

DR-VE-0.5-MO Preliminary specification

SPECIFICATION

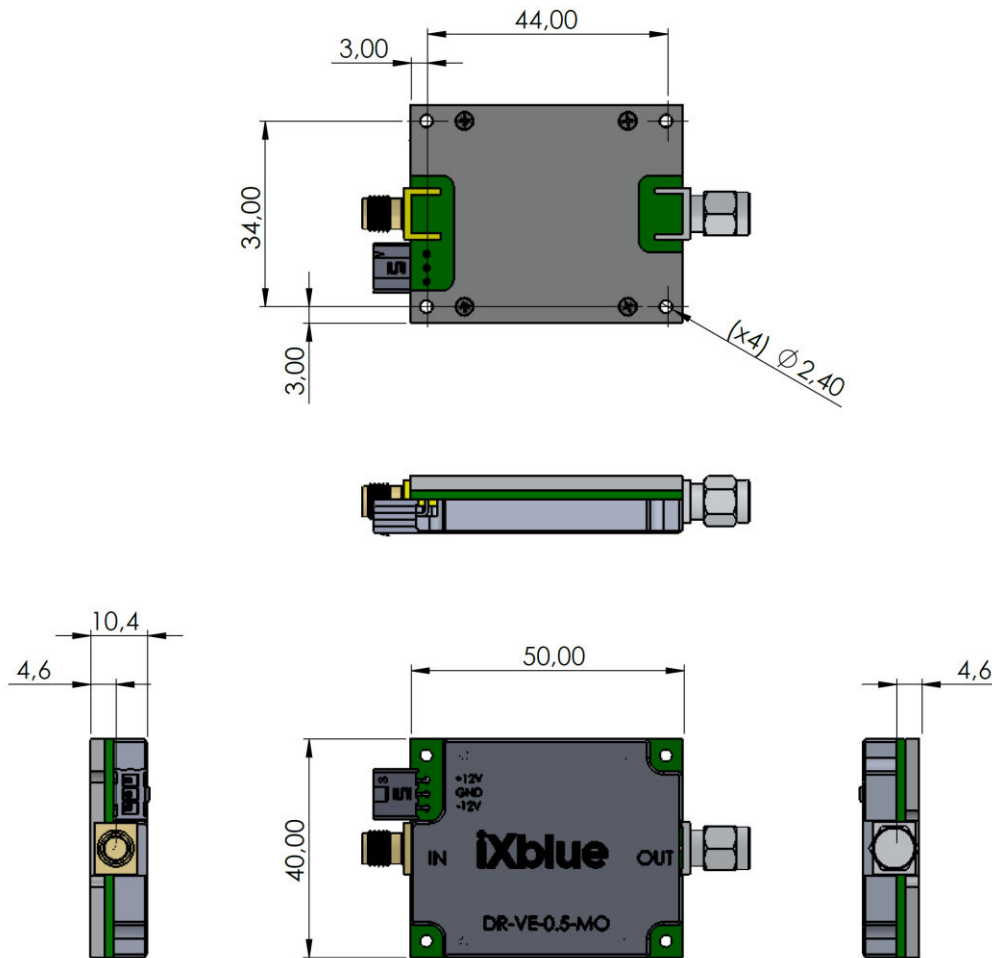
The DR-VE-0.5-MO is a non-inverting VEratile RF amplifier module designed for analog, pulse and digital applications up to 750 MHz.

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 _{pp}	-	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 ⁺ (user supplied)	V	11.5	12	13	
Current consumption V ⁺	mA	20	-	100	
Power supply voltages V ⁻ (user supplied)	V	-11.5	-12	-13	
Current consumption V ⁻	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 _{pp}	-	10	-	
Maximum power supply voltage	V	-16	-	16	
MECHANICAL					
Product (module) typical dimension (comes with metallic cover)	mm ³	-	50 x 40 x 10.4	-	
Input RF connectors	-	SMA female			
Output RF connector	-	SMA male			



