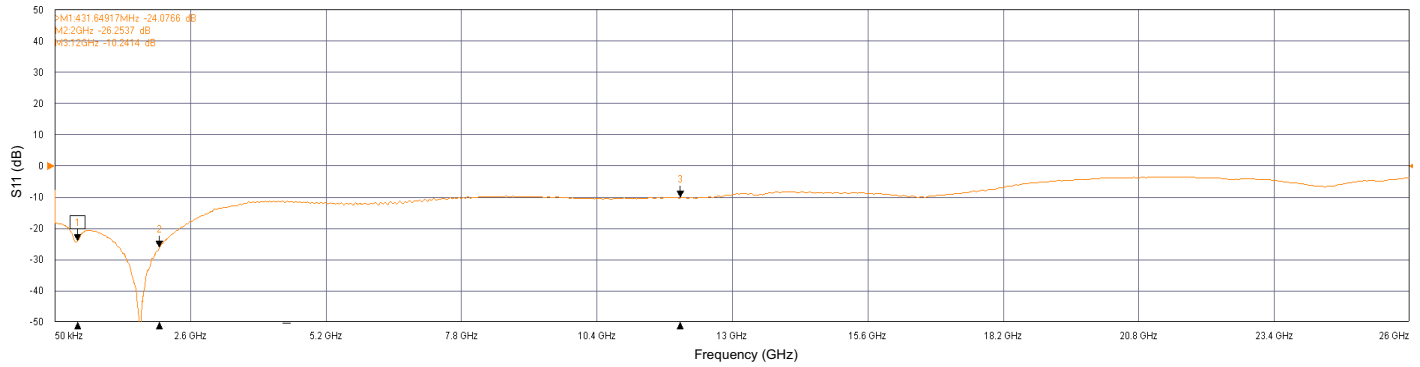


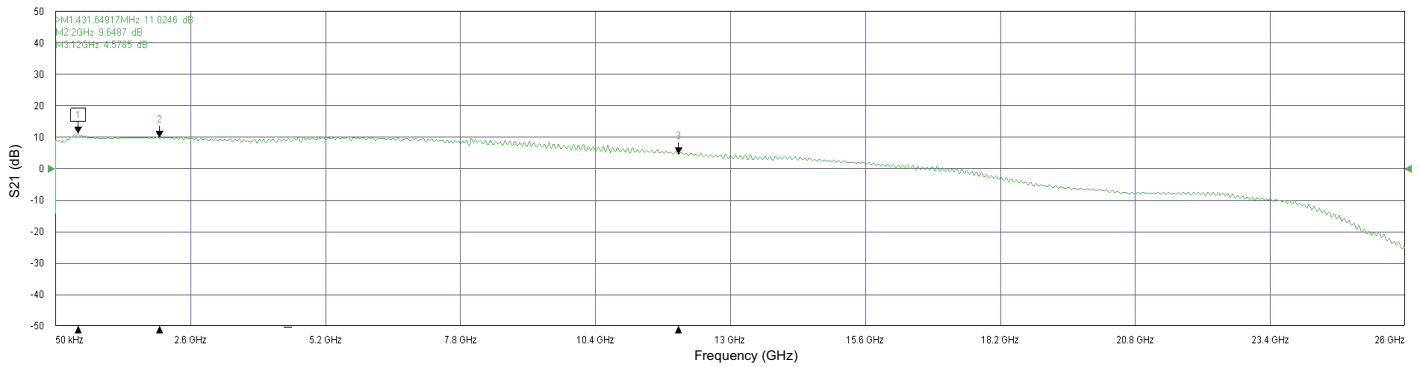
6.2. S parameter at 20dB gain



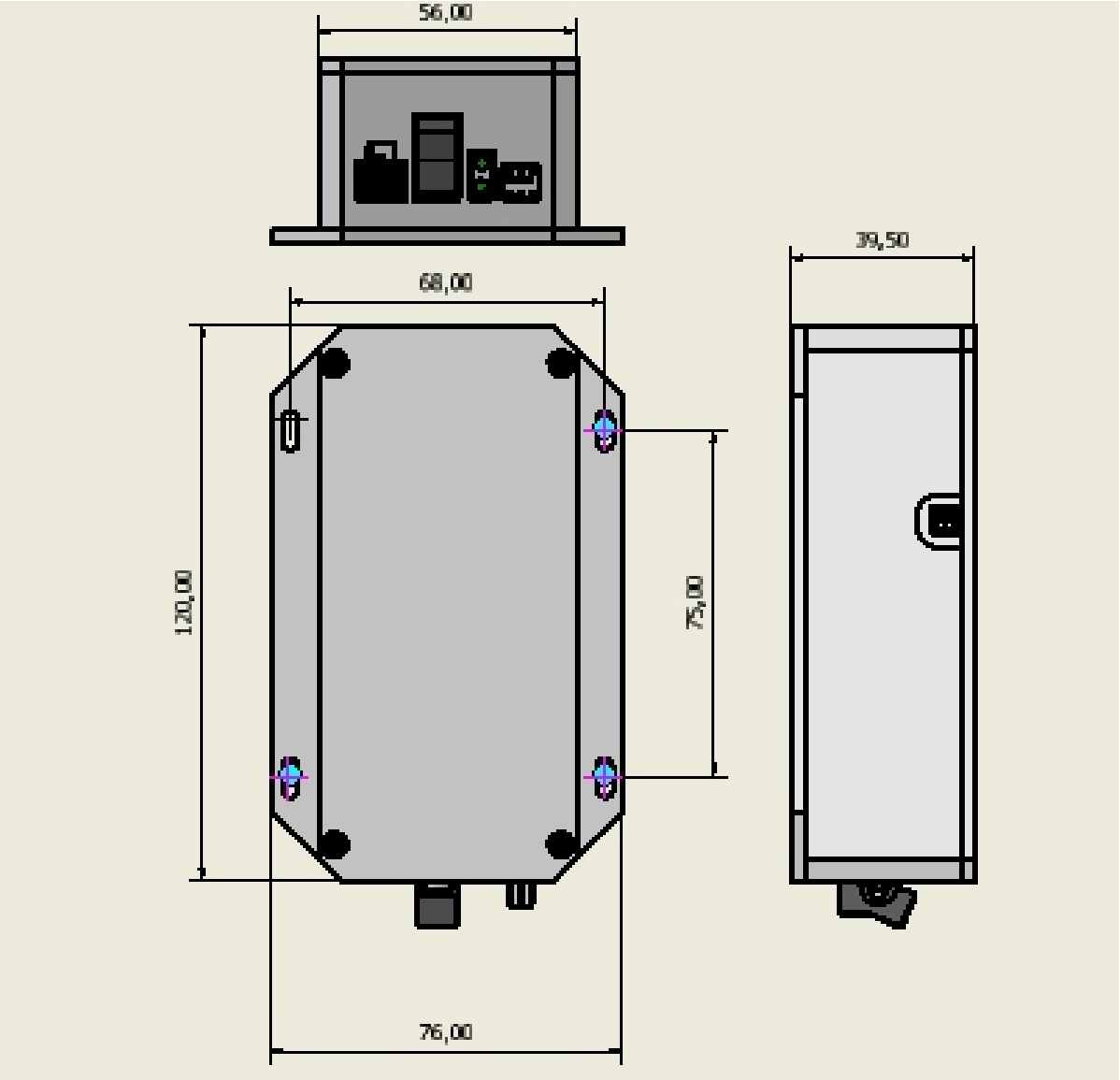


6.3. S parameter at 10dB gain





7. MECHANICAL DIMENSION (All dimensions are in mm)



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