



## RF/ZigBee™ Transceivers

Designed for Low-Power, Low data rate applications, Freescale's offering of RF/ZigBee Transceivers covers any need that might arise in the development of your design. Freescale has solutions for both proprietary and ZigBee networks. Single-chip transceivers eliminate the need for a lot of external components. System in a package solutions integrates an 8-bit micro to further lower the cost of implementation.

Protocol	Maximum Data Rate (kbps)	Supply Voltage (V)	Supply current @ 1% Duty Cycle (Typical mA)	Frequency (GHz)	Tx/Rx Switch	Package Type	Digi-Key Part No.	Price Each			Freescale Part No.
								1	25	100	
<b>2.4GHz Transceivers</b>											
Figure 8 Wireless ZigBee	250	2.0 - 3.4	30 Tx / 37 Rx	2.4 - 2.5	No	32-QFN	MC13193FC-ND	7.00	4.25	3.86	MC13193FC
Figure 8 Wireless ZigBee	250	2.0 - 3.4	30 Tx / 37 Rx	2.4 - 2.5	No	32-QFN	MC13193FCR2CT-ND	7.00	5.60	5.04	MC13193FCR2
Figure 8 Wireless ZigBee	250	2.0 - 3.4	30 Tx / 37 Rx	2.4 - 2.5	No	32-QFN	MC13193FCR2TR-ND	8590.00/2,500			MC13193FCR2
ZigBee/ IEEE® 802.15.4	250	2.0 - 3.4	30 Tx / 37 Rx	2.4 - 2.5	No	32-QFN	MC13192FC-ND	4.48	3.15	2.87	MC13192FC
ZigBee/ IEEE 802.15.4	250	2.0 - 3.4	30 Tx / 37 Rx	2.4 - 2.5	No	32-QFN	MC13192FCR2CT-ND	4.35	3.06	2.79	MC13192FCR2
ZigBee/ IEEE 802.15.4	250	2.0 - 3.4	30 Tx / 37 Rx	2.4 - 2.5	No	32-QFN	MC13192FCR2TR-ND	6265.00/2,500			MC13192FCR2
Proprietary	250	2.0 - 3.4	30 Tx / 37 Rx	2.4 - 2.5	No	32-QFN	MC13191FC-ND	3.65	2.57	2.35	MC13191FC
Proprietary	250	2.0 - 3.4	30 Tx / 37 Rx	2.4 - 2.5	No	32-QFN	MC13191FCR2CT-ND	3.65	2.22	2.12	MC13191FCR2
Proprietary	250	2.0 - 3.4	30 Tx / 37 Rx	2.4 - 2.5	No	32-QFN	MC13191FCR2TR-ND	5285.00/2,500			MC13191FCR2
Proprietary	250	2.0 - 3.4	30 Tx / 37 Rx	2.4 - 2.5	No	32-QFN	MC13190FCCT-ND	5.05	3.07	2.93	MC13190FCR2
ZigBee/ IEEE 802.15.4	250	2.0 - 3.4	30 Tx / 37 Rx	2.4 - 2.5	Yes	71-LGA	MC13213-ND	6.22	5.15	4.70	MC13213
ZigBee/ IEEE 802.15.4	250	2.0 - 3.4	30 Tx / 37 Rx	2.4 - 2.5	Yes	71-LGA	MC13213R2TR-ND	8438.00/2000			MC13213R2
ZigBee/ IEEE 802.15.4	250	2.0 - 3.4	30 Tx / 37 Rx	2.4 - 2.5	Yes	71-LGA	MC13212-ND	5.67	4.70	3.85	MC13212
ZigBee/ IEEE 802.15.4	250	2.0 - 3.4	30 Tx / 37 Rx	2.4 - 2.5	Yes	71-LGA	MC13212R2TR-ND	7690.00/2000			MC13212R2
Proprietary	250	2.0 - 3.4	30 Tx / 37 Rx	2.4 - 2.5	Yes	71-LGA	MC13211-ND	5.20	4.31	3.53	MC13211
Proprietary	250	2.0 - 3.4	30 Tx / 37 Rx	2.4 - 2.5	Yes	71-LGA	MC13211R2TR-ND	7056.00/2000			MC13211R2
ZigBee/ IEEE 802.15.4	250	2.0 - 3.4	30 Tx / 37 Rx	2.4 - 2.5	Yes	32-QFN	MC13203FC-ND	7.40	4.49	4.08	MC13203FC
ZigBee/ IEEE 802.15.4	250	2.0 - 3.4	30 Tx / 37 Rx	2.4 - 2.5	Yes	32-QFN	MC13203FCR2TR-ND	9080.00/2500			MC13203FCR2
ZigBee/ IEEE 802.15.4	250	2.0 - 3.4	30 Tx / 37 Rx	2.4 - 2.5	Yes	32-QFN	MC13202FC-ND	4.65	3.27	2.99	MC13202FC
ZigBee/ IEEE 802.15.4	250	2.0 - 3.4	30 Tx / 37 Rx	2.4 - 2.5	Yes	32-QFN	MC13202FCR2TR-ND	6695.00/2500			MC13202FCR2
Proprietary	250	2.0 - 3.4	30 Tx / 37 Rx	2.4 - 2.5	Yes	32-QFN	MC13201FC-ND	3.98	2.80	2.55	MC13201FC
Proprietary	250	2.0 - 3.4	30 Tx / 37 Rx	2.4 - 2.5	Yes	32-QFN	MC13201FCR2TR-ND	5725.00/2500			MC13201FCR2
<b>Development Tools</b>											
Development Kit for MC1321x .....							1321XDSK-ND	306.47	—	—	1321XDSK
Development Kit for MC1321x, with USB Multilink .....							1321XDSK-BDM-ND	408.78	—	—	1321XDSK-BDM
Evaluation Kit for MC1321x .....							1321XEVK-ND	1929.67	—	—	1321XEVK
Network Starter Kit for MC1321x .....							1321XNSK-ND	584.48	—	—	1321XNSK
Network Starter Kit for MC1321x, with USB Multilink .....							1321XNSK-BDM-ND	643.04	—	—	1321XNSK-BDM

