

# DR-VE-0.5-MO Preliminary specification

## SPECIFICATION

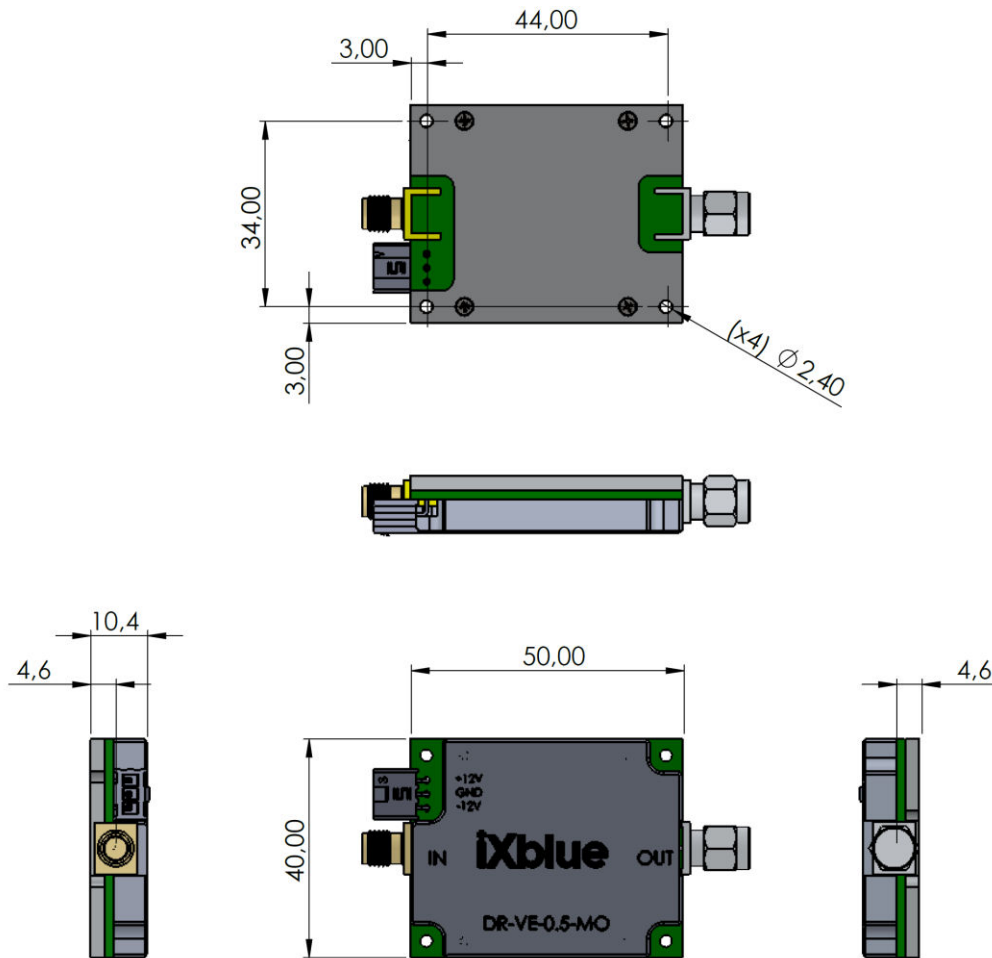
The DR-VE-0.5-MO is a non-inverting VEratile RF amplifier module designed for analog, pulse and digital applications up to 750 MHz.

The following table is a summary of both specifications and measurements. All specifications given at 25°C.