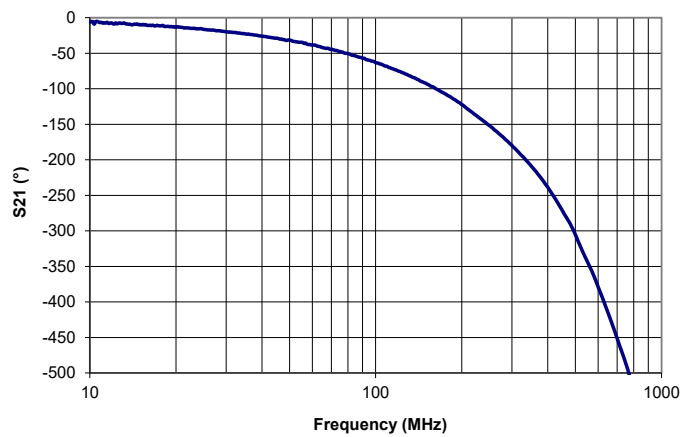
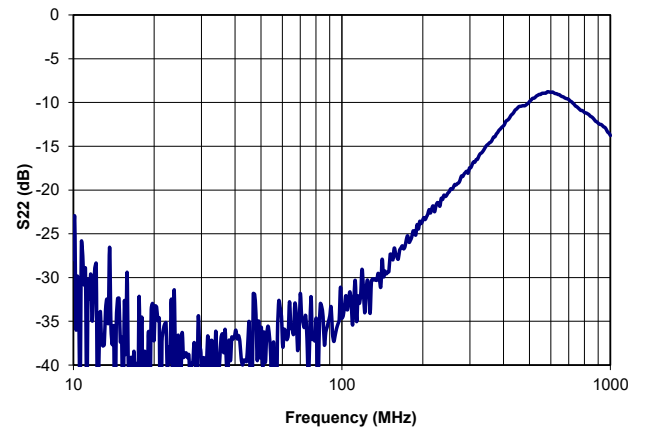
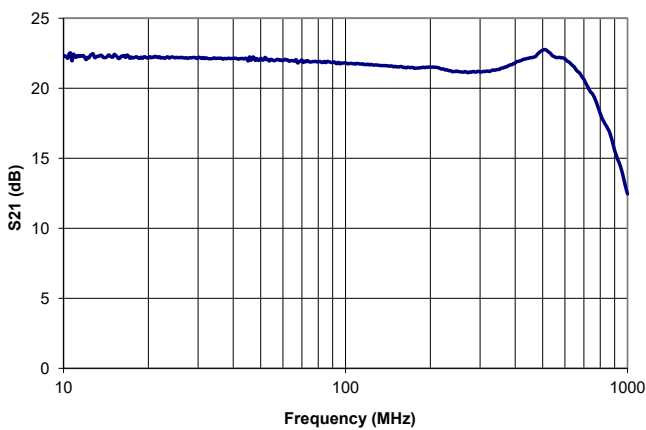
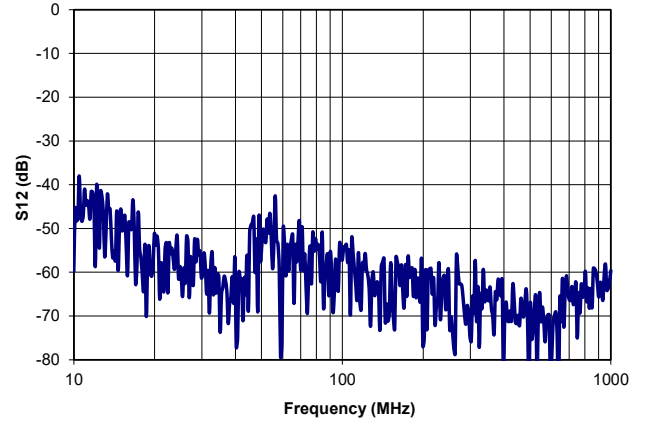
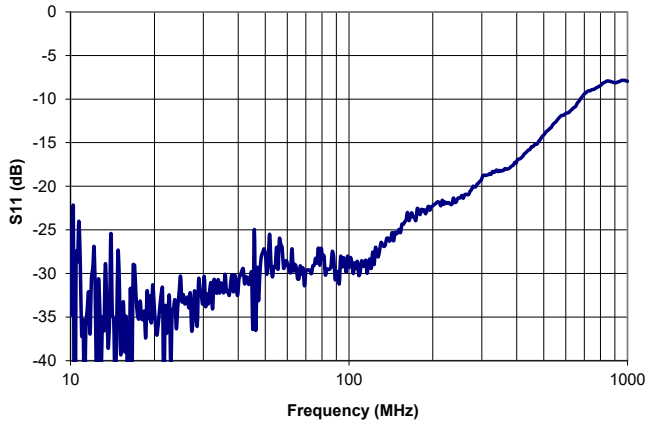
Mechanical drawing



