



# High Performance MMICs



2023  
MMIC Product  
Selection Guide

**MACOM**<sup>®</sup>

*Partners from RF to Light*

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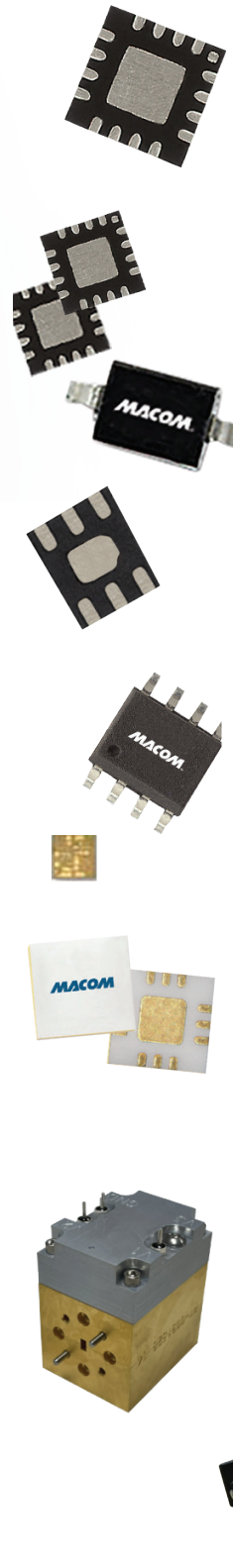


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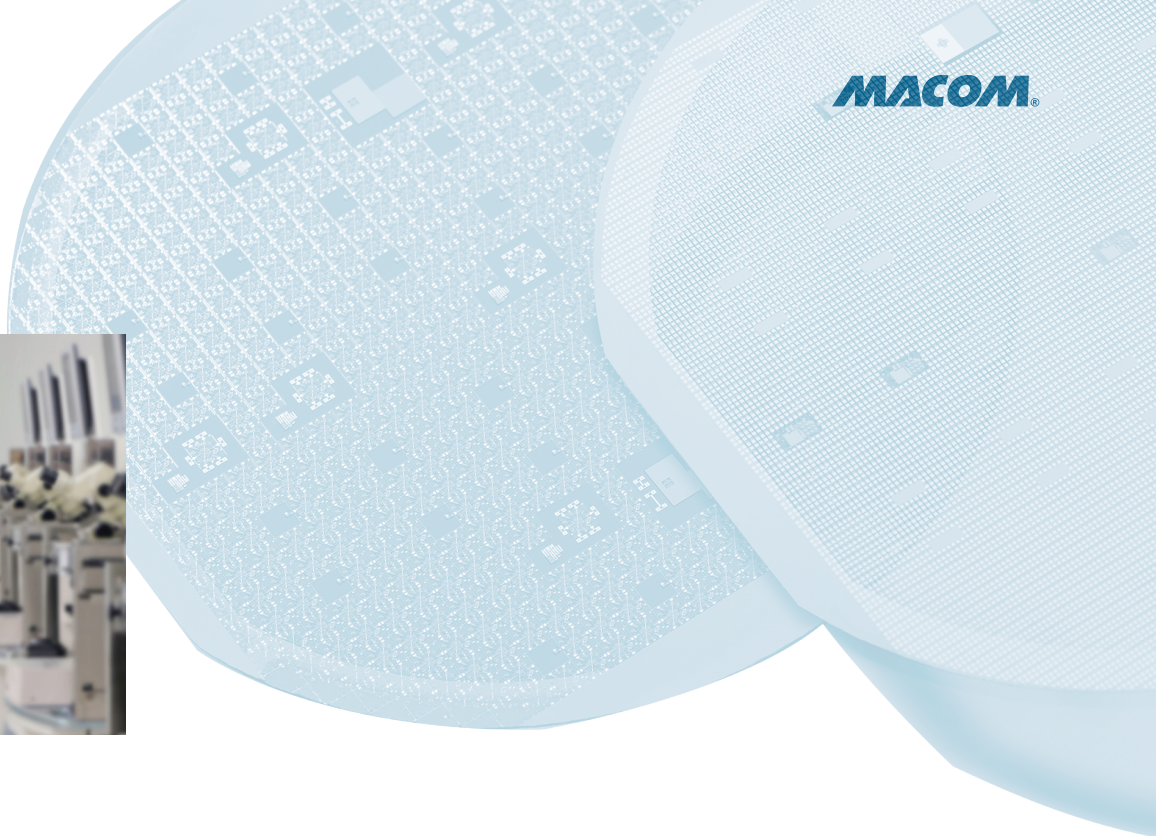
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For over 70 years, MACOM’s design and applications experts have spearheaded innovation in the RF, microwave, and millimeterwave domain—developing the industry’s broadest portfolio of MMICs and components, spanning the entire RF signal chain. Leveraging advanced proprietary technologies, including GaAs, AlGaAs, SiGe, SOI, and Silicon, MACOM’s heterogeneous semiconductor and packaging strategy ensures that each individual RF system function is fully optimized to deliver maximum performance at the appropriate cost. MACOM remains firmly committed to delivering true competitive advantage to our customers, providing superior technology, expertise, cost structures, and supply chains—without compromises.



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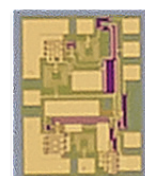
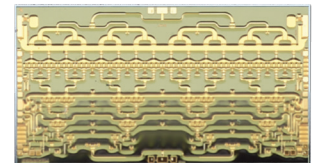
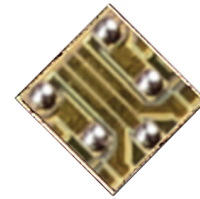
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MACOM provides bare die offerings for many of our MMIC products. Our on-wafer DC and RF test capability allow us to deliver known good die to our customers to be used in module chip and wire assemblies.

MACOM is capable of delivering bare die product from our DoD-trusted Lowell foundry to support ITAR customers, as well as commercial applications from our external foundry partners.

Electronic wafer mapping, automated pick and place, and automated optical inspection to MIL-STD-883 ensures a fully compliant die is delivered to our customers, whether in gel or waffle packs, or full wafers on tape.



# Solid State Power Amplifier Module (SSPA)

## Standard Product Designs and Custom Solutions – Frequencies from 2 to 100 GHz

### Key Benefits

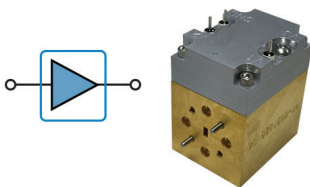
- > Collaborative custom designs
- > Waveguide interfaces up to WR-10 and Coaxial interfaces available
- > Multi-function integrated waveguide assemblies to reduce complication, size, weight, and power
- > Optimal performance from MACOM’s world class semiconductor devices
- > Robust and reliable solutions for harsh environments
- > Quality levels ranging from commercial to space performance, high power GaN solutions

MACOM’s Solid State Power Amplifier (SSPA) and waveguide module product portfolio leverages our world class MMIC technology and system design expertise for high performance Industrial, Aerospace, Defense, and Communications applications. Our SSPA modules feature up to 16 power-combined MMICs in a single module and we can power-combine multiple modules up to 100GHz featuring either coaxial or waveguide interfaces.

MACOM offers standard product designs as well as custom solutions integrating several active and passive functions or transmit & receive into a single module to achieve customers’ critical performance parameters such as output power, switching speed, noise figure, spectral purity, and out-of-band rejection. All custom designed solutions consider thermal management as well as Size, Weight, and Power.

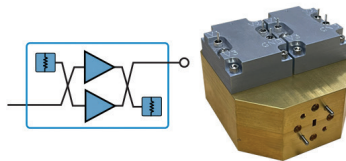
MACOM’s SSPA & waveguide module products are available with Commercial, Medical, Military, and Space screening quality levels.

### SSPA Modules



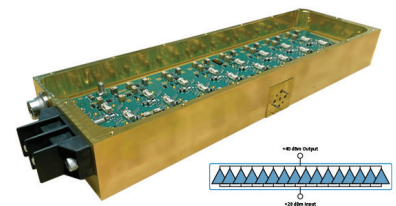
**1 W SSPA, 71 – 86 GHz**  
MAAP-011346-01W12A

- > Saturated Pout: +30 dBm @ 71 GHz
- > Gain: 20 dB
- > Reverse Isolation: >30 dB
- > Dimensions: 1.5” x 1.0” x 1.5”
- > 7 – 8 V, 2.5 A quiescent, 4.0 A (saturated)
- > WR-12 input/output



**2 W SSPA, 71 – 86 GHz**  
MAAP-011346-02W12A

- > Saturated Pout: +33 dBm @ 71 GHz
- > Gain: 20 dB
- > Reverse Isolation: >30 dB
- > Dimensions: 3” x 2.5” x 1.5”
- > 7 – 8 V, 5.0 A quiescent, 8.0 A (saturated)
- > WR-12 input/output



**10 W SSPA, 71 – 76 GHz**  
MAAP-011385-16W12A

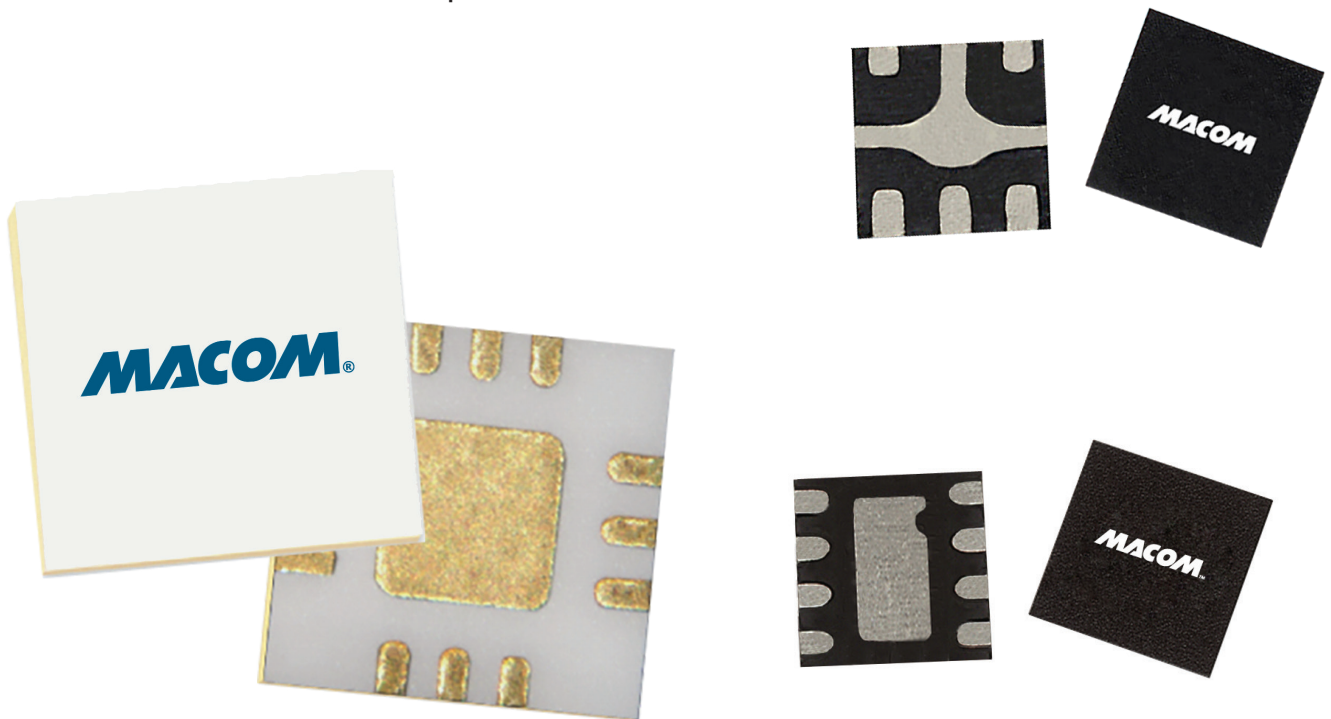
- > Saturated Pout: +40 dBm @ 71 GHz (Pin = +28 dBm)
- > Gain: 20 dB
- > Reverse Isolation: >30 dB
- > Dimensions: 13” x 4” x 1.8”
- > 6 V, 35 A quiescent, 70 A (saturated)
- > WR-12 input/output

The MACOM portfolio includes products designed for mission critical high reliability Applications deployed in Aerospace, Defense, and Space Applications. Product screening and qualification is performed in MACOM facilities to deliver to requirements of military specifications as well as to customer specific source control drawings.