RECOMMENDED OPERATING CONDITIONS					
		Min	Typ	Max	
Input peak-to-peak voltage (Single-ended)	V <sub>pp</sub>	-	1	-	
Input impedance	Ω	-	50	-	
Output impedance matching (from modulator input impedance)	Ω	-	50 or 10 k	-	
Electrical frequency range (Defined)	MHz	DC	750	-	
Low frequency cutoff (-3dB)	Hz	DC	-	-	
High frequency cutoff (-3dB)	MHz	700	750	-	
Voltage gain (10 kΩ output impedance)	V/V	26	28	-	
Power Gain (50 Ω output impedance)	dB	22	23	-	
Output voltage peak to peak (@10MHz) (10 kΩ output impedance)	V	19	19.6	21	
Positive output saturation voltage (10 kΩ output impedance)	V	-	9.8	-	
Negative output saturation voltage (10 kΩ output impedance)	V	-	-9.8	-	
Power supply voltages V <sup>+</sup> (user supplied)	V	11.5	12	13	
Current consumption V <sup>+</sup>	mA	20	-	100	
Power supply voltages V <sup>-</sup> (user supplied)	V	-11.5	-12	-13	
Current consumption V <sup>-</sup>	mA	-20	-	-100	
Analog Mode					
Total harmonic distortion	@10MHz, Pin= -10dBm	%	-	0.08	-
	@50MHz, Pin= -10dBm		-	0.8	-
	@100MHz, Pin= -10dBm		-	3	-
Pulse Mode					
Frequency repetition rate	MHz	0	200	-	
Pulse width	ns	2	-	-	
Rise time / Fall time	ns	-	1	1.2	
Digital Mode					
Data Rate (PRBS Digital Mode)	Mb/s	0	500	-	
Rise time / Fall time	ns	-	1	1.2	
MAXIMUM RATINGS					
Operating temperature	°C	0	-	55	
Storage temperature	°C	-40	-	85	
Maximum input voltage	V <sub>pp</sub>	-	10	-	
Maximum power supply voltage	V	-16	-	16	
MECHANICAL					
Product (module) typical dimension (comes with metallic cover)	mm <sup>3</sup>	-	50 x 40 x 10.4	-	
Input RF connectors	-	SMA female			
Output RF connector	-	SMA male			



