

RFMD 2014 NEW PRODUCT GUIDE



RFMD is a global leader addressing the RF industry's complex challenges by delivering a broad portfolio of high-performance RF components for a diverse range of applications and end markets. Our product leadership, extensive portfolio breadth, and exceptional technical support enable us to accelerate our customers' time to market.



AS9100, ISO 9001: 2008 Certified, ISO 14001: 2004 Certified, ISO/TS 16949: 2009 Certified, OHSAS 18001: 2007 Certified

New Products Preview

pHEMT Low Noise Amplifiers

- Low noise figure <1.0dB
- Excellent output power
- Versatile with extended frequency ranges

Freq. Range (Min) (MHz)	Freq Range (Max) (MHz)	Small Signal				Vcc (V)	Icc (mA)	Package (mm)	Part Number
		Gain (dB)	NF (dB)	OP1dB (dBm)	OIP3 (dBm)				
400	1500	17.5	0.43	23	46.5	5	120	DFN, 2 x 2	RFLA1022
1500	3000	17	0.45	22.5	38	5	60	DFN, 2 x 2	RFLA3022

Digital Variable Gain Amplifiers

- Amplifiers with digital step attenuators
- Serial and dual channels available
- High linearity power control

Freq. Range (Min) (MHz)	Freq Range (Max) (MHz)	Number of Bits	Gain (dB)	Step Size (dB)	P1dB (dBm)	OIP3 (dBm)	Channels	Vcc (V)	Icc (mA)	Package (mm)	Part Number
50	4000	6	17.5	0.5	19	33	One	5	82	MCM 5.2 x 5.2	RFDA4005

Digital Step Attenuator

- Broadband 50MHz to 4000MHz operation
- Single supply, 3V to 5V operation
- High linearity, wireless infrastructure grade performance

Freq. Range (Min) (MHz)	Freq Range (Max) (MHz)	Number of bits	Step size (dB)	Attenuation			Insertion Loss (dB)	Interface	Vcc (V)	Package (mm)	Part Number
				Range (dB)	IP1dB (dBm)	IIP3 (dBm)					
50	4000	5	1	31	30	50	1.4	Serial	5	QFN, 3 x 3	RFSA3513
50	4000	6	0.5	31.5	30	50	1.4	Serial	5	QFN, 3 x 3	RFSA3613
50	4000	7	0.25	31.75	30	50	1.4	Serial	5	QFN, 3 x 3	RFSA3713
50	4000	7	0.25	31.75	30	50	1.5	Serial & Parallel	5	QFN 4 x 4	RFSA3714
50	4000	7	0.25	31.75	30	50	1.5	Serial & Parallel	5	QFN, 5 x 5	RFSA3715

Wi-Fi and Connectivity High Power Amplifiers

- Power amplifiers (PA) designed for 802.11a/b/g/n/ac applications
- Capable of achieving maximum linear powers with an EVM <1.8% while maintaining excellent power added efficiency
- Covers multiple power classes for Wi-Fi consumer premise equipment, set-top box, router, AP, and infrastructure applications

Freq. Range (Min) (GHz)	Freq Range (Max) (GHz)	Gain (dB)	Vcc (V)	Package	EVM (%)	Linear Pout (dBm)	Current at Po (mA)	Part Number
2.4	2.5	40	5	Laminate 4 x 4 x 1.05	3	28	590	RFPA5208
4.9	5.825	30	5	Laminate 4 x 4 x 1	1.8	21	400	RFPA5502
4.9	5.85	31	5	QFN 4 x 4 x 1.05	1.8	23	315	RFPA5512

Wi-Fi CPE Front End Modules

- Complete integrated solution in a single front end module (FEM) for Wi-Fi 802.11a/n/ac systems
- Integrated power amplifier (PA), single pole two throw switch (SP2T) and an LNA with bypass
- Industry standard 3.0mm x 3.0mm x 1.0mm, 16-pin laminate package

Freq. Range (Min) (GHz)	Freq Range (Max) (GHz)	Gain (dB)	Vcc (V)	Package	EVM (%)	Linear Pout (dBm)	Current at Po (mA)	Part Number
4.9	5.85	29.5	3.3	Laminate 3 x 3 x 1	1.8	17.5	260	RFFM4503