MACOM can also offer our catalog products in hermetic ceramic or metal packages to meet long term reliability requirements.

Available screening includes but not limited to:

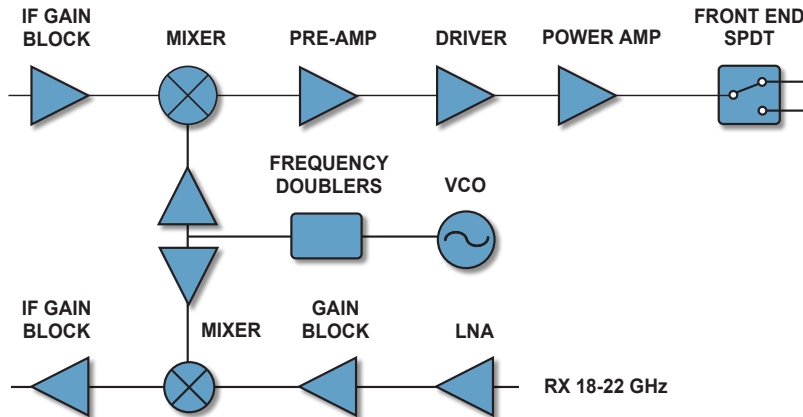
- › Element Evaluation of Bare Die
- › MIL-PRF-38534 for multi-die hybrid packages
- › MIL-PRF-38535 for single die packages
- › PEM-INST-001 for Plastic Encapsulated Modules



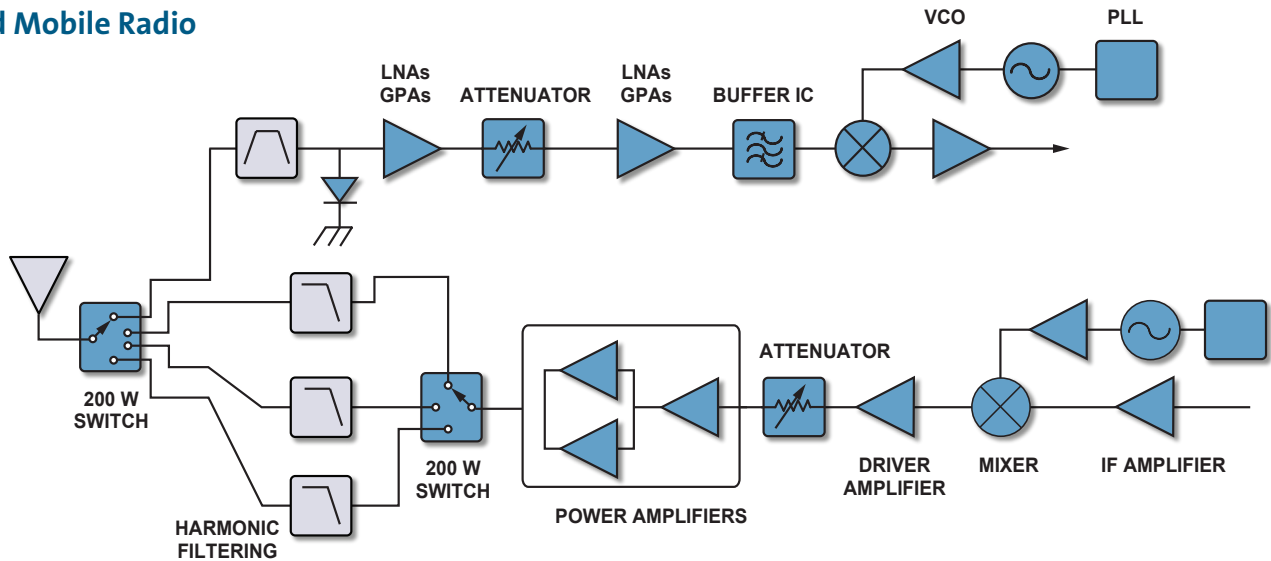
# Application Block Diagrams

MACOM provides the fundamental building blocks to enable your diverse and complex applications. Our broad portfolio of products supports a wide variety of applications ranging from RF to Light. For a complete list of application block diagrams please visit: [macom.com](http://macom.com)