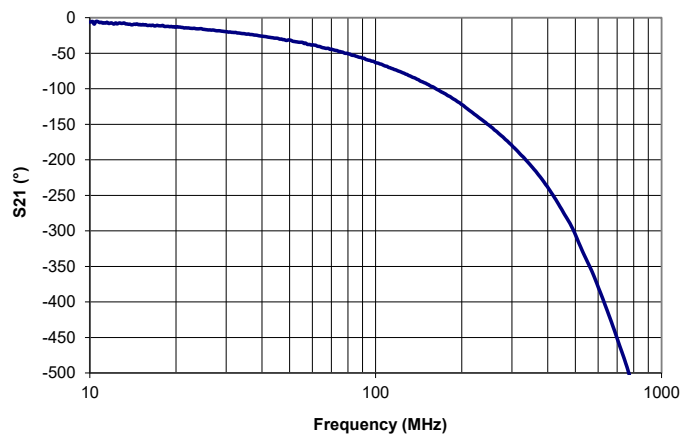
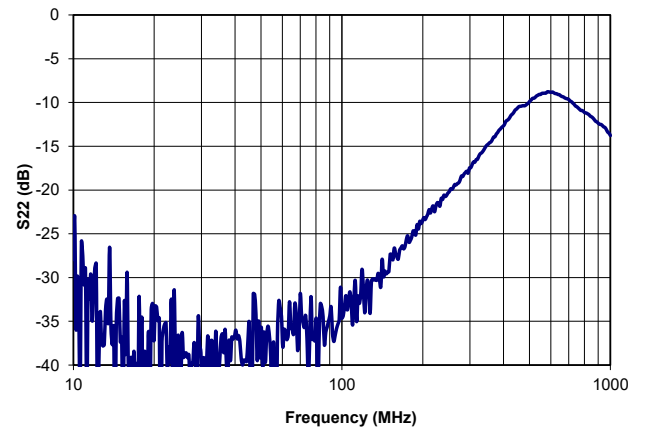
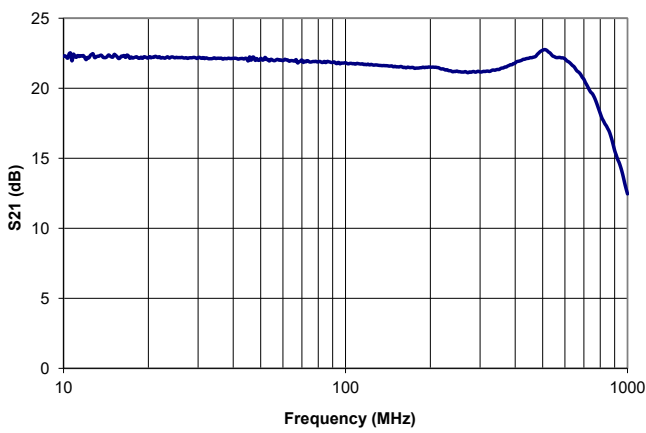
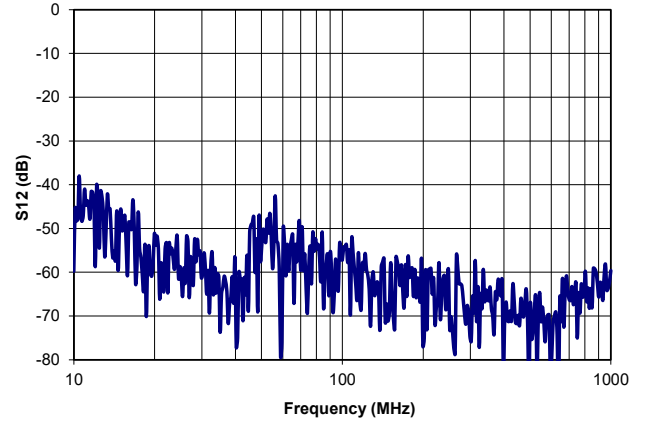
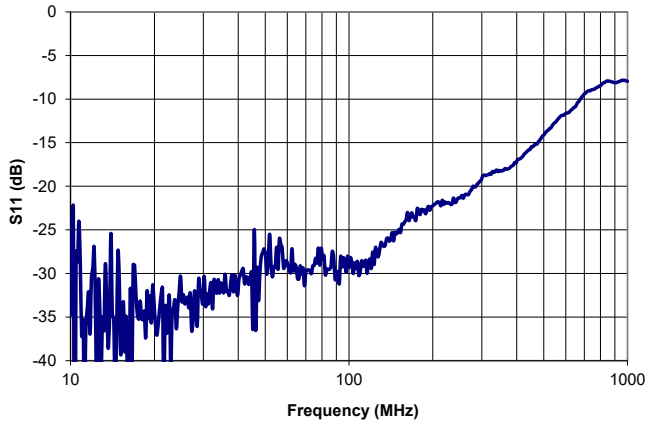
**Mechanical drawing**



