

A highly integrated Bluetooth 1.2 compliant solution. The integrated baseband controller and 2.4GHz radio combine to form a complete, small form-factor (6.1mm x 9.1mm x 1.2mm) Bluetooth node. The baseband controller has a standard Host Controller Interface (HCI). The firmware supplied in the on-chip ROM supports a complete Bluetooth Link Manager and HCI with communication through a UART or USB interface. This firmware features point-to-point and point-to-multipoint link management, supporting data rates up to 723kbps. The radio has a heterodyne receiver architecture with a low intermediate frequency (IF), which enables the IF filters to be integrated on-chip. The transmitter uses direct IQ-modulation with Gaussian-filtered bit-stream data, a voltage controlled oscillator (VCO) buffer and a power amplifier.

LMX5453 Bluetooth 2.0 compliant solution Features: • eSCO • eSCO over USB HCI transport

Digi-Key Part No.	Cut Tape Price Each			Digi-Key Part No.	Tape and Reel	
	1	25	100		Qty.	Pricing
LMX5453SMXCT-ND	14.09	12.08	10.71	LMX5453SMXTR-ND	2,500	9780.76/M

Bluetooth® Serial Port Modules



Digital Hardware: • Baseband and Link Management Processors • CompactRISC Core • Integrated Memory: Flash, RAM • UART Command/Data Port • Auxiliary Host Interface Ports • Advanced Power Management (APM) features • Advanced Audio Interface for external PCM codec

Firmware: Complete Bluetooth Stack including: • Baseband and Link Manager • L2CAP, RFCOMM, SDP • Profiles: GAP, SDAP, SPP

LMX9830: Bluetooth Serial Port Module is a highly integrated Bluetooth 2.0 baseband controller and 2.4GHz radio, combined to form a complete small form factor (6.1mm x 9.1mm x 1.2mm) Bluetooth node. All hardware and firmware is included to provide a complete solution from antenna through the complete lower and upper layers of the Bluetooth stack.

LMX9838: Bluetooth Serial Port Module is a fully integrated Bluetooth 2.0 baseband controller, 2.4GHz radio, crystal, antenna, LDO and discreets; combined to form a complete small form factor (10mm x 17mm x 2.0mm) Bluetooth node. All hardware and firmware is included to provide a complete solution from antenna through the complete lower and upper layers of the Bluetooth stack.

LMX9838DONGLE Kit: This kit includes everything necessary to evaluate all the features of the LMX9838 Bluetooth.

Kit Includes: • Complete RS232/UART evaluation board • Audio codec board • Power supply and cables • Simply Blue Commander software • Simply Blue Smart demo software • Full design documentation • Bluetooth USB dongle and software (additional Bluetooth device to connect to)

Digi-Key Part No.	1	Price Each		National Semiconductor Part No.
		25	100	
LMX9830SM-ND	12.48	10.70	9.49	LMX9830SM/NOPB
LMX9838SB-ND	24.00	22.40	20.80	LMX9838SB/NOPB
LMX9838DONGLE-ND	253.50	—	—	LMX9838DONGLE

