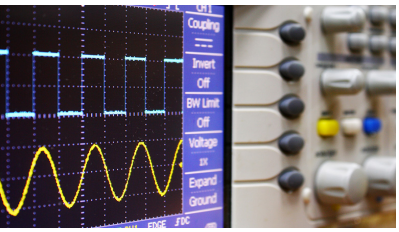
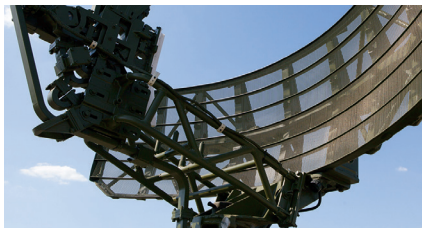
MMIC Selection Guide

The Ultimate in Performance MMICs





DC-65GHz

Broadband Amplifiers & Modules

Low-Noise Amplifiers

Prescalers

Switches

Attenuators

Microsemi
Power Matters.™

MMIC Selection Guide

Microsemi's portfolio of MMIC products targets a broad range of applications including those in electronic warfare, radars, instrumentation (test and measurement) and microwave communications. The portfolio comprises broadband amplifiers (both power and low-noise), amplifier modules, prescalers, attenuators and switches spanning DC to 65GHz based on high-performance process technologies. Microsemi offers 17 distributed amplifier products including industry-leading DC-65GHz MMICs. Microsemi's prescalers combine higher frequency operation, the flexibility to divide by a large number of ratios and very good residual phase noise.

Broadband Amplifiers

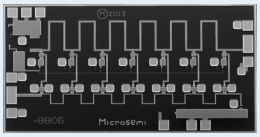
Function	Frequency (GHz)	P_{1dB} (dBm)	Gain (dB)	OIP3 (dBm)	NF (dB)	Bias	Package	Part Number
Wideband Amp	DC-14	7.0-18.0[1]	13.0	17.0-29.0[1]	2.6 @ 10GHz	4V, 15-80mA[1]	Die	MMA015AA
Wideband Amp	DC-15	7.0-18.0[1]	14.0	17.0-29.0[1]	2.6 @ 10GHz	4V, 15-80mA[1]	Die	MMA016AA
Wideband LNA	DC-22	15.0	16.0	28.0	1.7 @ 10GHz	8V, 60mA	Die	MMA001AA
Wideband LNA	DC-30	14.0-17.0	17.0	-	-	5V, 150mA	Die	MMA022AA
Wideband Amp	DC-30	18.0-24.0	17.0	-	3.0 @ 10GHz	8V, 250mA	Die	MMA023AA
Wideband Amp	DC-30	21.0	10.0	-	5.5 @ 20GHz	8V, 250mA	Die	MMA024AA
Wideband LNA	DC-30	14.0-17.0	17.0	-	1.9 @ 15GHz	5V, 150mA	Die	MMA025AA
Wideband LNA	DC-30	18.0-20.0	10.5	-	4.5 @ 20GHz	7V, 150mA	Die	MMA026AA
Wideband Amp	DC-30	14.0	11.0	-	2.5 @ 20GHz	4.5V, 85mA	Die	MMA027AA
Wideband Amp	DC-35	15.0-19.0	19.0	-	-	5V, 180mA	7x7 QFN[2]	UAS3LK
Wideband Amp	DC-45	15.0-21.0	11.0	-	4.5 @ 20GHz	7V, 150mA	Die	MMA029AA
Wideband LNA	DC-45	11.5-14.0	11.5	-	2.5 @ 20GHz	4.5V, 85mA	Die	MMA030AA
Wideband Amp	DC-45	21.0	10.0	-	5.5 @ 20GHz	8V, 250mA	Die	MMA031AA
Wideband Amp	DC-45	17.0-21.0	10.5	-	5.5 @ 20GHz	8V, 250mA	Die	MMA032AA
Wideband Amp	DC-45	13.0-15.5	11.0	-	3.0 @ 20GHz	7V, 85mA	Die	MMA033AA
Wideband Amp	DC-65	17.0-21.0	10.5	-	5.5 @ 20GHz	8V, 250mA	Die	MMA034AA
Wideband Amp	DC-65	15.0-21.0	11.0	-	4.5 @ 20GHz	7V, 150mA	Die	MMA035AA
Wideband LNA	DC-65	11.0-14.0	11.0	-	2.3 @ 20GHz	4.5V, 85mA	Die	MMA036AA
Wideband Amp	2-16	5.5-18.5[1]	11.5	13.5-26.5[1]	-	4V, 23-95mA[1]	Die	MMA017AA
Wideband LNA	2-22	13.0	13.5	26.0	1.9 @ 10GHz	5V, 60mA	Die	MMA003AA
Wideband LNA	2-22	15.0	12.5	25.0	1.9 @ 10GHz	8V, 60mA	Die	MMA005AA
Wideband Amp	5-18	17.5	13.0	-	6.5 @ 10GHz	5V, 130mA	3x3 QFN	UA5M15MP
Wideband Amp	5-20	17.5	15.5	-	5.5 @ 10GHz	5V, 135mA	Die	MMA021AA
Medium Power Amp	5-20	19.0	18.0	26.0	-	5V, 125mA	Die	MMA002AA
Wideband LNA	6-18	15.0	21.0	28.0	1.5 @ 10GHz	4V, 100mA	Die	MMA004AA