**Typical Output Response**

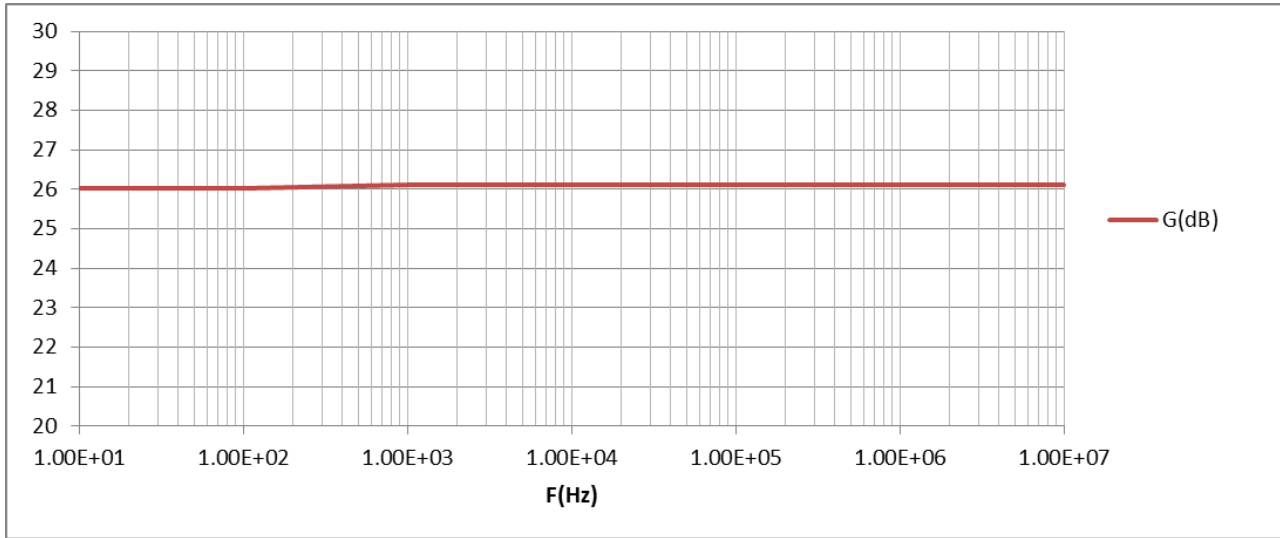
**Measured small signal bandwidth 10 MHz – 1 GHz (Pin = -30 dBm)**

Conditions:  $V^+ = +12V$ ,  $V^- = -12 V$ ,  $50 \Omega$



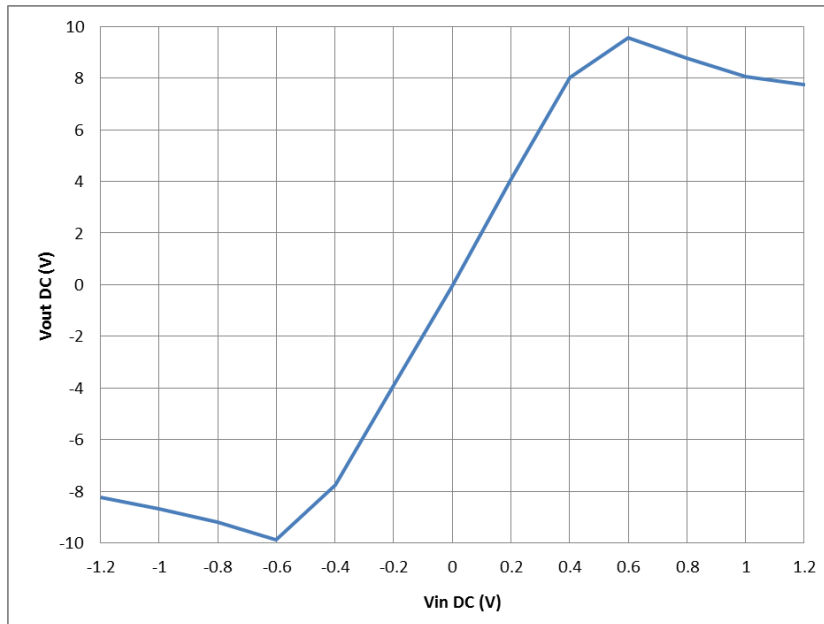
**DC to 10 MHz bandwidth (Vin = 50 mVpp)**