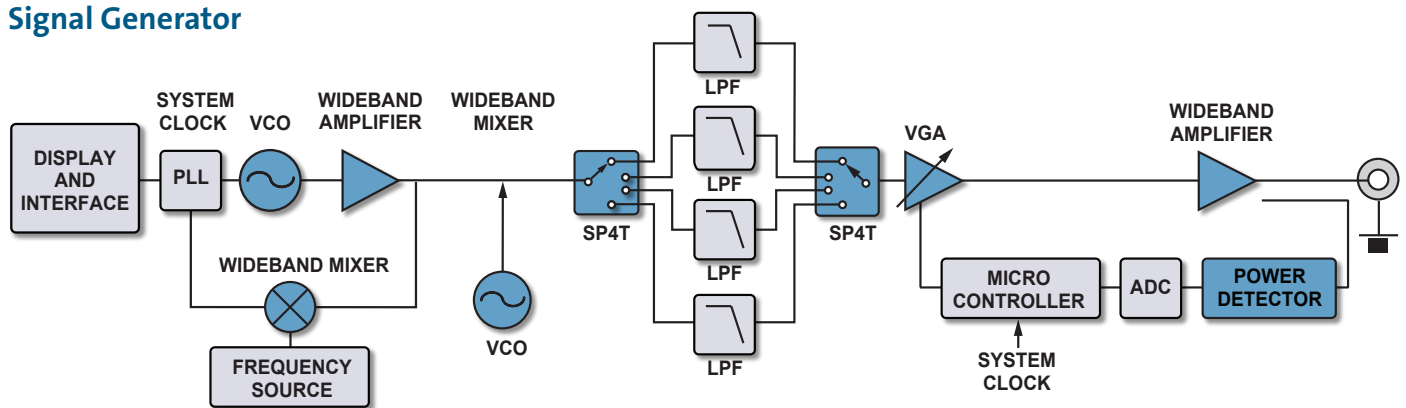
## SATCOM



## Land Mobile Radio

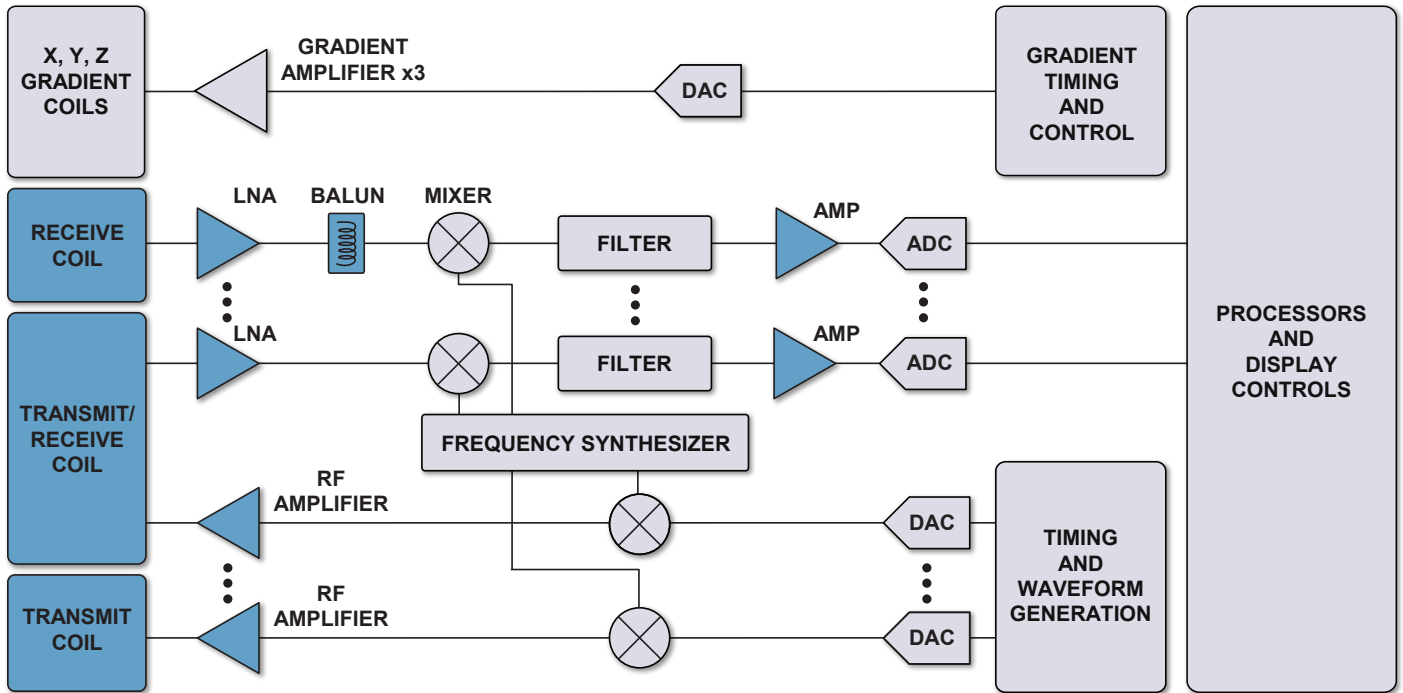


## Signal Generator

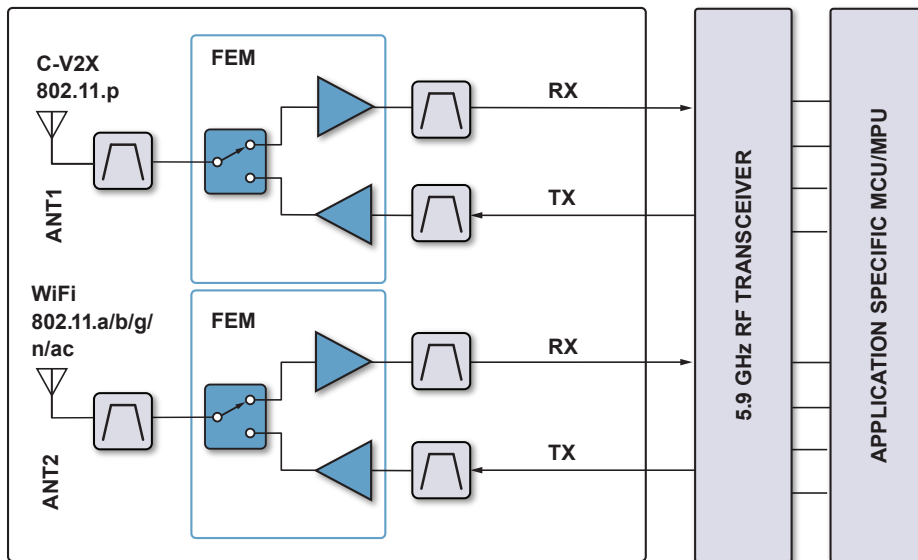


# Application Block Diagrams

## MRI

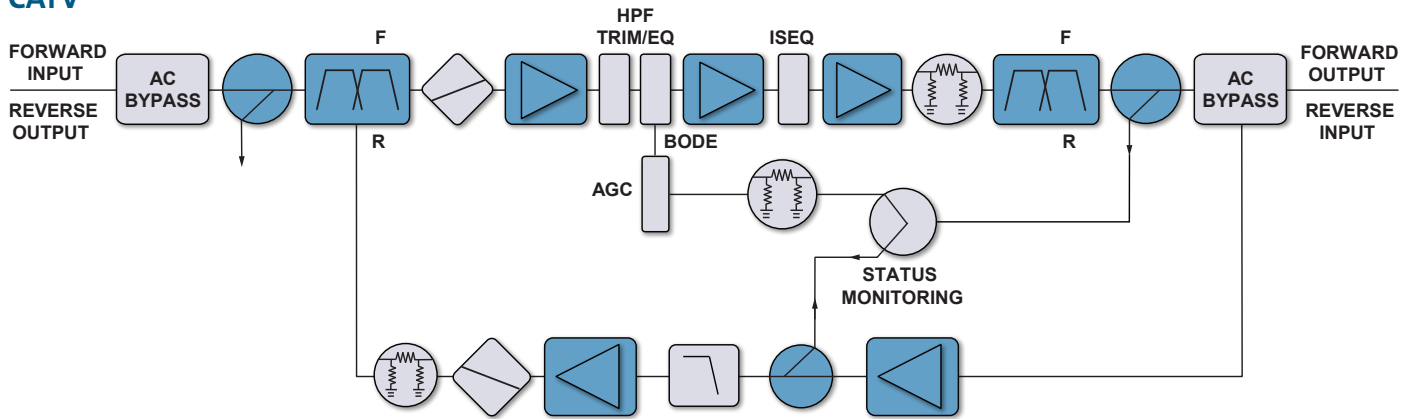


## Automotive - V2X / WiFi Antenna

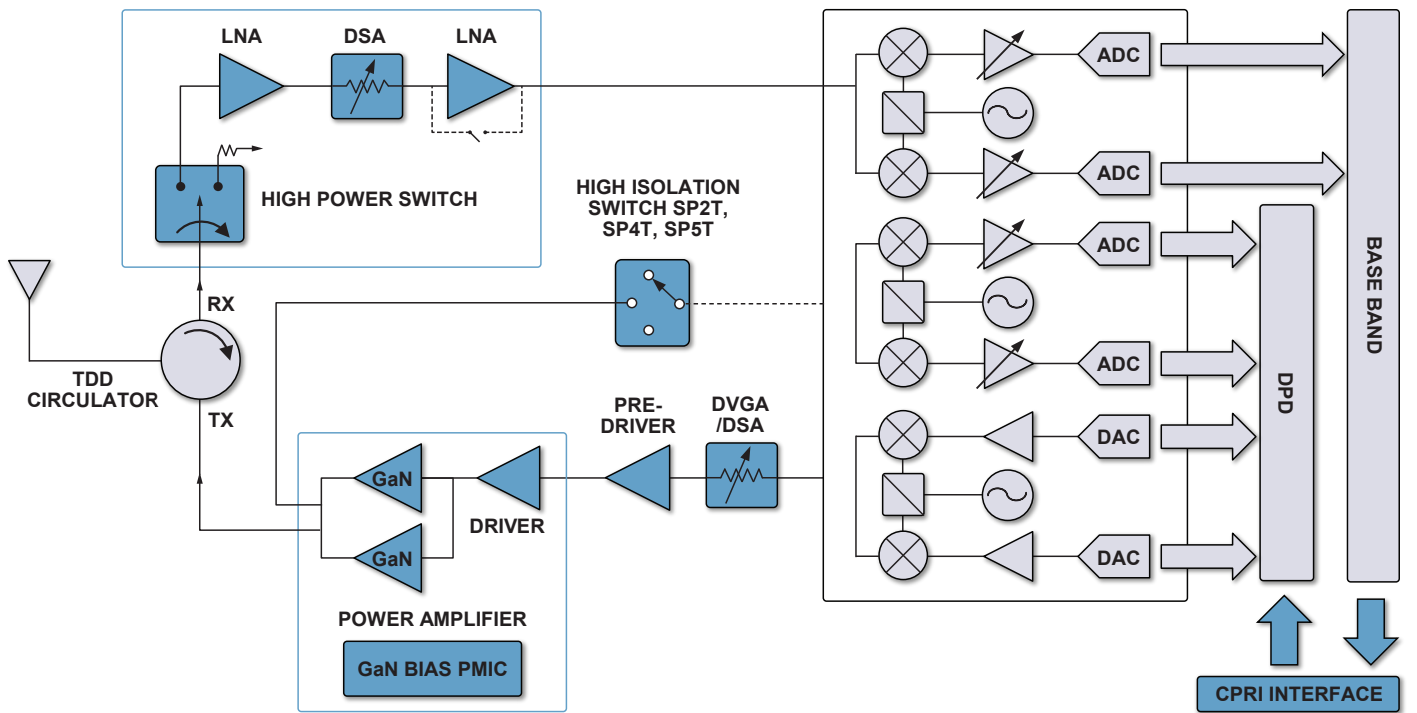


# Application Block Diagrams

## CATV



## Wireless Access Sub-6GHz





New! Recently Released			
Part Number	Description	Part Category	Applications
MAAL-011138	S-band Low Noise Amplifier	Amplifier GaAs	ISM/MM
MAAL-011154	Amplifier, 4 – 8 GHz, Low Phase Noise, 4 mm PQFN	Amplifier GaAs	ISM/MM, T&M
MAAL-011155	Amplifier, 6 – 12 GHz, Low Phase Noise, 4 mm PQFN	Amplifier GaAs	ISM/MM, T&M
MAAL-011181	Amplifier, 50 kHz – 20 GHz LNA, 5 mm 32 lead PQFN	Amplifier GaAs	ISM/MM, T&M
MAAL-011181-DIE	Amplifier, 50 kHz – 20 GHz LNA, DIE	Amplifier GaAs	ISM/MM, T&M
MAAL-011186	Amplifier, 20 – 55 GHz, Low Noise, 5 x 5 mm	Amplifier GaAs	ISM/MM, T&M
MAAL-011207-Q	LNA, 0.7 – 6 GHz, 2 mm 8 lead PDFN (AEC-Q100)	Amplifier GaAs	Automotive
MAAM-011231-DIE	Distributed Amplifier, DC – 50 GHz, DIE	Amplifier GaAs	ISM/MM, T&M
MAAM-011252	Gain Block Amplifier, 0.03 – 8 GHz, 2 mm, PDFN-8	Amplifier GaAs	ISM/MM, T&M
MAAM-011252-DIE	Amplifier, Low Noise, 0.03 – 8 GHz, DIE	Amplifier GaAs	ISM/MM
MAAM-011305-DIE	Amplifier, 0.03 – 8 GHz, DIE	Amplifier GaAs	ISM/MM
MAAM-011305	Gain Block Amplifier, 0.03 – 8 GHz, 2 mm, PDFN-8	Amplifier GaAs	ISM/MM, T&M
MAAM-011289	Gain Block Amplifier, 5 – 20 GHz, 3 mm, AQFN	Amplifier GaAs	ISM/MM, T&M
MAAM-011289-DIE	Gain Block Amplifier, 5 – 20 GHz, DIE	Amplifier GaAs	ISM/MM, T&M
MAAM-011290	Gain Block Amplifier, 5 – 20 GHz, 3 mm, AQFN	Amplifier GaAs	ISM/MM, T&M
MAAM-011290-DIE	Gain Block Amplifier, 5 – 20 GHz, DIE	Amplifier GaAs	ISM/MM, T&M
MAAM-011277-DIE	Amplifier, 20 – 45 GHz, 20 dB Gain, 0.25 W, DIE	Wideband Amplifier	ISM/MM, T&M
MAAM-011291-DIE	Amplifier, 20 – 45 GHz, 20 dB Gain, 0.8 W, DIE	Wideband Amplifier	ISM/MM, T&M
MAAM-011297	CATV 75 Ω, Differential RF Amplifier, SOIC-8EP	Amplifier GaAs	CATV
MAAM-011299	CATV 75 Ω, Differential RF Amplifier, SOIC-8EP	Amplifier GaAs	CATV
MAAM-011300	CATV 75 Ω, Single Ended RF Amplifier, SOT-89	Amplifier GaAs	CATV
MAAM-011229-CQ3	Low Noise Amplifier, 3 mm Ceramic QFN	Amplifier GaAs	ISM/MM
MAAP-011199-DIE	Power Amplifier, 80 – 100 GHz, DIE	Amplifier GaAs	PTP/Infrastructure
MAAP-011205-DIE	Power Amplifier, 71 – 86 GHz, DIE	Amplifier GaAs	PTP/Infrastructure
MAAP-011215-DIE	Power Amplifier, 55 – 70 GHz, V-band, DIE	Amplifier GaAs	PTP/Infrastructure
MAAP-011313	Power Amplifier, 4 W, 13.5 – 15 GHz, 5 mm AQFN	Amplifier GaAs	PTP/Infrastructure
MAAP-011316	Power Amplifier, 2 W, 28 – 31 GHz, 5 x 5 mm AQFN	Amplifier GaAs	PTP/Infrastructure
MAAP-011317	Power Amplifier, 4 W, 27.5 – 31 GHz, 5 mm AQFN	Amplifier GaAs	PTP/Infrastructure
MAAP-011319	Power Amplifier, 24 – 30 GHz, 0.5W	Amplifier GaAs	PTP/Infrastructure
MAAP-011324	Power Amplifier, 0.001 – 27 GHz, 5 x 5 mm AQFN	Amplifier GaAs	ISM/MM, T&M
MAAP-011324-DIE	Power Amplifier, 0.001 – 27 GHz, 0.25 W, DIE	Amplifier GaAs	ISM/MM, T&M
MAAP-011325-DIE	Power Amplifier, 0.001 – 40 GHz, 0.25 W, DIE	Amplifier GaAs	ISM/MM, T&M
MAAP-011333-DIE	Power Amplifier, 4 W, 13.5 – 15.0 GHz, DIE	Amplifier GaAs	PTP/Infrastructure
MAAP-011341	Power Amplifier, 27 – 31.5 GHz, 0.5 W, 4 mm AQFN	Amplifier GaAs	PTP/Infrastructure
MAMX-011022	Mixer, 17 – 53 GHz, Double Balanced	Mixer, Frequency Conversion	ISM/MM
MAMX-011075	Mixer, 8 – 26 GHz, Image Reject, 4 mm, AQFN	Mixer, Frequency Conversion	ISM/MM
MAMX-011066	Mixer, 5 – 37 GHz, High Linearity, 1.5 x 2 mm, TDFN-6	Mixer, Frequency Conversion	ISM/MM
MAMX-011040-DIE	Mixer, Image Reject, 6 – 26 GHz, DIE	Mixer, Frequency Conversion	ISM/MM
MAMX-011040	Mixer, Image Reject, 6 – 26 GHz, 4 mm QFN-24	Mixer, Frequency Conversion	ISM/MM
MAMX-011043-DIE	Mixer, Image Reject, 15 – 45 GHz, DIE	Mixer, Frequency Conversion	ISM/MM
MAMX-011043	Mixer, Image Reject, 15 – 45 GHz, 4 mm QFN-24	Mixer, Frequency Conversion	ISM/MM
MAMX-011044-DIE	Mixer, Image Reject, 2.5 – 9 GHz, DIE	Mixer, Frequency Conversion	ISM/MM
MAMX-011067	Mixer, 5.5 – 19 GHz, 3 mm PQFN-12, Double Balanced	Mixer, Frequency Conversion	ISM/MM
MAMX-011071	Mixer, 8 – 30 GHz, 3 mm PQFN-12, Double Balanced	Mixer, Frequency Conversion	ISM/MM
MAMX-011074	Mixer, 18 – 46 GHz, 3 mm PQFN-16, Double Balanced	Mixer, Frequency Conversion	ISM/MM
MAMX-011088	Mixer, 17 – 57 GHz, Double Balanced	Mixer, Frequency Conversion	ISM/MM
MAMX-011088-DIE	Mixer, 17 – 57 GHz, Double Balanced	Mixer, Frequency Conversion	ISM/MM

Note: Part numbers are RoHS compliant  
 Detailed specifications can be found quickly on our website at [macom.com](http://macom.com) by typing the part number into the search box.  
 All specifications are subject to change.