◆ RoHS Compliant † Cut Tape ‡ Tape and Reel

## RF High Power LDMOS Transistors

Frequency Band (MHz)	P <sub>OUT</sub> Typical (W)	V <sub>DD</sub> (V)	Gain dB/MHz	Package	Digi-Key Part No.	Cut Tape Price Each			Digi-Key Part No.	Tape & Reel Pricing 500
						1	25	100		
1930 - 1990	12	28	14/1990	TO-272	MRF5S19060NBR1CT-ND	45.41	37.83	35.59	MRF5S19060NBR1TR-ND	20397.60
1930 - 1990	12	28	14/1990	TO-270	MRF5S19060NR1CT-ND	45.41	37.83	35.59	MRF5S19060NR1TR-ND	20397.60
880	20	26	19.5/880	TO-272	MRF5S9100NBR1CT-ND	32.04	26.69	25.11	MRF5S9100NBR1TR-ND	14392.80
880	20	26	19.5/880	TO-270	MRF5S9100NR1CT-ND	42.72	35.58	33.48	MRF5S9100NR1TR-ND	19188.00
869 - 960	100	26	17.5/960	TO-272	MRF5S9101NBR1CT-ND	42.72	35.58	33.48	MRF5S9101NBR1TR-ND	19188.00
869 - 960	100	26	17.5/960	TO-270	MRF5S9101NR1CT-ND	42.72	35.58	33.48	MRF5S9101NR1TR-ND	19188.00

◆ RoHS Compliant

## RF GaAS PHEMT Transistors



Frequency Maximum (GHz)	P <sub>OUT</sub> Typical (W)	V <sub>DD</sub> (V)	Gain dB/MHz	Package	Digi-Key Part No.	Cut Tape Price Each		Digi-Key Part No.	Tape & Reel Pricing 50
						1	25		
3.5	3	12	9/3550	1.5-PLD	MRFG35003NR5CT-ND	13.81	10.44	—	—
5.8	9	12	10/3550	NI-360HF	MRFG35010NR5CT-ND	37.14	28.23	MRFG35010NR5TR-ND	1372.00
5	1.5	6	10/3550	1.5-PLD	MRFG35002N6R5CT-ND	9.79	6.68	MRFG35002N6R5TR-ND	333.75
5.8	10	12	10/3550	1.5-PLD	MRFG35010ANR5CT-ND	37.14	28.23	MRFG35010ANR5TR-ND	1691.20



## RF Switches, Attenuators and Evaluation Boards



Description	Package	Digi-Key Part No.	Price Each			Digi-Key Part No.	Tape & Reel Pricing 2,500	Honeywell Part No.
			1	25	100			
31dB, DC-2.5GHz, 5-Bit Serial Digital Attenuator	16-VQFN	342-1046-1-ND	17.00	7.00	6.00	342-1046-2-ND	3400.00/M	HRF-AT4521-AU
31.5dB, DC-4GHz, 6-Bit Parallel Digital Attenuator	24-VQFN	342-1048-1-ND	17.00	7.00	6.00	342-1048-2-ND	3400.00/M	HRF-AT4610-TR
31.5dB, DC-4GHz, 6-Bit Serial Digital Attenuator	16-VQFN	342-1050-1-ND	17.00	7.00	6.00	342-1050-2-ND	3400.00/M	HRF-AT4611-TR
SP6T Absorptive RF Switch	24-VQFN	342-1044-1-ND	17.00	7.00	6.00	342-1044-2-ND	3400.00/M	HRF-SW1030-TR
Evaluation Board for HRF-AT4610 .....		342-1049-ND	99.00	—	—	—	—	HRF-AT4610-E
Evaluation Board for HRF-AT4611 .....		342-1051-ND	99.00	—	—	—	—	HRF-AT4611-E
Evaluation Board for HRF-SW1030 .....		342-1045-ND	99.00	—	—	—	—	HRF-SW1030-E

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