PLL/Frequency Synthesizer



PLL Type	Modulus	Operating Freq. (MHz)	Aux. Op. Frequency (MHz)	Normalized Phase Noise	Digi-Key Part No.	Price Each		
						1	25	100
RF/IF Dual	Integer	2,000	500	-197 dBc/Hz	LMX1600SLBXCCT-ND‡	2.11	1.57	1.16
					LMX1600SLBXTR-ND§	2125.00/2,500		
					LMX1600TM-ND	1.98	1.48	1.09
RF/IF Dual	Integer	1,100	500	-197 dBc/Hz	LMX1601SLBXCCT-ND‡	2.56	1.90	1.41
					LMX1601SLBXTR-ND§	2578.13/2,500		
					LMX1601TM-ND◆	1.71	1.27	.94
					LMX1601TMXCT-ND‡◆	1.71	1.27	.94
LMX1601TMXTR-ND§◆	1718.75/2,500							
RF/IF Dual	Integer	1,100	1,100	-197 dBc/Hz	LMX1602TM-ND◆	1.83	1.36	1.01
Single	Integer	550	—	-210 dBc/Hz	LMX2306SLBXCCT-ND‡◆	2.50	1.90	1.45
					LMX2306SLBXTR-ND§◆	3125.00/2,500		
					LMX2306TM-ND◆	2.98	2.21	1.64
					LMX2306TMXTR-ND§◆	3000.00/2,500		
Single	Integer	2,500	—	-212 dBc/Hz	LMX2310USLDCCT-ND‡	3.38	2.57	1.96
LMX2310USLDXTR-ND§	4218.75/2,500							
Single	Integer	2,000	—	-212 dBc/Hz	LMX2311USLDCCT-ND‡	3.25	2.47	1.89
LMX2311USLDXTR-ND§	4062.50/2,500							
Single	Integer	1,200	—	-212 dBc/Hz	LMX2312USLDCCT-ND‡	3.10	2.36	1.80
LMX2312USLDXTR-ND§	3875.00/2,500							
Single	Integer	600	—	-212 dBc/Hz	LMX2313USLDCCT-ND‡◆	3.00	2.28	1.74
LMX2313USLDXTR-ND§◆	3750.00/2,500							
Single	Integer	1,200	—	-210 dBc/Hz	LMX2316SLBXCCT-ND‡	2.58	1.96	1.50
					LMX2316SLBXTR-ND§	3218.75/2,500		
					LMX2316TM-ND◆	3.04	2.26	1.67
Single	Integer	2,800	—	-210 dBc/Hz	LMX2326SLBXCCT-ND‡	3.33	2.53	1.93
					LMX2326SLBXTR-ND§	4156.25/2,500		
					LMX2326TM-ND◆	2.88	2.19	1.67
RF/IF Dual	Integer	2,500	510	-211 dBc/Hz	LMX2330LTM-ND◆	3.03	2.30	1.76
RF/IF Dual	Integer	2,500	600	-212 dBc/Hz	LMX2330USLEXCT-ND‡	3.70	2.82	2.15
LMX2330USLEXTR-ND§	4625.00/2,500							
RF/IF Dual	Integer	2,000	510	-211 dBc/Hz	LMX2331LTM-ND	2.63	2.00	1.53
RF/IF Dual	Integer	1,200	510	-211 dBc/Hz	LMX2332SLBXCCT-ND‡	3.25	2.47	1.89
					LMX2332SLBXTR-ND§	4062.50/2,500		
					LMX2332LTM-ND◆	2.60	1.98	1.51
RF/IF Dual	Integer	1,100	1,100	-211 dBc/Hz	LMX2335LTM-ND◆	3.05	2.27	1.68
LMX2335LTMXCT-ND‡	3.04 2.26 1.67							
LMX2335LTMXTR-ND§	3075.00/2,500							