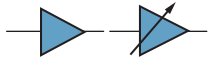
New! Recently Released (continued)			
Part Number	Description	Part Category	Applications
MAPS-011019	Digital Phase Shifter, 6 Bits, 2.4 – 5.1 GHz, 5 mm 32LD PQFN	Digital Phase Shifters GaAs	ISM/MM, T&M
MAPS-011021	Digital Phase Shifter, 6 Bits, 0.9 – 1.2 GHz, 6 mm 28 lead PQFN	Digital Phase Shifters GaAs	ISM/MM, T&M
MAAD-011045	Digital Attenuator, 2 – 18 GHz, 6 Bit, 3 mm, Laminate, Consistent Phase	Digital Attenuators SOI	ISM/MM, T&M
MAAD-011053/54/55/56/57-DIE	Attenuators, DSA, 1 Bit, 2 dB, 4 dB, 6 dB, 8 dB, and 10 dB, respectively	Digital Step Attenuators	PTP/Infrastructure
MAAT-011022/23/24/25/26/27/28/ 29/30-DIE	Fixed Attenuator Family	Digital Attenuators	PTP/Infrastructure
MAAL-011188	Broadband 2-Stage LNA 1 – 6 GHz, 3 mm QFN	Amplifier GaAs	Infrastructure, MM
MAMF-011126	Integrated Switch and LNA Module 1 – 6 GHz, 6 mm QFN	Multi-Function MMIC	Infrastructure, MM
MAMF-011133	Dual Channel Switch and LNA Module 2 – 6 GHz	Multi-Function MMIC	Infrastructure, MM
MAMF-011138	Dual Channel Switch and LNA Module 2 – 6 GHz	Multi-Function MMIC	Infrastructure, MM
MAMF-011139	High Power Switch - LNA Module with Bypass 1.4 – 6.0 GHz	Multi-Function MMIC	Infrastructure, MM
MAMF-011144	Dual Channel Switch and LNA Module 2.3 – 4. 2 GHz, High Gain	Multi-Function MMIC	Infrastructure, MM
MAMF-011145	Dual Channel Switch and LNA Module 2.3 – 4. 2 GHz, High Gain	Multi-Function MMIC	Infrastructure, MM
MAMF-011149	Integrated Switch and LNA Module 1 – 6 GHz, 3 mm QFN	Multi-Function MMIC	Infrastructure, MM
MAMF-011156	Integrated Switch and LNA Module with Additional Pins 1 – 6 GHz, 3 mm QFN	Multi-Function MMIC	Infrastructure, MM

New! SOI Products			
Part Number	Description	Part Category	Applications
MAAD-011045	Digital Attenuator, 2 – 18 GHz, 6 Bit, 3 mm, Laminate, Consistent Phase	Digital Attenuators SOI	ISM/MM, T&M
MASW-011145	SPDT Switch, 27 – 31 GHz, 4 W, 3 mm Laminate	Switches SOI	PTP/Infrastructure
MASW-011151	SPDT Switch, DC – 67 GHz, 2.25 mm Laminate	Switches SOI	PTP/Infrastructure
MASW-011152	SPDT Switch, DC – 55 GHz, 3 mm Laminate, Absorptive	Switches SOI	PTP/Infrastructure
MASW-011184	SPDT Switch, 1 – 5 GHz, 3 mm PQFN	Switches SOI	ISM/MM, T&M
MASW-011197	SPDT Switch, DC – 44 GHz, Reflective	Switches SOI	ISM/MM
MASW-011145	SPDT Switch, DC – 44 GHz, Absorptive	Switches SOI	ISM/MM

Note: Part numbers are RoHS compliant  
 Detailed specifications can be found quickly on our website at [macom.com](http://macom.com) by typing the part number into the search box.  
 All specifications are subject to change.

Parts to be Released			
Part Number	Description	Part Category	Applications
MAAL-011204	Amplifier, Low Noise, 63.87 & 127.74 MHz, 4 mm, 8 Lead Package (MRI)	Amplifier GaAs	ISM/MM
MAAL-011154-DIE	Amplifier, 4 - 8 GHz, Low Phase Noise, DIE	Amplifier GaAs	ISM/MM, T&M
MAAL-011155-DIE	Amplifier, 6 - 12 GHz, Low Phase Noise, DIE	Amplifier GaAs	ISM/MM, T&M
MAAL-011146	Amplifier, 17.25 - 21.5 GHz, Dual Band LNA, 3 mm PQFN	Amplifier GaAs	PTP/Infrastructure
MAAL-011198	Amplifier, 32 - 37 GHz, Low Noise, 2.5 mm PQFN	Amplifier GaAs	PTP/Infrastructure
MAAL-011186-DIE	Amplifier, 20 - 55 GHz, Low Noise, DIE	Amplifier GaAs	ISM/MM, T&M
MAAM-011324	Driver Amplifier, 0.5 W, 3.3 - 3.8 GHz, 3 mm Laminate	Amplifier GaAs	Infrastructure, MM
MASW-011153	SP4T Switch, DC - 55 GHz, 4 mm Laminate, Reflective	Switch GaAs	ISM/MM, T&M
MASW-011154	SP4T Switch, DC - 30 GHz, 4 mm Laminate, Absorptive	Switch GaAs	ISM/MM, T&M
MASW-011199	SP4T Switch, DC - 44 GHz, Reflective	Switch GaAs	ISM/MM, T&M
MASW-011200	SP4T Switch, DC - 44 GHz, Absorptive	Switch GaAs	ISM/MM, T&M
MAMX-011097	Mixer, 32 - 37 GHz, IRM, 2 mm PDFN	Mixer GaAs	ISM/MM, T&M
MAMX-011116	Mixer, 32 - 37 GHz, IRM, Low LO Power, 2 mm QFN	Mixer GaAs	ISM/MM, T&M
MAAP-011340	Amplifier, 0.25 W, 27 - 31.5 GHz, 3 mm AQFN	Amplifier GaAs	PtP/Infrastructure, Satcom
MAAP-015016	Power Amplifier, 4 W, 33 - 37 GHz, 5.4 x 8 mm AQFN	Amplifier GaAs	ISM/MM, Satcom
MAAP-011303-DIE	Dist. Amp, DC - 82 GHz, 20 dBm P3, DIE	Amplifier GaAs	ISM/MM, T&M
MAAP-011388-DIE	PA, 1W, 71 - 86 GHz, High Linearity, DIE	Amplifier GaAs	ISM/MM, T&M
MAAP-011346-01W12A	SSPA, 1W, 71-86GHz, WR-12 Waveguide Module	Amplifier GaAs	ISM/MM, T&M
MAAP-011346-02W12A	SSPA, 2W, 71-86GHz, WR-12 Waveguide Module	Amplifier GaAs	ISM/MM, T&M
MAAP-011385-16W12A	SSPA, 10W, 71-76GHz, WR-12 Waveguide Module	Amplifier GaAs	ISM/MM, T&M
MAMF-011150	High Power Switch - LNA Module with DC Boost and Bias Controller, 1.4 - 4.2 GHz, 6 mm QFN	Multi-Function MMIC	Infrastructure, MM

Note: Part numbers are RoHS compliant  
 Detailed specifications can be found quickly on our website at [macom.com](http://macom.com) by typing the part number into the search box.  
 All specifications are subject to change.



MACOM designs, manufactures, and supports a wide variety of amplifiers for RF, microwave, and millimeter-wave applications. We use a variety of semiconductor processes such as GaAs MESFET for linearity, pHEMT for power and low noise, and HBT for linearity and high gain. MACOM amplifiers are used in a variety of commercial and aerospace and defense applications.

Amplifier Gain Block								
Part Number	Description	Min Freq (MHz)	Max Freq (MHz)	Gain (dB)	Output P1dB (dBm)	OIP3 (dBm)	Bias Current (mA)	Package
MAAM02350	Wideband Amplifier	200	3000	17	14	24	65	Die
MAAM-011326-DIE	Gain Block	500	6000	21	20	36	90	Die
MAAM-011252-DIE	Broadband Low Noise	30	8000	20	20	34	60	Die
MAAM-011305-DIE	Broadband Low Noise	30	8000	15	20	35	65	Die
MAAM28000	Wideband Amplifier	2000	8000	17	14	24	60	Die
XB1007-BD	Buffer Amplifier	4000	11000	23.5	20	30	130	Die
MAAM-011289-DIE	Driver Amplifier	5000	20000	15	19.5	31	100	Die
MAAM-011290-DIE	Driver Amplifier	5000	20000	20	19.5	32	115	Die
XB1008-BD	Buffer Amplifier	10000	21000	18	20	30	130	Die
XB1004-BD	Buffer Amplifier	16000	30000	21	19	29	100	Die
XB1006-BD	Buffer Amplifier	18000	38000	21	15	25	25	Die
XB1005-BD	Buffer Amplifier	35000	45000	23	16	26	50	Die
MAAM-008198-00A162	Cascadable, Hi Eff	10	1200	13	6	18	15	TO-8
MAAM02350-A2	Wideband Amplifier	200	3000	18	14	24	65	CR-3
MAAM-009286	Driver Amplifier	250	4000	15.5	27	42	155	SOT-89
MAAM-009560	Driver Amplifier	250	4000	15	29	42	225	SOT-89
XF1001-SC	Packaged HFET	0	6000	15.5	30	46.5	300	SOT-89
MAAM-011252	Broadband Low Noise	30	8000	20	20	34	60	2 mm, PDFN-8
MAAM-011305	Broadband Low Noise	30	8000	16	20	37	66	2 mm, PDFN-8
MAAM28000-A1	Wideband Amplifier	2000	8000	17	14	24	70	CR-3
MAAM28000-A1G	Wideband Amplifier	2000	8000	17	14	24	70	CR-10
MAAM28000-A1G	Wideband Amplifier	2000	8000	17	14	24	70	CR-10
XB1007-QT	Buffer Amplifier	4000	11000	23	19	31	100	3 mm PQFN-16
CMM0511-QT	Driver Amplifier	5000	14000	20	11	22	90	3 mm PQFN-16
MAAM-011206	Darlington Amplifier	DC	15000	13.5	18	27.5	72	1.5 x 1.2 mm TDFN-6
MAAM-011101	Wideband Amplifier	4000	20000	16	19	30	45	1.5 x 1.2 mm TDFN-6
MAAM-011289	Driver Amplifier	5000	20000	15.5	19.5	30	102	3 mm, AQFN-12
MAAM-011290	Driver Amplifier	5000	20000	20	19.5	32	110	3 mm, AQFN-12
XB1008-QT	Buffer Amplifier	10000	21000	17	18	32	100	3 mm PQFN-16
MAAM-011132	Driver Amplifier	17700	23600	23	21	33	180	4 mm PQFN-16
MAAM-011112	Buffer Amplifier	20000	37000	24	18	30	335	3 mm PQFN-16
MAAM-011109	Wideband Amplifier	100	40000	13	18	22	170	5 mm LGA-9
XB1014-QT	Buffer Amplifier	37000	40000	21	20	30.5	63	3 mm PQFN-16
MAAM-010513	Driver Amplifier	40500	43500	23	23	32	400	5 mm LGA-12