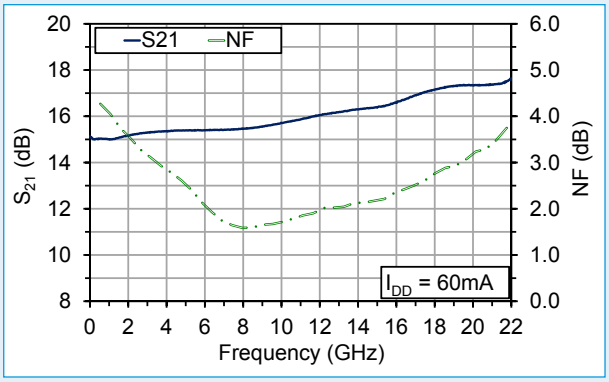
[1] Power can be selected by choosing on-chip source resistor.
[2] Hermetic package

The Ultimate in Performance MMICs

MMA001AA

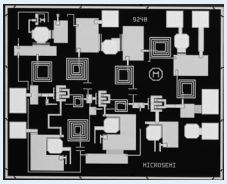
DC-20GHz 16dB Gain Wideband LNA

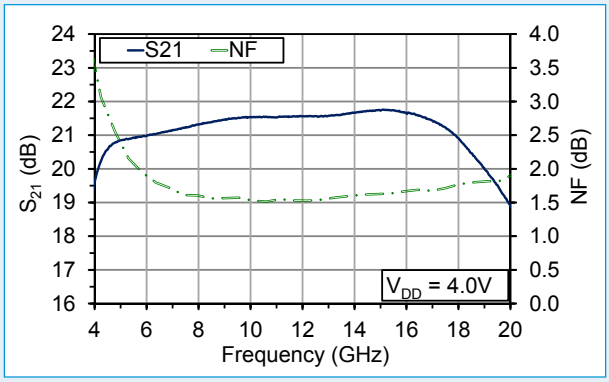




MMA004AA

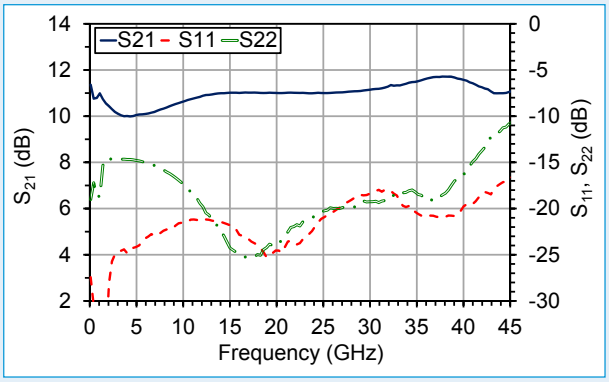
6-18GHz 21dB Gain Wideband LNA





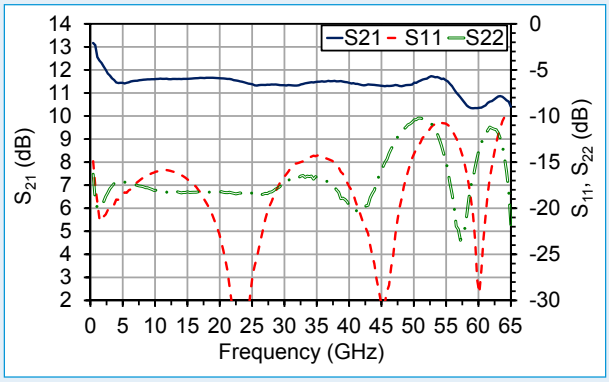
MMA029AA

DC-45GHz 11dB Gain Wideband Amplifier



MMA036AA

DC-65GHz 11dB Gain Wideband Amplifier



Prescalers

Frequency (GHz)	Function	Pout (dBm)	10kHz SSB Noise (dBc/Hz)	Pdiss (W)	Package	Part Number
DC-9	/8 to /511, all integers	+4	-150	0.46	6x6 QFN	UXN6M9P
DC-14	/8 to /511, all integers	+4	-147	1.10	6x6 QFN	UXN14M9P
DC-15	/1 to /(2^{32}-1)	+4	-150	0.30-0.80	4x4 Ceramic	UXN14M32K
