DR-VE-0.5-MO Preliminary specification

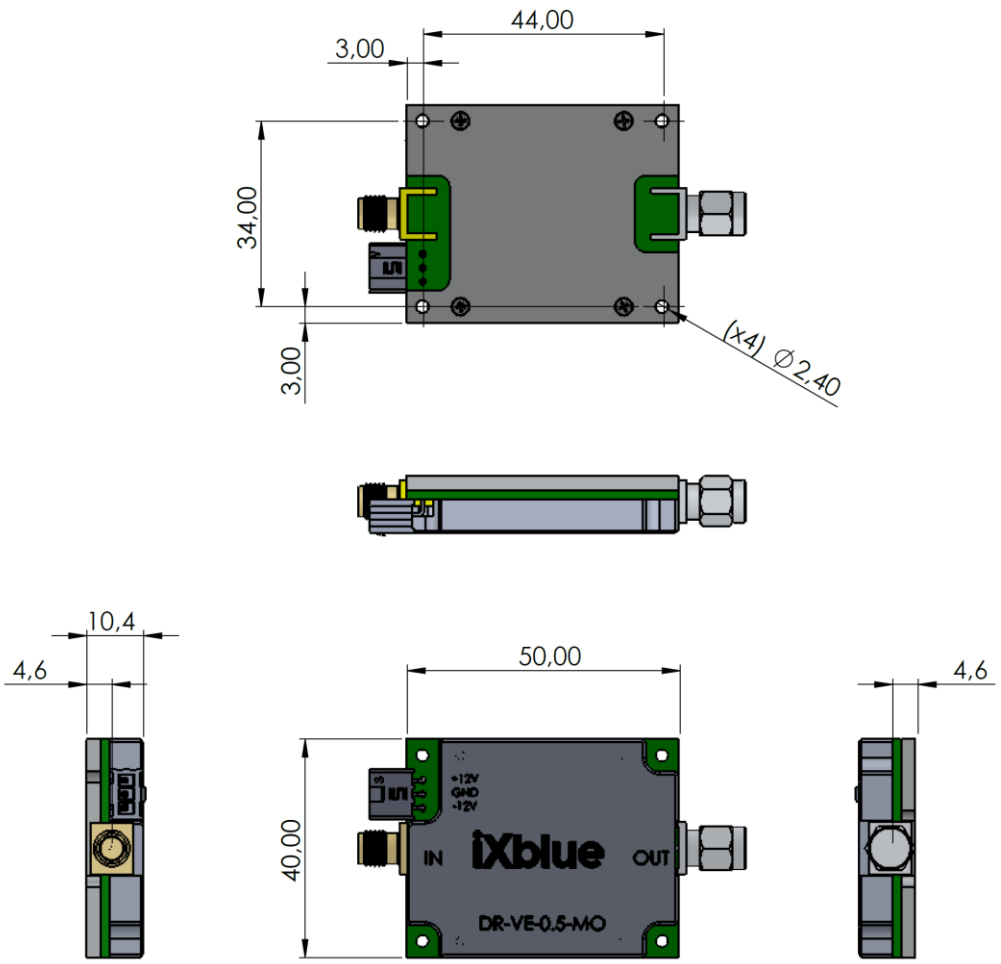
SPECIFICATION

The DR-VE-0.5-MO is a non-inverting VErsatile 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		Vpp	-	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		