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Power Amplifiers								
Part Number	Description	Min Freq (MHz)	Max Freq (MHz)	Output P1dB (dBm)	PSAT (dBm)	Gain (dB)	OIP3 (dBm)	Package
<b>NEW</b>	MAAP-011324-DIE	0.25 W Power Amplifier	DC	27000	25	26	18	35 Die
<b>NEW</b>	MAAP-011325-DIE	0.25 W Power Amplifier	DC	24000	27	28	11.5	35 Die
	MAAM26100	GaAs MMIC Power Amplifier	2000	6500	28	30.5	19	39 Die
	MAAM71100	Power, GaAs MMIC	7000	11000	28	31	18	38 Die
	MAAP-015035-DIE	12 W Power Amplifier	8500	11500	40	41	36	— Die
	MAAP-015030-DIE	13 W Power Amplifier	8500	11750	38	41	25	— Die
	MAAP-118260-DIE	42 GHz Power Amplifier	18000	26000	28.5	31	28.5	37 Die
	MAAP-011140-DIE	6 W Ka-Band Power Amplifier	27500	30000	37	38.5	25	46 Die
	MAAP-011139-DIE	4 W Power Amplifier	29000	31000	35	36.5	24	42 Die
	MAAP-015016-DIE	4 W Ka-Band Power Amplifier	32000	38000	36	37	18	— Die
	XPI018-BD	Power Amplifier	37000	42000	25	26	26	34 Die
	MAAM-011277-DIE	0.25 W Power Amplifier	20000	45000	23.5	—	24.5	30 Die
	MAAM-011291-DIE	1 W Power Amplifier, 20 – 45 GHz	20000	45000	28.5	30	19	35 Die
	MAAP-011218-DIE	0.5 W Power Amplifier	71000	86000	26	27	20	31 Die
	MAAM26100	GaAs MMIC Power Amplifier	2000	6500	28	30.5	19	39 Die
	MAAM71100	Power, GaAs MMIC	7000	11000	28	31	18	38 Die
	MAAP-015035-DIE	12 W Power Amplifier	8500	11500	40	41	36	— Die
	MAAP-011333-DIE	4 W Power Amplifier	13500	15000	37	37.8	26	— Die
	MAAP-011327-DIE	1 W Power Amplifier	1	22000	30	32	14	46.5 Die
	MAAP-011146-DIE	3 W Power Amplifier	21150	23650	34	35.5	25	41 Die
	MAAP-118260-DIE	42 GHz Power Amplifier	18000	26000	28.5	31	28.5	37 Die
	MAAP-011140-DIE	6 W Ka-Band, Power Amplifier	27500	30000	37	38.5	25	46 Die
	MAAP-011139-DIE	4 W Power Amplifier	29000	31000	35	36.5	24	42 Die
<b>NEW</b>	MAAP-011215-DIE	Power Amplifier	55000	70000	22	32	25	32 Die
<b>NEW</b>	MAAP-011199-DIE	Power Amplifier	80000	100000	22	24	12	— Die
<b>NEW</b>	MAAP-011324	0.25 W Power Amplifier	DC	27000	24	27	18	34.5 5 mm AQFN-32
<b>NEW</b>	MAAP-011319	0.5 W, Ka Band, Power Amplifier	24000	30000	26	27	24	37 4 mm AQFN-24
<b>NEW</b>	MAAP-011341	0.5 W, Ka Band, Power Amplifier	27000	31500	27	28	28	36 4 mm AQFN-24
	MAAP-011232	Power Amplifier	100	3000	29	30	23	40 3 mm PQFN-16
	MAAP-010168	10 W Power Amplifier	500	3000	39	41	24	— Ceramic Flanged-10
	MAAP-011022	7 W Pulsed High Power Amplifier	2700	3000	37.5	38.3	23	— 6 mm PQFN-28
	MAAP-011246	Power Amplifier	27500	31500	30	33	23	-20 5 mm AQFN 32
	MAAP-010171	8 W Power Amplifier	2500	3500	38	39	27.3	— 5 mm PQFN-20
	MAAP-011027	8 W Power Amplifier	5200	5900	—	39	20	— 5 mm PQFN-20
	MAAM26100-B1	Power Amplifier	2000	6000	27	30.5	19	39 CR-2
	MAAM26100-P1	Power Amplifier	2000	6000	28	30.5	20	40 CR-15
	MAAP-010169	10 W Power Amplifier	2000	6000	38	41	18	— Ceramic Flanged-10
	XPI039-QJ	2.5 W Power Amplifier	5600	7100	33	34	17	48 6 mm QFN-24
	MAAP-011161	4 W Power Amplifier	7100	7900	35.5	36.5	22	46.5 7 mm SMT
	MAAP-011193	4 W Power Amplifier	7700	8500	35.5	36.5	20	46.5 7 mm SMT
	XPI035-QH	0.5 W Power Amplifier	5900	9500	28	29	26	39 4 mm PQFN-24
	MAAP-008924	1.2 W Power Amplifier	10000	13300	31	32	21	42 5 mm PQFN-20
	MAAP-011313	4 W 13.5 – 15 GHz Power Amplifier	13500	15000	34.5	36	36	28 5 mm AQFN-32
	MAAP-010150	10 – 15.35 GHz Power Amplifier	10000	15350	33	36	27	42 7 mm QFN-48
	MAAP-011202	2.5 W Power Amplifier	12700	15400	33.5	34.5	30	41 5 mm QFN-24
	MAAP-010517	3 W Power Amplifier	14400	15400	35	36.4	24.5	41 5 mm PQFN-24

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## Power Amplifiers (continued)

Part Number	Description	Min Freq (MHz)	Max Freq (MHz)	Output P1dB (dBm)	PSAT (dBm)	Gain (dB)	OIP3 (dBm)	Package
XP1042-QT	0.5 W Power Amplifier	12000	16000	25	27	21	38	3 mm PQFN-16
XP1043-QH	1.5 W Power Amplifier	12000	16000	30	32	21.5	41	4 mm PQFN-24
MAAP-011145	2 W Power Amplifier	17650	19750	33	34.5	26	43	7 mm Cavity
MAAP-011327	1 W Power Amplifier	1	22000	28.5	30.5	13.5	47	5 mm, AQFN-32
MAAP-011146-STD	2 W Power Amplifier	21150	23650	33	35	24	41	7 mm Cavity
MAAP-118260	Power Amplifier	18000	26000	28.5	31	28.5	37	5 mm 24-lead QFN
MAAP-011250	4 W Ka-Band Power Amplifier	27500	30000	34.8	36	24	41	5 mm AQFN-32
MAAP-011289	3 W Ka-Band Power Amplifier	28000	30000	35	36	24	35	5 mm AQFN-32
MAAP-011298	2.3 W Ka-Band Power Amplifier	27000	31000	33	33.5	25.5	39	5 mm AQFN-32
MAAP-011316	2 W Power Amplifier	27500	31000	34.5	33.5	26	38	5 mm, AQFN-32
MAAP-011317	4 W Power Amplifier	27500	31000	36	36.5	27.5	40	5 mm AQFN-32
MAAP-011233	4 W Ka-Band Power Amplifier	28500	31000	25	38	25	38	5 mm AQFN-32
MAAP-011139	4 W Power Amplifier	28500	31000	34.5	36	23	36	5 mm AQFN-32
MAAP-011170	Power Amplifier	37000	40000	27	28	27	38	7 mm 16-lead SMD
XP1031-QK	38 GHz Power Amplifier	37000	40000	25	27.3	25	35.5	7 mm LGA-28
XP1080-QU	38 GHz Power Amplifier	37000	40000	27	28.9	25	38	7 mm LGA-16
MAAP-010512	42 GHz Power Amplifier	40500	43500	27	29	22	38.4	7 mm LGA-16

## Low Noise Amplifiers

Part Number	Min Freq (MHz)	Max Freq (MHz)	Gain (dB)	Noise Figure (dB)	OIP3 (dBm)	Output P1dB (dBm)	Bias Voltage (V)	Bias Current (mA)	Package
MAAM37000	3500	7000	17	1.8	24	14	4	75	Die
MAAM71200	7500	12000	16.5	2.3	22	12	4	40	Die
<b>NEW</b> MAAL-011181-DIE	DC	20000	14.5	4	29	16	5	125	Die
MAAL-011141-DIE	DC	28000	17	1.8	27	15	6	75	Die
XL1002-BD	20000	36000	23	2.6	16	4	5	85	Die
XL1010-BD	20000	38000	17	3	—	—	4	45	Die
XL1000-BD	20000	40000	20	2	16	9	3	35	Die
<b>NEW</b> MAAL-011181	0	20000	13	4	25	15	5	125	5 mm PQFN-32
MAAL-008624	400	500	21	0.9	28	17	5	60	SOIC-8
MAAL-011136	45	1218	20	1.2	32	17.5	5	50	SOT-89
MAALSS0042	1500	1600	27	1.2	13	1	5	20	SOIC-8
MAAL-010705	500	1600	19	0.5	32	18.5	4	60	2 mm PDFN-8
MAALSS0048	1400	2000	17	1.6	13	1	3	7	SOT-26
MAAL-007304	500	3000	25.5	0.7	19	7	3	12	SOT-26
MAAL-009120	70	3000	11	1.4	35	18	3	80	SOT-363
MAAL-010200	70	3000	11	1.4	36	17	3	77	SOT-89
MAAL-009053	800	3000	11	1.4	35	18	3	80	SOT-363
MAAL-010570	100	3500	16	0.75	34	18.8	5	15	SOT-363
MAAL-010704	100	3500	19.5	0.9	31.5	18	3	60	SOT-363
MAAL-011138	2500	3500	21	1	28	—	5	55	2 mm PDFN-8
MAAM-011229-CQ3	50	4000	19	1.3	38	19.5	5	80	3 mm QFN-12
MAAL-010706	1400	4000	17.5	0.6	34.5	19	4	60	2 mm PDFN-8
MAAL-011134	700	6000	23	0.35	33	17.5	3	50	2 mm PDFN-8
MAAL-011078	700	6000	23	0.35	33	17.5	3	50	2 mm PDFN-8
<b>NEW</b> MAAL-011207-Q	700	6000	23	0.35	33	17.5	3	50	2 mm PDFN-8
<b>NEW</b> MAAL-011188	1000	6000	35	0.79	31	17.5	5	80	3 mm PQFN-16
MAAM37000-AIG	3500	7000	17	2.2	25	14	4	75	Ceramic Gull Wing-8

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## Low Noise Amplifiers

Part Number	Min Freq (MHz)	Max Freq (MHz)	Gain (dB)	Noise Figure (dB)	OIP3 (dBm)	Output P1dB (dBm)	Bias Voltage (V)	Bias Current (mA)	Package
MAAM37000-A1	3500	7000	17	2.2	25	14	4	75	Ceramic-8
MAAM71200-H1	7500	12000	15.5	2.7	21	11	4	40	Leadless Ceramic
MAAL-010528	8000	12000	20.2	1.6	26	14	4	60	3 mm PQFN-16
MAAL-011130	2000	18000	19	1.4	21	16	3	80	2 mm PQFN-8
MAAL-011141	DC	28000	17.5	2	27	16	6	75	5 mm AQFN-32
MAAL-011129	18000	31500	23	2.5	25	16	3	80	2 mm PQFN-8
XL1010-QT	20000	38000	17	3	—	6	4	45	3 mm QFN-16
<b>NEW</b> MAAL-011186	20000	55000	18	2.5	24	14	3	130	5 mm SMT

## Low Phase Noise Amplifiers

Part Number	Min Freq (MHz)	Max Freq (MHz)	Gain (dB)	Noise Figure (dB)	OIP3 (dBm)	Output P1dB (dBm)	Bias Voltage (V)	Bias Current (mA)	Package
MAAL-011151-DIE	2000	18000	16	5	28	19	5	62	Die
MAAL-011151	2000	18000	15	3.5	32	19	5	60	5 mm PQFN-32
<b>NEW</b> MAAL-011154	4000	8000	15.7	5	30	19	5	85	4 mm PQFN-16
<b>NEW</b> MAAL-011155	6000	12000	15	5	31.5	20	5	90	4 mm PQFN-16