Typical Output Response

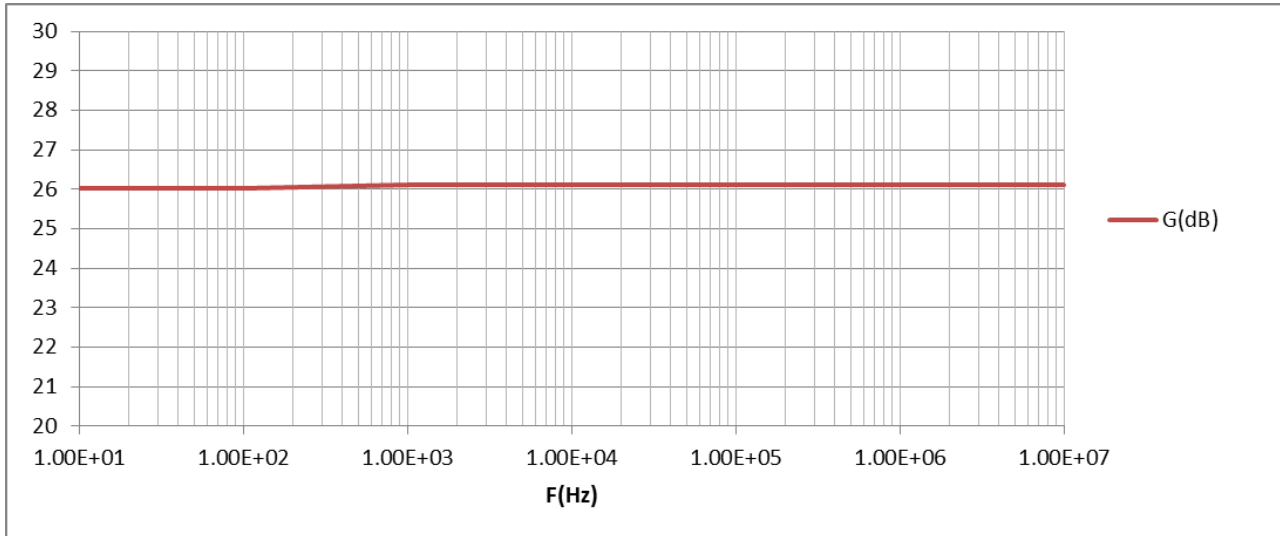
Measured small signal bandwidth 10 MHz – 1 GHz (Pin = -30 dBm)

Conditions: $V^+ = +12V$, $V^- = -12V$, 50Ω



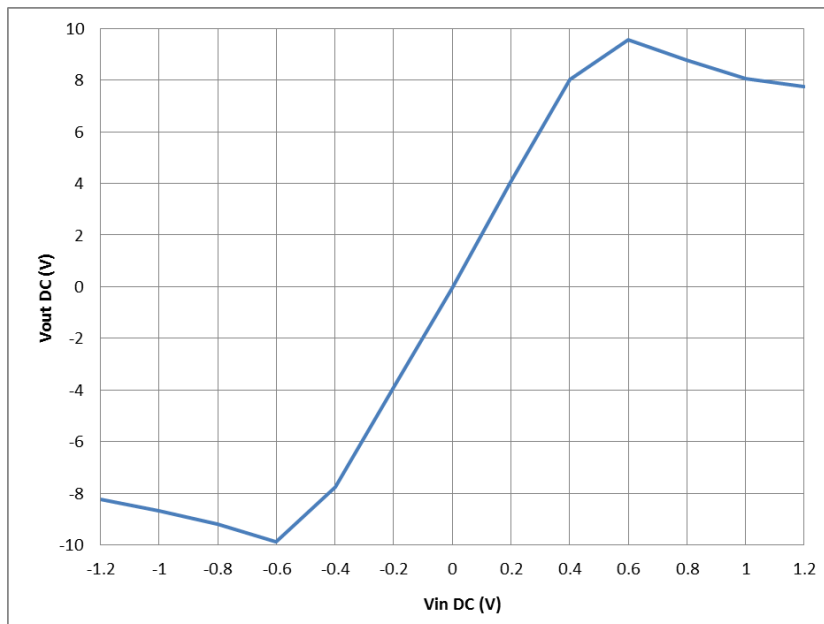
DC to 10 MHz bandwidth (Vin = 50 mVpp)