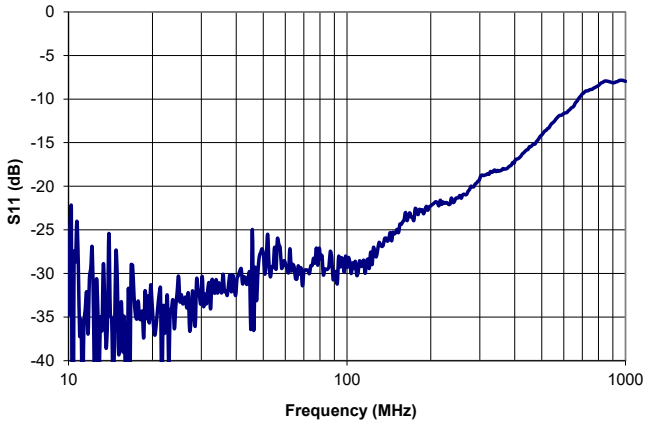
Mechanical drawing

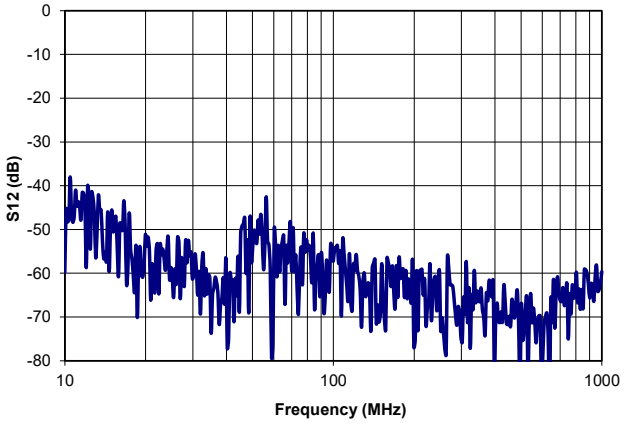


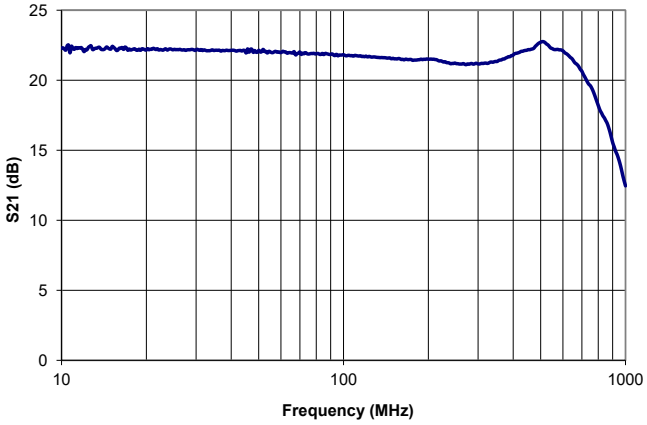
Typical Output Response

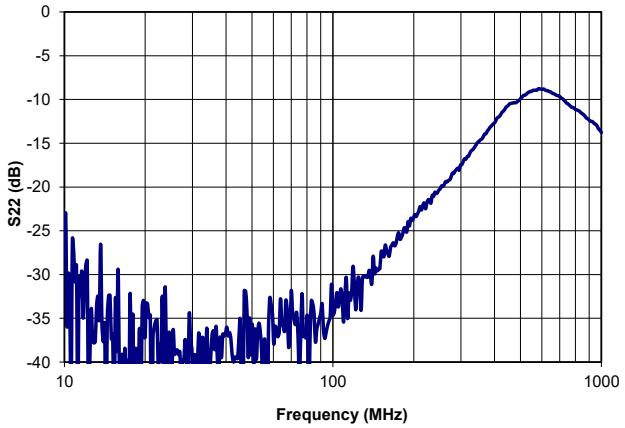
Measured small signal bandwidth 10 MHz – 1 GHz (Pin = -30 dBm)

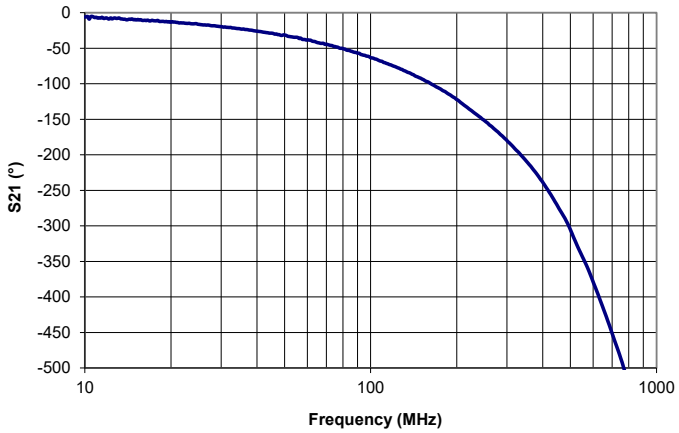
Conditions: V^+ = +12V, V^- = -12 V, 50 Ω