## Distributed Amplifiers

Part Number	Min Freq (MHz)	Max Freq (MHz)	Gain (dB)	Gain Flatness (dB)	Noise Figure (dB)	OIP3 (dBm)	Output P1dB (dBm)	Package
XD1001-BD	18000	50000	17	1	5	24	15	Die
MAAM-015023-DIE	18000	40000	26	0.5	6	30	21	Die
MAAM-011277-DIE	2000	45000	24.5	—	—	30	23.5	Die
<b>NEW</b> MAAM-011231-DIE	0.1	50000	15.5	—	3.5	28	15	Die
MAAM-011238-DIE	0.1	67500	14	—	6	27	18	Die
MAAM-011275-DIE	0.03	40000	15	—	5	33	21	Die
MAAM-011286-DIE	0.03	44000	16	—	6	30	22	Die
MAAM-011109	100	40000	13	—	3/5	22	18	5 mm LGA-9
MAAM-011238	0.1	50000	13	—	5	27	17	4 mm SMT

## Linear Amplifiers

Part Number	Description	Min Freq (MHz)	Max Freq (MHz)	Gain (dB)	OIP3 (dBm)	Package
MAAP-015024	8 W Power Amplifier	14500	17500	21	38	Die
XP1019-BD	Power Amplifier	17000	24000	18	36	Die
XP1027-BD	Power Amplifier	27000	31000	25	34	Die
XP1026-BD	Power Amplifier	27000	32000	21	40	Die
XP1017-BD	Power Amplifier	30000	36000	16	33	Die
MAAM-011117	Broadband, Low Distortion	50	2700	16	35	2 mm PDFN-8
XP1044-QL	Power Amplifier Module	4000	5900	18.5	47	7 mm SMD-28
XP1050-QJ	2.5 W Power Amplifier	7100	8500	15.5	47	6 mm QFN-24
MAAM-011139	Driver Amplifier	27500	33400	21	32	4 mm QFN-24
MAAP-010516	4 W Power Amplifier	32000	38000	23	42	5 mm PQFN-24

## High Frequency

Part Number	Description	Min Freq (MHz)	Max Freq (MHz)	Gain (dB)	OIP3 (dBm)	Package
MAAP-011106	Power Amplifier	71000	86000	20	30	Die
MAAM-011167	Power Amplifier	71000	86000	18	27	Die
<b>NEW</b> MAAP-011215-DIE	Power Amplifier	55000	70000	25	32	Die

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## High Frequency (continued)

Part Number	Description	Min Freq (MHz)	Max Freq (MHz)	Gain (dB)	OIP3 (dBm)	Package
<b>NEW</b> MAAP-011385-DIE	1 W Power Amplifier with Phase Trimmer	71000	76000	29	35	Die
MAAP-011218-DIE	0.5 W Power Amplifier	71000	86000	20	31	Die
<b>NEW</b> MAAP-011199-DIE	Power Amplifier	80000	100000	12	—	Die
MAMF-011142	Eband Direct Upconverter	71000	86000	30	25.5	12 x 8 mm SMT
MADC-011021	Eband Direct Downconverter	71000	86000	—	—	8 x 8 mm SMT
MAAP-011205	Power Amplifier	71000	86000	18	27	7 x 7 mm SMT

## Wired Broadband: 75 Ω Amplifiers

Part Number	Description	Min Freq (MHz)	Max Freq (MHz)	Gain (dB)	OIP3 (dBm)	Bias Current (mA)	Bias Voltage (V)	Noise Figure (dB)	Package
<b>CATV Amplifiers</b>									
MAAM-011184	CATV Return Path Single-ended Amplifier	5	300	21	43	95	5	2.5	MSOP 8-EP
MAAM-011185	CATV Return Path Differential Amplifier	5	300	21.2	43	290	5	3.1	3 mm PQFN-16
MAAM-011156	Amplifier, CATV Return Path Differential	5	300	19	44	210	8	7	3 mm PQFN-16
MAAM-011168	Differential CATV Variable Gain	5	300	40	44	290	8	2.6	7 mm PQFN-48
MAAM-011186	Differential CATV Variable Gain Amplifier	5	300	39	42	280	8	3	7 mm PQFN-48
MAAMSS0044	Low Noise, Low Distortion Amplifier	50	1000	12.2	42	225	5	3.3	4 mm PQFN-20
MAAM-010144	Push Pull CATV Amplifier	50	1000	20.5	43	325	8	4.2	TSSOP-16
MAAMSS0067	Low Noise, Low Distortion Amplifier	50	1000	12.2	32	190	5	3.3	4 mm PQFN-20
MAAM-009100	Broadband CATV Amplifier	50	1000	14.3	34	105	5	3	SOT-89
MAAM-009455	CATV Push Pull Amplifier	50	1000	20.5	43	325	8	4.2	4 mm PQFN-20
MAAM-007724	Low Noise, Low Distortion Amplifier	50	1005	12.2	32	190	5	3.3	4 mm PQFN-20
MAAM-010373	Broadband CATV Amplifier	50	1100	22	40	148	8	1.66	SOT-89
MAAM-009633	Broadband CATV Amplifier	50	1200	17	37	120	8	1.9	SOT-89
MAAMSS0060	Low Noise, Low Distortion Amplifier	50	1200	17	37	120	8	1.8	SOT-89
MAAMSS0041	Low Noise, Low Distortion Amplifier	50	1200	15	36	100	8	2.7	SOT-89
MAAMSS0042	Low Noise, Low Distortion Amplifier	50	1200	15	38	110	5	3	SOT-89
MAAM-011169	CATV 75 Ω Push Pull Amplifier	45	1200	25	54	480	12	4.4	5 x 7 mm PQFN40
MAAM-011182	75 Ω, 8 V RF Amplifier	45	1218	18	38	130	8	2.7	2 mm PDFN-8
MAAM-011163	75 Ω, Differential RF Amplifier	5	1218	19	42	290	5	1.7	SOIC-8EP
MAAM-011240	75 Ω, Differential RF Amplifier	5	1218	17	44	290	5	1.7	SOIC-8EP
MAAM-011251	75 Ω, High Linearity, Low Noise CATV Amplifier	5	1218	15	37	100	5	1.9	SOT-89
MAAM-011258	75 Ω, High Linearity, Low Noise CATV Amplifier	5	1218	15	37	100	5	2.2	SOT-89
<b>NEW</b> MAAM-011300	75 Ω, High Linearity, Low Noise CATV Amplifier	45	1800	17.5	34	118	5	2.8	SOT-89
<b>NEW</b> MAAM-011299	75 Ω, Differential RF Amplifier	5	1800	18.7	42	290	5	2	SOIC-8EP
<b>NEW</b> MAAM-011297	75 Ω, Differential RF Amplifier	5	1800	17	42	290	5	2	SOIC-8EP
MAAL-011119	Satellite TV Amplifier	900	2200	10.5	32	80	2.5	1.5	SOT-363
MAAL-009053	Satellite TV Amplifier	800	3000	11	35	80	3	1.4	SOT-363
MAAL-011139	Low Noise Amplifier	5	4000	21	34	85	5	1	SOT-89

Part Number	Min Freq (MHz)	Max Freq (MHz)	Splits (#)	Gain (dB)	Noise Figure (dB)	CSO (dBc)	CTB (dBc)	Bias Current/Voltage (mA)/(V)	Package
<b>Active Splitters</b>									
MAAM-009450	50	1100	3	3.5	3.8	-65	-65	100/5	3 mm PQFN-12
MAAM-007239	50	1100	3	6	4.5	-65	-77	125/5	3 mm PQFN-16
MAAM-008818	50	1100	2	3.2	3.4	-60	-63	120/5	2 mm PDFN-8

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## Wired Broadband: 75 Ohm $\Omega$ Amplifiers (continued)

Part Number	Min Freq (MHz)	Max Freq (MHz)	Splits (#)	Gain (dB)	Noise Figure (dB)	CSO (dBc)	CTB (dBc)	Bias Current/Voltage (mA)/(V)	Package
MAAM-008819	50	1100	3	2.6	3.8	-60	-63	120/5	2 mm PDFN-8
MAAM-008820	50	1100	4	3	3.8	-62	-70	120/5	3 mm PQFN-12
MAAM-008821	50	1100	5	3.5	3.8	-60	-70	120/5	3 mm PQFN-12
MAAM-008822	50	1100	3	4.5	4	-60	-63	120/5	2 mm PDFN-8
MAAM-008970	950	2150	2	4.8	5	—	—	60/5	3 mm PQFN-12
MAAM-007805	50	1100	2	8.5	4	-60	-75	100/5	3 mm PQFN-12
MAAM-009451	50	1100	3	3	3.5	-55	-67	90/3	2 mm PDFN-8
MAAM-009452	50	1100	4	2.5	3.5	-56	-65	96/3.3	3 mm PQFN-12
MAAM-009778	50	1100	4	2.5	4.5	-60	-65	100/5	3 mm PQFN-12
MAAM-009779	50	1100	5	1.5	3.9	-60	-65	110/5	3 mm PQFN-12
MAAM-009811	50	1100	2	2.4	4.5	-55	-65	90/3	2 mm PDFN-8
MAAM-009879	50	1100	2	3.5	3.8	-60	-65	100/5	3 mm PQFN-12
MAAM-010237	50	1100	8	1.9	4.4	-50	-65	190/5	4 mm PQFN-24
MAAM-010263	50	1100	6	2	4.8	-55	-65	190/5	4 mm PQFN-24

## FTTx Amplifiers

MAAM-007807	CATV and 2nd Stage FTTx Amp				50	1000	9	35	60	5	3.8	SOT-89
MAAM-008863	FTTx RF Amplifier				50	1000	37	—	220	5	4.8	4 mm PQFN-24
MAAM-010239	Low Noise FTTx Amplifier				50	1000	30	35	215	5	3.5	4 mm PQFN-20
MAAM-010333	Optical Node RF Amplifier				50	1200	33	—	260	5	—	4 mm PQFN-24
MAAM-011163	75 $\Omega$ , Differential RF Amplifier				5	1800	19	42	290	5	1.8	SOIC-8EP
MAAM-011299	75 $\Omega$ , Differential RF Amplifier				5	1800	18.7	42	290	5	2	SOIC-8EP

## Variable Gain Amplifiers

Part Number	Description	Min Freq (MHz)	Max Freq (MHz)	Gain (dB)	OIP3 (dBm)	Bias Current/Voltage (mA/V)	Package
MAAM-010399	Differential Variable Gain Amplifier	50	1100	28	48	900/6	5 x 7 mm PQFN-40
MAAM-011100	Ultra Small Broadband Variable Gain Amplifier	500	20000	12	25	70/+5-5	1.5 x 1.2 mm TDFN-6

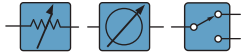
# Power Detectors



## Power Detectors

Part Number	Min Freq (MHz)	Max Freq (MHz)	Insertion Loss (dB)	Sensitivity (dBm)	Directivity (dB)	Max Power (dBm)	Package
MADT-011000-DIE	5000	44000	—	—	—	—	Die
MACP-010571	2000	6000	0.2	-15	15	30	1.5 x 1.2 mm TDFN-6
MACP-010572	6000	18000	0.25	-18	16	30	1.5 x 1.2 mm TDFN-6
MACP-010573	10000	30000	0.5	-17	14	30	1.5 x 1.2 mm TDFN-7
MADT-011000	5000	44000	—	—	—	—	3 mm QFN

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MACOM offers control products for a wide range of A&D and commercial applications, covering a broad frequency spectrum from DC to 70 GHz, using GaAs and SOI based technologies.