Conditions:  $V^+ = +12\text{ V}$ ,  $V^- = -12\text{ V}$ ,  $10\text{ k}\Omega$



**DC signal gain**

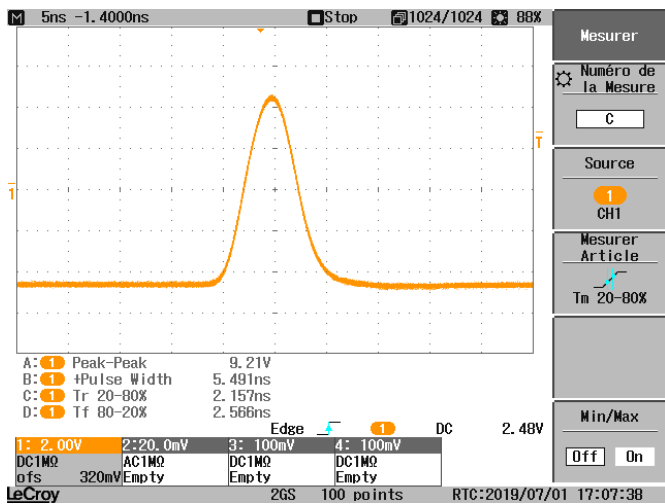
Conditions:  $V^+ = +12\text{ V}$ ,  $V^- = -12\text{ V}$ ,  $10\text{ k}\Omega$



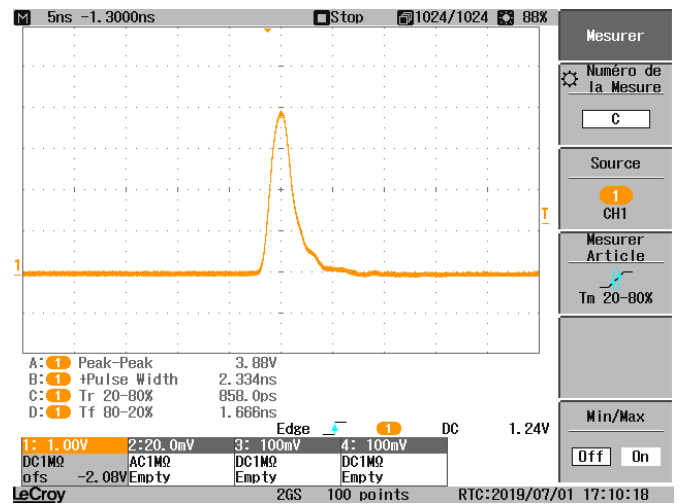
**Pulse Mode**

Conditions:  $V^+ = +12\text{ V}$ ,  $V^- = -12\text{ V}$ .

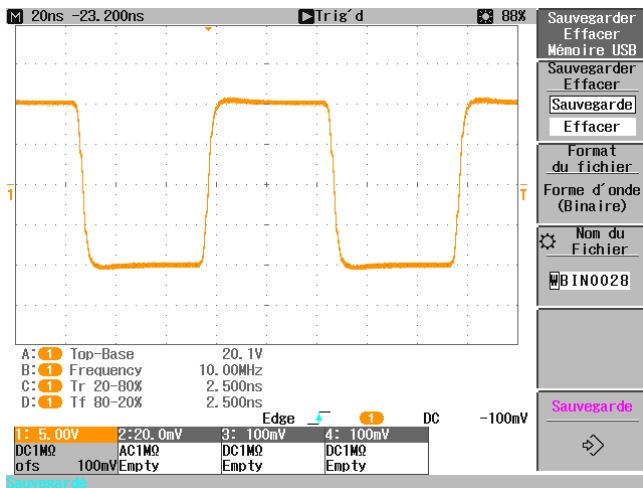
Pulse Width = 5 ns



Pulse Width = 2 ns



Width = 20 ns



Typical 20 Vpp output square signal  
Frequency repetition rate 10 MHz  
Input voltage 750 mVpp  
1 MΩ impedance output matching



**Digital (PRBS) mode**

Conditions:  $V^+ = +12\text{ V}$ ,  $V^- = -12\text{ V}$ ,  $V_{in} = 300\text{ mV}_{pp}$ ,  $50\ \Omega$

Data Rate = 100 Mb/s



Data Rate = 500 Mb/s