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



DC signal gain

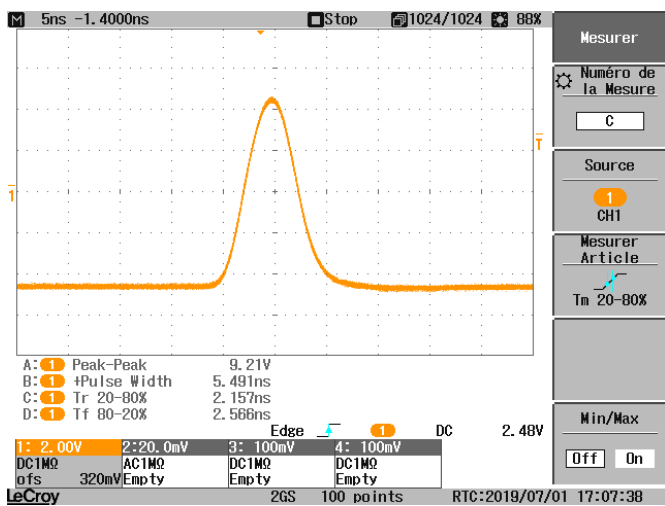
Conditions: $V^+ = +12\text{ V}$, $V^- = -12\text{ V}$, $10\text{ k}\Omega$



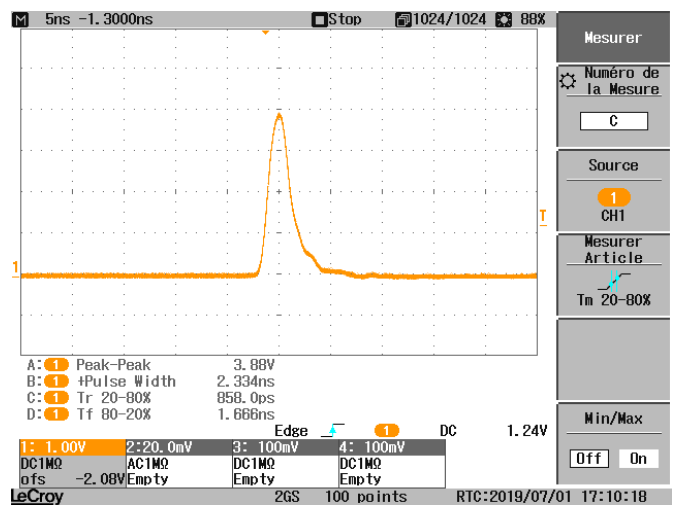
Pulse Mode

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

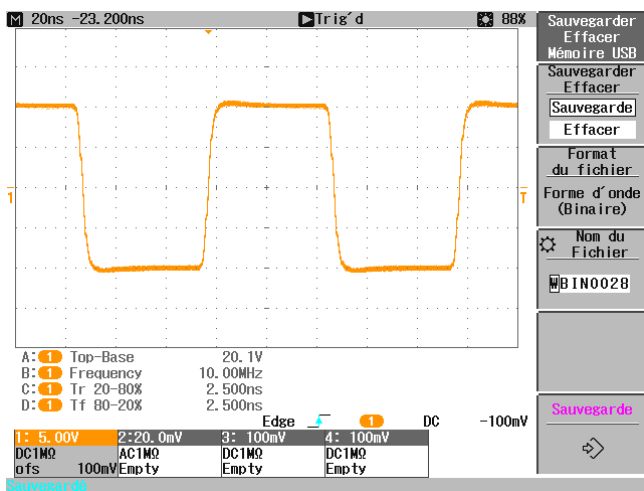
Pulse Width = 5 ns



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