Digital Step Attenuators								
Part Number	Min Freq (MHz)	Max Freq (MHz)	Bit Count	Attenuator Range (dB)	LSB (dB)	Insertion Loss (dB)	IIP3 (dBm)	Package
MAAD-011035-DIE	100	30000	5	31	1	4	43	Die
MAAD-011036-DIE	100	30000	6	31.5	0.5	4.2	43	Die
MAAD-011021-DIE	0	40000	6	31.5	0.5	6	38	Die
MAAD-008866	50	1000	6	31.5	0.5	1.4	40	4 mm PQFN-24
MAAD-010305	50	1100	1	15	15	0.3	50	SOT-25
MAADSS0009	0	2000	4	30	3	1.6	50	SOIC-16
MAATSS0015	0	2000	4	15	1	2	50	SOIC-16
MAATSS0021	50	2000	5	15.5	0.5	1.5	45	SOIC-16
AT-263-PIN	5	2000	5	31	1	2.1	48	CR-12
MAATSS0016	500	2000	4	30	2	2.2	47	TSSOP-16
MAATSS0018	100	2000	1	10	10	0.4	50	SOT-25
MAATSS0022	500	2500	5	15.5	0.5	1.8	46	MSOP-10
MAATSS0017	400	2500	5	15.5	0.5	2	47	QSOP-16
MAATSS0019	500	4000	4	15	1	1.3	47	TSSOP-16
MAADCC0006	50	4000	4	15	1	2.5	48	CSP-1
MAAD-000523	700	6000	6	31.5	0.5	1.9	52	4 mm PQFN-24
MAADSS0012	800	8000	1	21	—	0.6	41	2 mm PQFN-8
<b>NEW</b> MAAD-011045	0	18000	6	31.5	0.5	4.5	45	3 mm PQFN-20
MAAD-011021	0	30000	6	31.5	0.5	6	38	3 mm PQFN-16
MAAD-011035	100	30000	5	31	1	4.8	42	4 mm PQFN-24
MAAD-011036	100	30000	6	31.5	0.5	4.8	41	4 mm PQFN-24
MAAD-011053-DIE	DC	30000	1	2.1	—	0.9	40	Die
MAAD-011054-DIE	DC	30000	1	4	—	1	40	Die
MAAD-011055-DIE	DC	30000	1	5.4	—	0.9	40	Die
MAAD-011056-DIE	DC	30000	1	7	—	1.1	40	Die
MAAD-011057-DIE	DC	30000	1	8.5	—	1.4	40	Die

Fixed Attenuators							
Part Number	Min Freq (MHz)	Max Freq (MHz)	Attenuation (dB)	Return Loss (dB)	Input P1dB (dBm)	Input OIP3 (dBm)	Package
MAAT-011022-DIE	DC	50000	0	17.5	—	—	Die
MAAT-011023-DIE	DC	50000	0	17.5	—	—	Die
MAAT-011024-DIE	DC	50000	2	17.5	27	40	Die
MAAT-011025-DIE	DC	50000	3	17.5	27	40	Die
MAAT-011026-DIE	DC	50000	4	17.5	27	40	Die
MAAT-011027-DIE	DC	50000	6	17.5	27	40	Die
MAAT-011028-DIE	DC	50000	10	17.5	27	40	Die
MAAT-011029-DIE	DC	50000	15	17.5	27	40	Die
MAAT-011030-DIE	DC	50000	20	17.5	27	40	Die

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## Voltage Variable Attenuators

Part Number	Min Freq (MHz)	Max Freq (MHz)	Insertion Loss (dB)	Attenuator Range (dB)	Input IP3 (dBm)	Voltage (V)	Current (mA)	Package
MAAA2000G	0	12000	—	40	—	—	—	Die
MAAVSS0004	0	2000	7.2	35	36	-3	0.02	SOIC-14
MAAV-008022	500	2000	2.7	40	32	+5	0.05	SOIC-8
MAAVSS0008	500	2000	2.8	30	28	+5	0.3	SOIC-8
MAAVCC0002	1700	2200	—	35	—	—	—	6 mm PQFN-28
MAAVSS0001	1800	2500	2.4	42	32	+2.25	0.05	SOT-25
MAAVSS0006	0	2500	3.6	25	36	-3	0.025	SOT-25
MAAT-010521	5000	45000	2	40	30	-2	—	3 mm PQFN-16
MAAV-011013	5000	45000	1.5	30	42	—	—	3 mm PQFN-16
MAAT-010521-L2	5800	16000	2	30	29	—	—	3 mm PQFN-16

## Digital Phase Shifters

Part Number	Min Freq (MHz)	Max Freq (MHz)	Insertion Loss (dB)	Bit Count	LSB (°)	IIP3 (dBm)	RMS Phase (dBm)	Package
MAPS-010163-DIE	1400	2400	3.8	6-Bit	5.6	40	3	Die
MAPS-010164-DIE	2300	3800	3.6	6-Bit	5.6	45	3	Die
MAPS-010165-DIE	3500	6000	4.9	6-Bit	5.6	40	4	Die
<b>NEW</b> MAPS-011021	900	1200	3.5	6-Bit	5.6	42	2	6 mm PQFN-28
MAPS-011007	1200	1400	3.8	6-Bit	5.6	48	2	4 mm PQFN-24
MAPS-010143	1400	2400	3.2	4-Bit	22.5	40	2	4 mm PQFN-24
MAPS-010163	1400	2400	5	6-Bit	5.6	40	3	4 mm PQFN-24
MAPS-010144	2300	3800	2.5	4-Bit	22.5	47	2.2	4 mm PQFN-24
MAPS-010164	2300	3800	3.2	6-Bit	5.6	45	3	4 mm PQFN-24
<b>NEW</b> MAPS-011019	2400	5100	4.5	6-Bit	5.6	48	4	4 mm PQFN-24
MAPS-010145	3500	6000	5	4-Bit	22.5	45	3	4 mm PQFN-24
MAPS-010165	3500	6000	5.5	6-Bit	5.6	40	4	4 mm PQFN-24
MAPS-011008	5000	6000	4	6-Bit	5.6	48	2	4 mm PQFN-24
MAPS-010146	8000	12000	6.5	4-Bit	22.5	40	5	4 mm PQFN-24
MAPS-010166	8000	12000	6.5	6-Bit	5.6	40	5	4 mm PQFN-24

## CMOS Switch Drivers

Part Number	Type	Rise Time/Fall Time (ns)	Vcc (V)	Vee (-V)	Icc (mA)	Package
MADR-010269-DIE	Hex FET	8/4.5	3.3	-5	1	Die
MADR-011007	FET	6	—	-5	—	6 mm PQFN-48
MADR-007098-000100	PIN	—	5	—	1	SOW-16

## Switches

Part Number	Min Freq (MHz)	Max Freq (MHz)	Insertion Loss (dB)	Isolation (dB)	Input IP3 (dBm)	Package
<b>SPST</b>						
MASW6020G	100	6000	0.9	45	46	Die
MASW-008177	5	1000	0.6	53	52	3 mm PQFN-12
MASWSS0162	50	2500	1	48	46	SOIC-8
SW-209-PIN	0	3000	1.5	27	40	CR-2, CR10
MASWSS0148	300	4000	1.6	51	49	3 mm PQFN-12

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## Switches (continued)

Part Number	Min Freq (MHz)	Max Freq (MHz)	Insertion Loss (dB)	Isolation (dB)	Input IP3 (dBm)	Package
<b>SPDT</b>						
MASW4030G	50	4000	0.6	53	46	Die
MASW-008206-000-DIE	2400	5800	0.7	30	54	Die
MASW6010G	200	6000	0.6	45	46	Die
MASW20000	50	20000	1.4	58	43	Die
MASW-011107-DIE	DC	26500	1.3	46	45	Die
MASW-011128-DIE	50	26500	1.7	50	42	Die
MASWSS0103	5	1000	0.8	71	47	4 mm PQFN-20
MASWSS0161	500	2000	0.6	30	55	SOIC-8
MASWSS0179	50	2000	0.5	28	52	SOT-26
MASWSS0201	0	2500	1	45	44	3 mm PQFN-12
MASWSS0180	50	2500	0.7	38	46	SOIC-8
MASWSS0157	50	2500	0.7	35	45	SOIC-8
MASW-007221-000000	500	3000	0.4	22	52	SC-70 (SOT-363)
MASW-008899-000000	500	3000	0.3	24	48	SC-70 (SOT-363)
MASWSS0166	100	3000	0.4	21	55	SC-70 (SOT-363)
MASWSS0151	0	3000	0.6	32	55	SC-70 (SOT-363)
MASW-007935-000000	0	3000	0.7	34	50	SOT-26
MASWSS0192	50	3000	0.2	24	53	SC-70 (SOT-363)
MASWSS0143	100	3000	0.4	18	58	SOT-26
MASWSS0204	300	3000	0.3	22	56	SC-70 (SOT-363)
MASWSS0181	300	3000	0.5	23	57	SOT-26
MASWSS0136	0	3000	0.4	27	48	SC-70 (SOT-363)
MASWSS0176	50	3000	0.3	23	45	SOT-26
MASWSS0178	10	3000	0.6	57	43	MSOP-8
MASWSS0169	100	3000	0.7	48	50	MSOP-10
MASWSS0167	500	3000	0.4	28	48	1.2 x 1.5 mm PQFN-6
MASWSS0115	50	3000	0.3	24	46	SC-70 (SOT-363)
MASWSS0121	500	3000	0.7	54	46	4 mm PQFN-16
MASW-009101	5	3000	1	65	39	3 mm PQFN-16
MASW-008801	5	3000	0.8	85	47	3 mm PQFN-16
MASW-009588	500	4000	0.4	26	55	1 mm PDFN-6
MASW-008543	10	4000	0.7	58	53	MSOP-8
MASW-008853	0	5000	0.2	25	56	SC-70 (SOT-363)
MASW-011043	0	6000	0.6	30	—	2 mm STQFN-12
MASW-007588-000000	1000	6000	0.9	28	55	3 mm PQFN-12
<b>NEW</b> MASW-011184	1000	5000	0.35/0.5	29/27	54/51	3 mm PQFN-16
MASWSS0202	1000	6000	0.6	29	52	3 mm PQFN-12
MASW-009444	200	6000	0	28	54	1 mm PDFN-6
MASW-007921	50	7000	0.7	30	58	2 mm PDFN-8
MASW-007107-000000	0	8000	0.5	30	54	2 mm PQFN-8
MASW-008322	500	20000	1	45	48	4 mm PQFN-24
MASW-011102	0	30000	1.8	40	45	3 mm PQFN-14
MASW-011105	17700	31000	1.6	30	43	3 mm PQFN-14
MASW-011098	26000	40000	1.17	38	—	5 mm 20-LD laminate
<b>NEW</b> MASW-011145	27000	31000	1.3	45	60	3 mm 20-LD laminate

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Switches (continued)						
Part Number	Min Freq (MHz)	Max Freq (MHz)	Insertion Loss (dB)	Isolation (dB)	Input IP3 (dBm)	Package
<b>NEW</b> MASW-011197	0	44000	1.4	46	52	2.25 mm 12-LD laminate
<b>NEW</b> MASW-011198	0	44000	1.8	47	52	3 mm 20-LD laminate
<b>NEW</b> MASW-011151	0	67000	3	33	52	2.25 mm 12-LD laminate
<b>NEW</b> MASW-011152	0	55000	3.3	38	52	3 mm 20-LD laminate
SP3T						
MASWSS0200	500	2500	0.6	24	61	3 mm PQFN-12
MASWSS0199	0	2500	0.5	30	58	3 mm PQFN-12
MASWSS0144	500	3000	0.6	24	55	3 mm PQFN-12
MASW-008955	0	3000	0.5	22	54	2 mm PDFN-8
MASW-008330	500	3000	0.3	24	50	2 mm PQFN-8
MASWSS0191	500	3000	0.6	30	58	2 mm VTDFN-8
MASW-010612	0	3500	0.6	21	54	1.5 mm PDFN-8
MASW-009482	50	4000	0.7	23	65	2 mm STQFN-12
SP4T						
MASW4060G	0	4000	1.3	50	46	Die
MASW-007813-000000	500	3000	0.8	27	58	3 mm PQFN-16
MASW-010350	10	4000	0.8	80	50	4 mm PQFN-24
MASW-008566	50	3000	0.7	26	57	4 mm PQFN-16
SP5T						
MASW-010351	10	4000	1.4	57	50	4 mm PQFN-24

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MACOM's frequency conversion devices are ideal for point-to-point radio, aerospace and defense, and other broadband communications applications. Available as surface mount devices, our reliable products enable easy assembly and integration for real estate constrained customers.