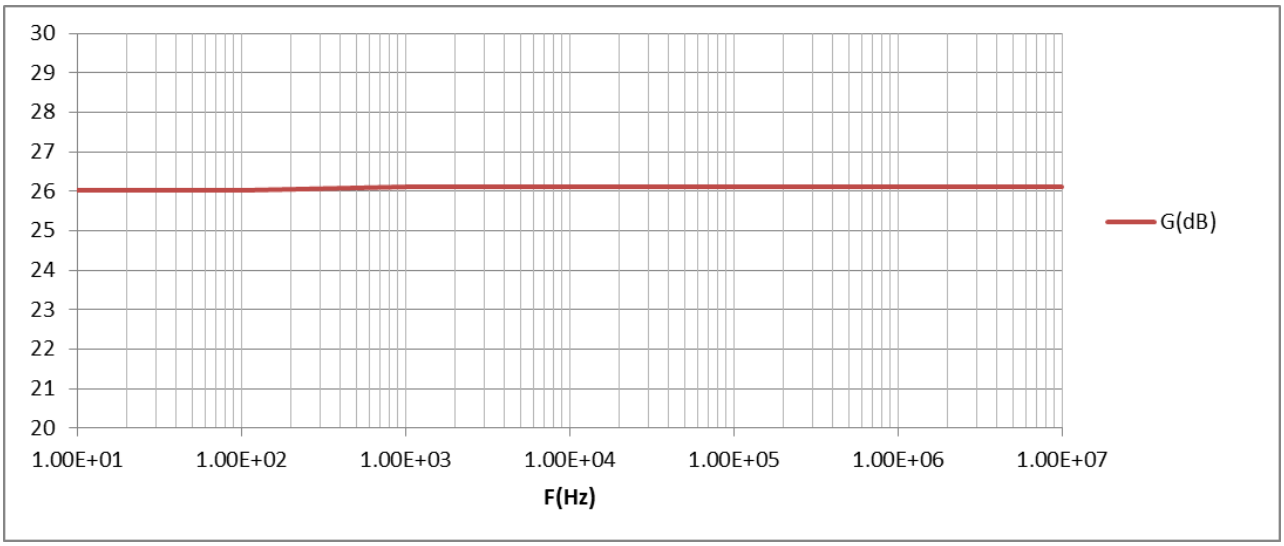






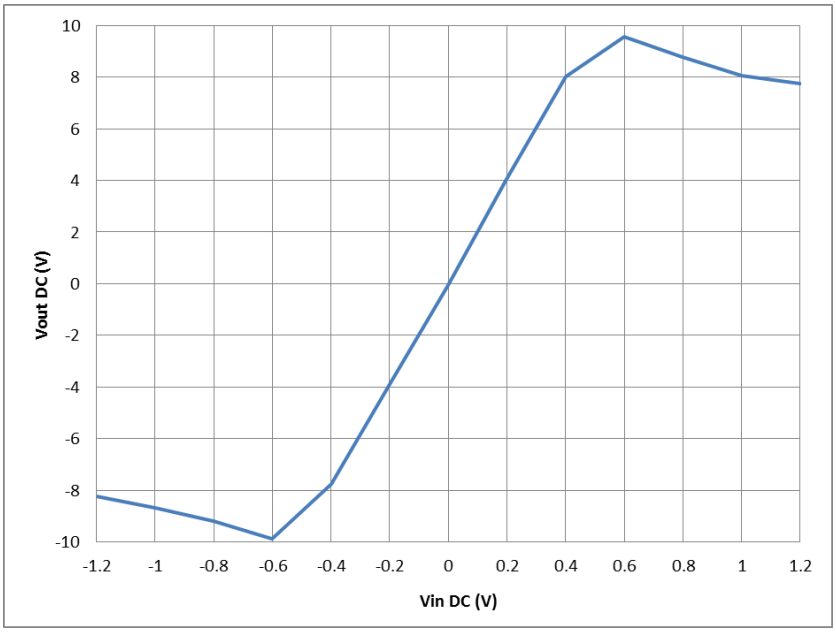
DC to 10 MHz bandwidth (Vin = 50 mVpp)