Wi-Fi CPE Switch/LNA

- Designed specifically for high-performance Wi-Fi applications in the 5GHz ISM band
- Integrated LNA with bypass and a SPDT switch

Freq. Range (Min) (GHz)	Freq Range (Max) (GHz)	NF (dB)	OP1dB (dBm)	OIP3 (dBm)	Vcc (V)	Icc (mA)	Package	P1dB (dBm)	Insertion Loss (Min) (dB)	IIP3 (dBm)	NF (dB)	LNA Gain (dB)	Switch Type	Part Number
4.9	5.85	2.4	7	19	2.7 to 4.2	17	QFN 2 x 2 x 0.5	31	1	3	2.4	16	SP2T	RFFM5541

2.5GHz Wi-Fi Front End Modules

- Complete integrated solution in a single front end module (FEM) for Wi-Fi 802.11b/g/n/ac and Bluetooth systems
- Integrated 2.5GHz power amplifier (PA), single pole triple throw switch (SP3T) and variants, LNA with bypass, and a power detector coupler for improved accuracy
- Optimal linear power capability matched with advanced power added efficiency performance

Freq. Range (Min) (GHz)	Freq Range (Max) (GHz)	Gain (dB)	Vcc (V)	Package	EVM (%)	Linear Pout (dBm)	Current at Po (mA)	Part Number
2.4	2.5	26	3.0 to 4.2	QFN 2.5 x 2.5 x 0.40	1.3	18	145	RFFM8211
2.4	2.5	27	3.3	QFN 2.3 x 2.3 x 0.33	2.5	19.5	195	RFFM8215
2.412	2.484	27	3.3	QFN 2.3 x 2.3 x 0.33	2	20	195	RFFM8228

5GHz Wi-Fi Front End Modules

- Complete integrated solution in a single front end module (FEM) for Wi-Fi 802.11a/n/ac systems
- Integrated 5GHz power amplifier (PA), single pole double throw switch (SP2T) and variants, LNA with bypass, and a power detector coupler for improved accuracy
- Optimal linear power capability matched with advanced power added efficiency performance

Freq. Range (Min) (GHz)	Freq Range (Max) (GHz)	Gain (dB)	Vcc (V)	Package	EVM (%)	Linear Pout (dBm)	Current at Po (mA)	Part Number
4.9	5.85	28	3.6	QFN 2.5 x 2.5 x 0.40	1.5	17.5	210	RFFM8511
4.9	5.85	28	1.8	QFN 2.3 x 2.3 x 0.33	1.8	17	180	RFFM8515
5.18	5.825	28	1.8	QFN 2.5 x 2.5 x 0.40	1.8	18	245	RFFM8518
5.18	5.825	28	1.8	QFN 2.3 x 2.3 x 0.33	1.8	18	245	RFFM8528

Smart Energy AMI/ZigBee/ISM Front End Modules

- Integrated front end module (FEM) intended for ISM band systems ranging from 169MHz to 2.4GHz
- Targeting Smart Energy, AMI/AMR, Home Area Networks (HAN) and Mesh interoperable systems
- Variants provide separate ports for Rx and Tx paths
- LNA bypass
- Diversity antenna solutions
- Single-ended and differential solutions

Freq. Range (Min) (MHz)	Freq Range (Max) (MHz)	Gain (dB)	Vcc (V)	Package	Linear Pout (dBm)	Current at Po (mA)	Part Number
2400	2500	12	2.0 to 4.0	2.5 x 2.5 x 0.40	14	20	RFFM6205
902	928, 868	14	3.6	LGA 4.0 x 3.0		8	RFFM6909
902	928, 868	31	5	6.0 x 7.0 x 0.975	31	850	RFFM6905
902	928, 868	13	3.6	5.0 x 5.5 x 1.2	30.5	680	RFFM6907
430	450	25	2.5 to 4.5	6.0 x 6.0 x 0.975	27.5	350	RFFM6404
902	928, 868	27	3.6	5.0 x 5.5 x 1.2	30	750	RFFM6906