Frequency Multipliers								
Part Number	Min Freq RF (MHz)	Max Freq RF (MHz)	Min Output (MHz)	Max Output (MHz)	Input Power (dB)	Multiply Factor	Conversion Loss (dB)	Package
XX1007-BD	13500	17000	27000	34000	8	2	12	Die
XX1000-BD	7500	25000	15000	50000	0	2	13	Die
XX1002-QH	2500	6000	5000	12000	3	2	13	4 mm PQFN-24
MAFC-004403	8000	12000	16000	24000	0	2	17	4 mm QFN
MAFC-010511	8000	12000	16000	24000	0	2	17	3 mm PQFN-16
XX1010-QT	14625	15000	29250	30000	4.5	2	14	3 mm QFN-16
XX1007-QT	13500	17000	27000	34000	8	2	10	3 mm PQFN-16
XX1000-QT	7500	22500	15000	45000	6	2	12	3 mm QFN-16

Receivers/Down Converters							
Part Number	Min Freq (MHz)	Max Freq (MHz)	Conversion Gain (dB)	Noise Figure (dBm)	Image Rejection (dBm)	LO Input Power (dBm)	Package
MADC-011021	71000	86000	12	5	-20	-5	8 mm SMT

Up Converters						
Part Number	Description	Min Freq (MHz)	Max Freq (MHz)	Gain (dBm)	OIP3 (dBm)	Package
MAMF-011142	Up Converter	71000	86000	30	—	12 x 8 mm SMT

Mixers							
Part Number	Min Freq RF/LO (MHz)	Max Freq RF/LO (MHz)	Min Freq IF (MHz)	Max Freq IF (MHz)	Conversion Loss (dB)	LO Drive (dBm)	Package
MAMX-011044-DIE	2500	9000	0	3500	7.5	23	Die
MAMX-011040-DIE	8000	26000	0	4000	8	18	Die
MAMX-011043-DIE	15000	45000	0	10000	9	16	Die
MAMX-011088-DIE	17000	64000	0	20000	8	15	Die
XM1001-BD	12000	40000	0	4000	8	12	Die
XM1003-BD	32000	42000	0	4000	9	12	Die
XM1002-BD	34000	46000	0	4000	7	12	Die
MAMXSS0013	1400	2100	0	500	8	5	SOT-25
MAMX-011044	2500	9000	0	3500	7	18	4 mm QFN-24
MAMX-011035	5500	19000	0	6000	6	15	3 mm QFN-12
MAMX-011067	5000	20000	0	6000	6	15	3 mm QFN-12
MAMX-011040	8000	26000	0	4000	9	16	4 mm QFN
MAMX-011075	8000	26000	0	4000	9	14	4 mm AQFN-24
MAMX-011009	14000	32000	0	7000	11	15	1.5 x 1.2 mm TDFN-6
MAMX-011071	8000	36000	0	10000	9.5	15	3 mm PQFN-12
MAMX-011066	5000	37000	0	4500	8	20	1.5 x 1.2 mm TDFN-6
MAMX-011036	8000	43000	0	10000	8.5	15	3 mm AQFN-12
MAMX-011043	15000	45000	0	10000	9	16	4 mm QFN
MAMX-011022	17000	53000	0	20000	9	15	3 mm AQFN-12
MAMX-011088	17000	55000	0	20000	8	15	3 mm AQFN-12

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# Frequency Conversion

Mixers (continued)							
Part Number	Min Freq RF/LO (MHz)	Max Freq RF/LO (MHz)	Min Freq IF (MHz)	Max Freq IF (MHz)	Conversion Loss (dB)	LO Drive (dBm)	Package
MAMX-011054	18000	46000	0	20000	6.5	15	3 mm AQFN-12
MAMX-011074	18000	46000	0	20000	7	16	3 mm PQFN-12

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MACOM's multifunctional modules are designed to provide customers with an affordable, highly integrated unit while delivering reliability and performance.

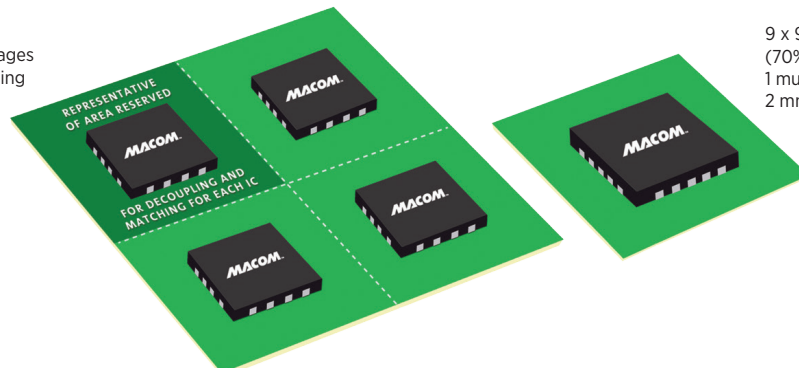
Applications such as radar and commercial 5G face size constraints and the need for higher frequency necessitates multifunction integration. From MACOM, one can expect an even higher level of integration of RF and microwave chipsets. In the data center and optical transport world, integrated products will provide data conversion and data transport solutions coupled with RF and microwave solutions to provide a very high level of integration that will ultimately drive optimal affordability and reliability.

Switch LNAs									
Part Number	Min Freq (GHz)	Max Freq (GHz)	Rx Gain (dB)	Rx Noise Figure (dB)	Rx OIP3 (dBm)	Tx IPO.1dB (dBm)	Bias Voltage (V)	Bias Current (mA)	Package
MAIA-011002	0.4	4	34	0.85 @ 2 GHz	36	50	3/28	180	5 mm HQFN-32
MAIA-011004	0.4	5	34	1.1 @ 2.7 GHz	36	50	5/28	180	5 mm HQFN-32
MAMF-011069	1.8	3.9	33	1.2 @ 2.6 GHz	33	44	5/28	255	5 mm PQFN-32
MAMF-011119	1	6	35	1.2 @ 4.2 GHz	31	41	5	78	6 mm QFN-20
<b>NEW</b> MAMF-011126	1	6	33.5	1.4 @ 4.5 GHz	30	41	5	78	6 mm QFN-20
<b>NEW</b> MAMF-011133 (Dual Channel)	2	6	35	1.2 @ 2.5 GHz	35.5	42	5	115	6 mm QFN-40
<b>NEW</b> MAMF-011138 (Dual Channel)	2	6	35	1.2 @ 2.5 GHz	35	42	5	115	6 mm QFN-40
<b>NEW</b> MAMF-011139	1.4	6	34	1.2 @ 2.5 GHz	35	51	5/28	208	5 mm HQFN-32
<b>NEW</b> MAMF-011144 (Dual Channel)	2.3	4.2	37	1.25 @ 2.6 GHz	33	42	5	108	6 mm QFN-40
<b>NEW</b> MAMF-011145 (Dual Channel)	2.3	4.2	37	1.25 @ 2.6 GHz	35	42	5	104	6 mm QFN-40
<b>NEW</b> MAMF-011149	1	6	35	1.1 @ 2.5 GHz 1.2 @ 3.75 GHz	31	41	5	80	3 mm QFN-16
<b>NEW</b> MAMF-011156	1	6	35	1.1 @ 2.5 GHz 1.2 @ 3.75 GHz	31	40.6	5	80	3 mm QFN-16

High Power Switch and Bias Module									
Part Number	Min Freq (GHz)	Max Freq (GHz)	Low IL (Tx) (dB)	Low IL (Rx) (dB)	Receive Isolation (dB)	Bias Current (Tx) (mA)	Bias Current (Rx) (mA)	Input P0.1dB (dBm)	Package
MAMF-011070	0.03	6	0.3	0.4	43	140	90	51	5 mm HQFN-20

5G Transmit/Receive Front End Modules LNA									
Part Number	Description	Min Freq (MHz)	Max Freq (MHz)	Tx Gain (dB)	Tx P1dB (dBm)	Rx Gain (dB)	Rx Noise Figure (dB)	Attenuation Range (dB)	Package
<b>NEW</b> MAMF-011099	Ka-Band T/R FEM	24	30	21	28	24	3.6	31.5	6.5 mm AQFN-40

16 x 16 = 256 mm square  
4 ICs in 4 mm x 4 mm packages  
2 mm clearance for decoupling



9 x 9 = 81 mm square  
(70% reduction in size)  
1 multifunction IC in 5 mm x 5 mm package  
2 mm clearance for decoupling

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MACOM voltage controlled oscillators (VCOs) generate frequency in aerospace and defense, point-to-point microwave backhaul, and other commercial communications applications. Featuring low phase noise, stable performance over temperature, low power consumption, and highly linear tuning, MACOM's VCOs provide leading edge solutions for challenging communications needs.

Voltage Controlled Oscillators (VCOs)							
Part Number	Min Freq (MHz)	Max Freq (MHz)	Phase Noise @ 10 kHz Offset (Vt = 5 V) (dBc/Hz)	Phase Noise @ 100 kHz Offset (Vt = 5V) (dBc/Hz)	Pout @ Fo (dBm)	DC Current (mA)	Package
MAOC-011030	5458	6129	-93	-117	14	185	5 mm PQFN-32
MAOC-009259	5700	6400	-93	-117	12	190	5 mm PQFN-32
MAOC-009260	6100	7000	-92	-117	8.5	205	5 mm PQFN-32
MAOC-009261	7100	7900	-93	-116	10	180	5 mm PQFN-32
MAOC-009262	7400	8210	-92	-117	14	170	5 mm PQFN-32
MAOC-009263	7800	8700	-90	-115	10.5	180	5 mm PQFN-32
MAOC-010334	8400	9250	-88	-115	10	168	5 mm PQFN-32
MAOC-109173	8805	9542	-88	-117	9	90	5 mm PQFN-32
MAOC-109173	8805	9542	-88	-117	9	90	5 mm PQFN-32
MAOC-009264	8800	9800	-88	-115	9	185	5 mm PQFN-32
MAOC-009871	9200	10200	-86	-113	7	185	5 mm PQFN-32
MAOC-009265	9400	10800	-86	-113	8.5	175	5 mm PQFN-32
MAOC-009266	10200	11300	-87	-114	8.5	200	5 mm PQFN-32
MAOC-009872	11000	11800	-83	-112	7	165	5 mm PQFN-32
MAOC-009267	11200	12600	-82	-112	6	175	5 mm PQFN-32
MAOC-009269	11400	12800	-83	-110	5	180	5 mm PQFN-32
MAOC-009270	12200	13800	-78	-107	6.5	165	5 mm PQFN-32
MAOC-009268	12700	14200	-79	-108	9	165	5 mm PQFN-32
MAOC-011027	13400	14400	-79	-108	8	205	5 mm PQFN-32

Note: Part numbers are RoHS compliant  
 Detailed specifications can be found quickly on our website at [macom.com](http://macom.com) by typing the part number into the search box.  
 All specifications are subject to change.



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