DC-15	/2/4/8 or /4/5/6/7/8/9	+5	-153	0.60	4x4 QFN	UXM15P
DC-20	/2/4/8	+5	-153	0.50	4x4 QFN	UXC20P
DC-20	/1/2/4/8	+5	-153	0.43	4x4 QFN	UXD20P
DC-26.5	/1/2/4/8	+5	-153	0.43	4x4 Ceramic	UXD20K
0.05-15	/2 to /2^{20}	-4	-153	1.40	6x6 QFN	MX1DS10P

Switches

Function	Frequency (GHz)	Insertion Loss (dB)	Isolation (dB)	P1dB (dBm)	Control Voltage	Package	Part Number
SPDT Reflective	32-38	0.7	25	>40	+/-15V	Die	MMS003AA[1]

[1] Subject to ITAR Control

Voltage Variable Attenuators

Function	Frequency (GHz)	Insertion Loss (dB)	Dynamic Range (dB)	Return Loss (dB)	Input P1dB (dBm)	Package	Part Number
Analog VVA	DC-40	<3	17	>8	>8	Die	MMS005AA
Analog VVA	DC-50	<5	27	>12	>3	Die	MMS004AA

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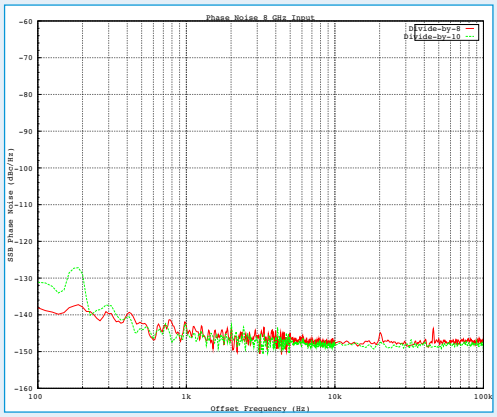
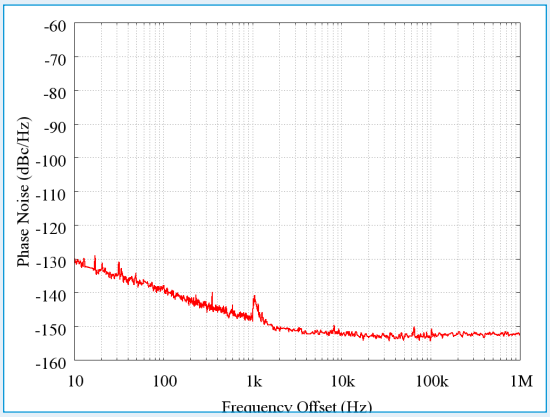
UXN14M32K