Switches (Packaged)

- Versatility of operation over broad range of frequency bands
- Excellent insertion loss and isolation performance
- Primary path and diversity options

Freq. Range (Min) (MHz)	Freq. Range (Max) (MHz)	Switch Type	Isolation (dB)	Switching Speeds (ns)	Insertion Loss (dB)	Vcc (V)	Package (mm)	Part Number
5	6000	SP3T	37	2	0.45	5	QFN, 1.8 x 1.8	RFSW6032
5	6000	SP4T	34	2	0.45	5	QFN, 1.8 x 1.8	RFSW6042
5	6000	SP6T	27	2	0.53	5	QFN, 2 x 2	RFSW6062
150	5000	SPDT	25	100	0.4	3	QFN, 3 x 3	RFSW6023
10	6000	SP3T	27	25	0.5	3	DFN, 2 x 2	RFSW6132

Programmable Array of Capacitors (PAC)

- 3 Wire SPI compatible control
- Programmable shunt switches on both RF ports for high isolation operation
- Wide tuning range
- 6-Bit, 64-state programmable array of capacitors

Freq. Range (Min) (MHz)	Freq Range (Max) (MHz)	Interface	Capacitance (Min) (pF)	Capacitance (Max) (pF)	Quality Factor	V _{DD} (V)	Package (mm)	Part Number
500	3000	SPI	0.46	13	35	2.4 to 3.5	MCM, 2 x 2.5	RFAC3612

CATV 75Ω Push-Pull Amplifier ICs

- Push-pull topology for excellent CSO
- Excellent third order performance at low power dissipation
- Positive gain slope available on some models

Freq. Range (Min) (MHz)	Freq Range (Max) (MHz)	Gain (dB)	NF (dB)	OP1dB (dBm)	OIP3 (dBm)	CTB* (dBC)	CSO* (dBC)	Vcc (V)	Icc (mA)	Package (mm)	Part Number
5	1200	16.5	3	24	44	-83	-82	6	364	SOIC-8	RFCA8828

* 79 channel, +34dBmV flat tilt

CATV 75Ω Single-Ended Linear Amplifiers

- Excellent linearity
- Low power consumption
- Small footprint

Freq. Range (Min) (MHz)	Freq Range (Max) (MHz)	Gain (dB)	NF (dB)	OP1dB (dBm)	OIP3 (dBm)	Vcc (V)	Icc (mA)	Package (mm)	Part Number
50	1200	22	1.54	22.5	39.2	6	178	SOT-89	RFCA3828

CATV Voltage-Controlled Attenuators

- 3V and 5V versions available
- High linearity suitable for CATV infrastructure applications
- Linear in dB control characteristic

Freq. Range (Min) (MHz)	Freq Range (Max) (MHz)	Gain Control Range (dB)	Insertion Loss (Min) (dB)	CTB* (dBc)	CSO* (dBC)	Vcc (V)	Package (mm)	Part Number
50	3000	35	1.5	-75	-80	5	QFN, 3 x 3	RFSA3043

* 132 channel, +38dBmV input flat tilt

CATV 75Ω DOCSIS 3.1 Products

- 1200MHz operations
- Extremely low distortion
- Miniaturized MCM packages

Freq. Range (Min) (MHz)	Freq Range (Max) (MHz)	Gain (dB)	NF (dB)	Icc (mA)	Package (mm)	CTB (dBc)	CSO (dBC)	Note For CTB & CSO Spec	Part Number
40	1200	23	3	450	9x8	-80	-80	Vo=60dBmV at 1200MHz, 22dB extrapolated tilt, 79 analog channels plus 110 digital channels, -6dB offset	RFCM3316
40	1200	25	3	450	9x8	-80	-80	Vo=60dBmV at 1200MHz, 22dB extrapolated tilt, 79 analog channels plus 110 digital channels, -6dB offset	RFCM3326
40	1200	8 to 28	5	410	11 x 11	-67	-70	Vo=46dBmV, flat, 79 analog channels plus 75 digital channels, -6dB offset	RFAM3790

To see RFMD's complete list of products,
visit www.rfmd.com/selectionguide

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