Conditions: V^+ = +12 V, V^- = -12 V, 10 kΩ



DC signal gain

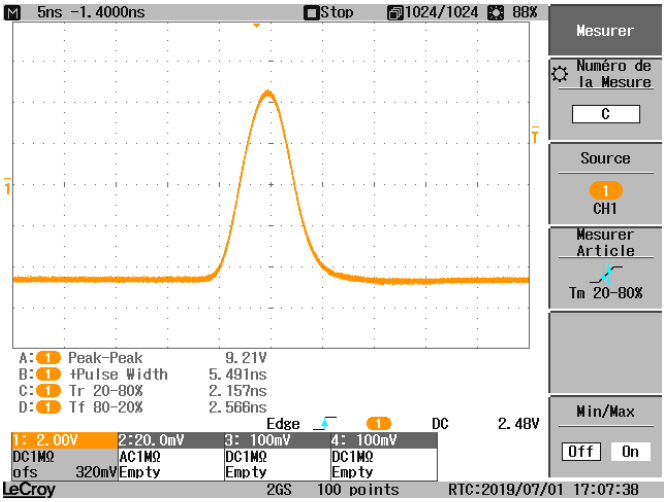
Conditions: V^+ = +12 V, V^- = -12 V, 10 kΩ



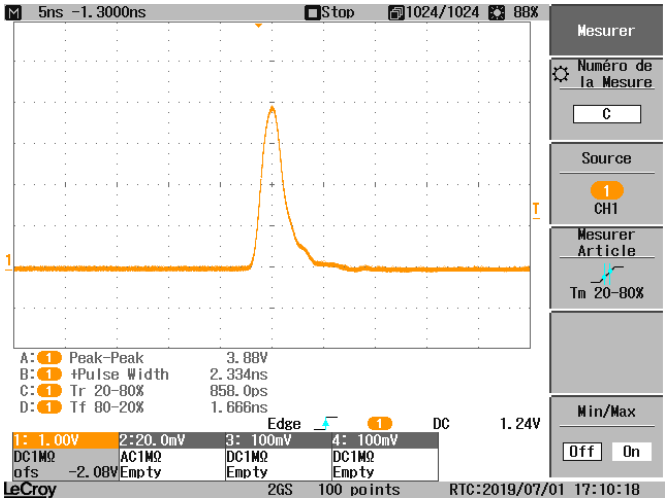
Pulse Mode

Conditions: V^+ = +12 V, V^- = -12 V.

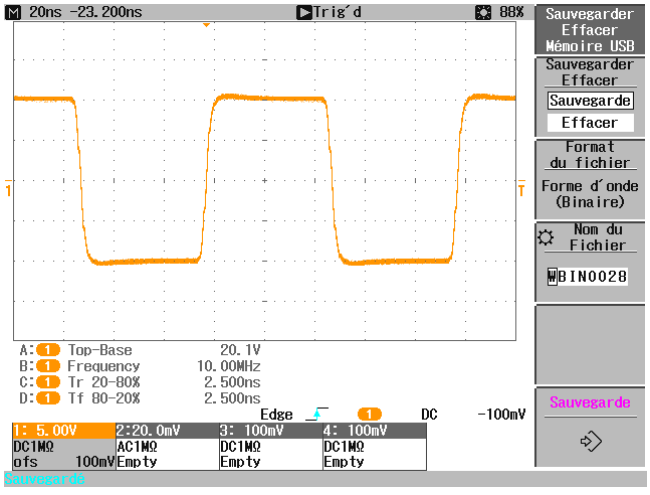
Pulse Width = 5 ns



Pulse Width = 2 ns



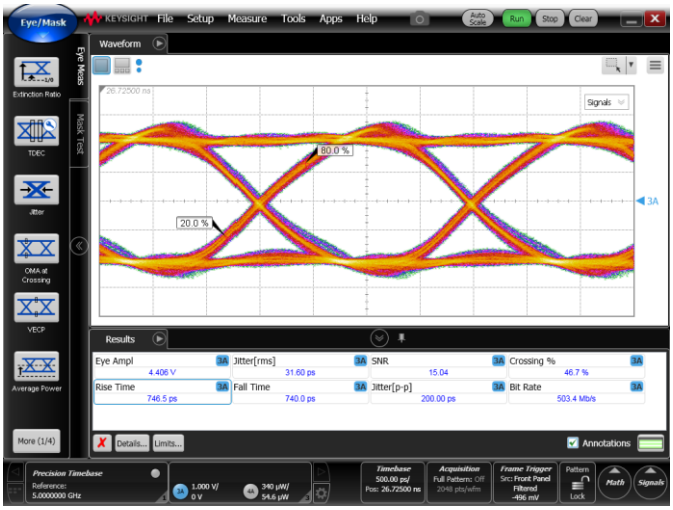
Width = 20 ns



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 V, V^- = -12 V, V_{in} = 300 mV_{pp}, 50 Ω

Data Rate = 100 Mb/s	Data Rate = 500 Mb/s
	

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