/1 to /(2^{32}-1) DC-15GHz
Prescaler



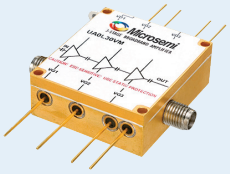
UXD20K

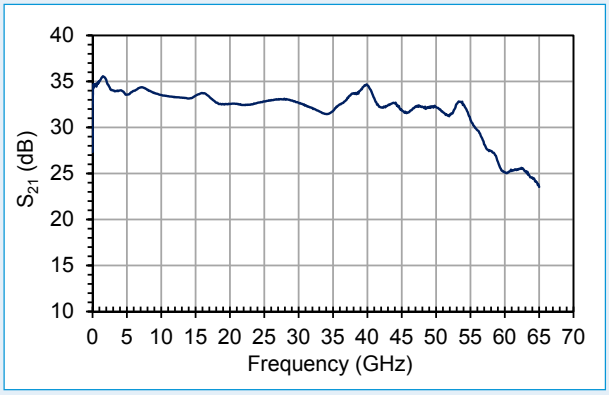
/1/2/4/8 DC-26.5GHz
Prescaler



UA0L65VM

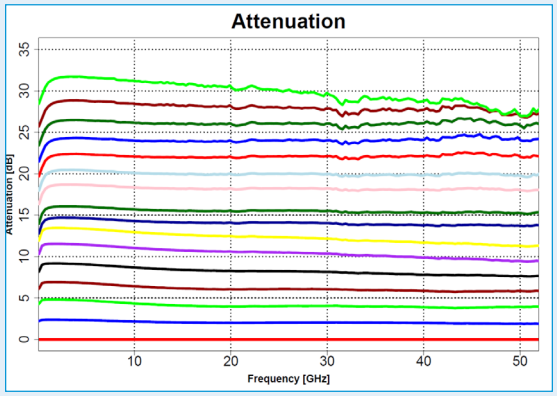
DC-65GHz
WidebandAmplifier
Module





MMS004AA

DC-50GHz Voltage
Variable Attenuator



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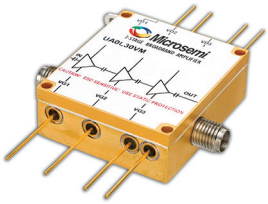
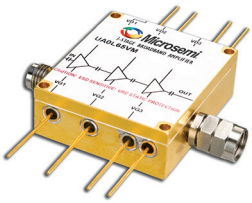
Wideband Amplifier Modules

Frequency (GHz)	Psat (dBm)	Gain (dB)	Flatness (dB)	NF (dB)	Bias	Connector[1]	Part Number
0.0001-30	23	33	±2	4.5 @ 15GHz	7V, 475mA	2.92 mm "K"	UA0L30VM
0.0001-65	22	23-35	-	5.2 @ 30GHz	7V, 475mA	2.4 mm	UA0L65VM
0.01-50	22-30	25	±3	10.0 @ 30GHz	7V, 1800mA	2.4 mm	UA0U50HM
2-50	22-30	23-30	±4	10.5 @ 30GHz	7V, 1800mA	2.4 mm	UA2V50HM
2-50	22-30	18	±4.5	-	6V, 1600mA	2.4 mm	UA2V50LM

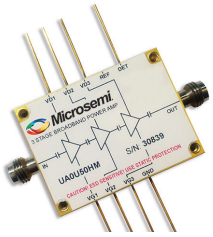
[1] Contact sales for additional connector options and bias board information.



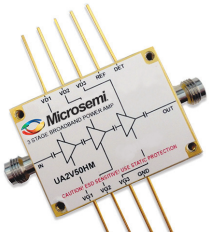
UA0L30VM



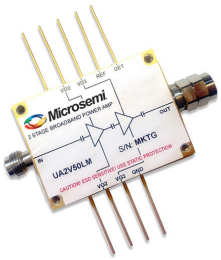
UA0L65VM



UA0U50HM



UA2V50HM



UA2V50LM

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