PLL Type	Modulus	Operating Freq. (MHz)	Aux. Op. Frequency (MHz)	Normalized Phase Noise	Digi-Key Part No.	Price Each		
						1	25	100
RF/IF Dual	Integer	2,000	1,100	-211 dBc/Hz	LMX2336LTM-ND◆	2.85	2.17	1.66
Single	Integer	2,000	—	-217 dBc/Hz	LMX2346SLBXCCT-ND‡	4.53	3.44	2.63
					LMX2346SLBXTR-ND§	4531.25/2,500		
					LMX2346TM-ND◆	3.58	2.72	2.08
Single	Integer	2,500	—	-217 dBc/Hz	LMX2347SLBXCCT-ND‡	3.73	2.84	2.17
					LMX2347SLBXTR-ND§	4656.25/2,500		
					LMX2347TM-ND◆	3.63	2.76	2.11
RF/IF Dual	Fractional-N	2,500	550	-201 dBc/Hz	LMX2350TM-ND◆	5.29	4.19	3.36
RF/IF Dual	Fractional-N	1,200	550	-201 dBc/Hz	LMX2352TM-ND◆	5.70	4.34	3.31
RF/IF Dual	Fractional-N	1,200	550	-201 dBc/Hz	LMX2352TMXCT-ND‡	5.70	4.34	3.31
					LMX2352TMXTR-ND§	7125.00/2,500		
Single	Fractional-N	2,500	—	-201 dBc/Hz	LMX2353TM-ND◆	3.80	2.89	2.21
RF/IF Dual	Fractional-N	2,500	550	-204 dBc/Hz	LMX2354SLBXCCT-ND‡	4.20	3.20	2.44
					LMX2354SLBXTR-ND§	5250.00/2,500		
					LMX2354TM-ND◆	4.05	3.08	2.35
RF/IF Dual	Fractional-N	2,600	850	-210 dBc/Hz	LMX2364SLEXCT-ND‡	4.60	3.50	2.67
					LMX2364SLEXTR-ND§	5750.00/2,500		
					LMX2364TM-ND◆	4.48	3.41	2.60
RF/IF Dual	Integer	3,000	800	-219 dBc/Hz	LMX2430SLEXCT-ND‡	4.23	3.22	2.46
					LMX2430SLEXTR-ND§	5281.25/2,500		
					LMX2430TM-ND◆	4.03	3.06	2.34
RF/IF Dual	Integer	3,600	1,700	-219 dBc/Hz	LMX2433SLEXCT-ND‡	4.48	3.41	2.60
					LMX2433SLEXTR-ND§	5593.75/2,500		
					LMX2433TM-ND◆	4.20	3.20	2.44
RF/IF Dual	Integer	5,000	2,500	-219 dBc/Hz	LMX2434SLEXCT-ND‡	4.60	3.50	2.67
					LMX2434SLEXTR-ND§	5750.00/2,500		
					LMX2434TM-ND◆	4.43	3.37	2.57
Delta-Sigma	Fractional-N	2,600	800	-210 dBc/Hz	LMX2470SLEXCT-ND‡◆	5.00	3.80	2.90
					LMX2470SLEXTR-ND§◆	6250.00/2,500		
Delta-Sigma	Fractional-N	7,500	3,000	-210 dBc/Hz	LMX2487ESQCT-ND‡◆	6.20	4.90	3.93
					LMX2487ESQTR-ND§◆	3658.00/1,000		
Evaluation Board for LMX2433						LMX2433EVAL-ND	225.00/1	
Evaluation Board for LMX2470						LMX2470EVAL-ND	225.00/1	

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PLL Type	Wireless Std.	Integrated VCOs	Integrated Loop Filter	RF PLL	IF PLL	Frequency Range (MHz)	Digi-Key Part No.	Price Each		
								1	25	100
PLL+ VCO	PDC	2	Yes	Sigma-Delta	No	633-768, 1270-1395	LMX2525LQ1321CT-ND* LMX2525LQ1321TR-ND§	6.49	5.13	4.11
PLL+ VCO	PCS	1	Yes	Sigma-Delta	Integer	1619-1650	LMX2502LQ1635CT-ND* LMX2502LQ1635TR-ND§	5.65	4.30	3.28
PLL+ VCO	CDMA	1	Yes	Sigma-Delta	Integer	954-980, 1270-1395	LMX2512LQ0967CT-ND* LMX2512LQ0967TR-ND§ LMX2512LQ1065CT-ND* LMX2512LQ1065TR-ND§	5.65	4.30	3.28
PLL+ VCO	PCS+ GPS	2	Yes	Sigma-Delta	Integer	1355, 1619-1650	LMX2522LQ1635CT-ND* LMX2522LQ1635TR-ND§	5.69	4.50	3.61
PLL+ VCO	All	1	Yes	Sigma-Delta	No	749.5-755, 1499-1510	LMX2531LQ1500ECT-ND*◆ LMX2531LQ1500ETR-ND§◆	14.39	12.33	10.94
PLL+ VCO	All	1	Yes	Sigma-Delta	No	765-818, 1530-1636	LMX2531LQ1570ECT-ND*◆ LMX2531LQ1570ETR-ND§◆	11.06	9.48	8.41
PLL+ VCO	All	1	Yes	Sigma-Delta	No	795-850, 1590-1700	LMX2531LQ1650ECT-ND*◆ LMX2531LQ1650ETR-ND§◆	11.06	9.48	8.41

PLL Type	Wireless Std.	Integrated VCOs	Integrated Loop Filter	RF PLL	IF PLL	Frequency Range (MHz)	Digi-Key Part No.	Price Each		
								1	25	100
PLL+ VCO	All	1	Yes	Sigma-Delta	No	831-885, 1662-1770	LMX2531LQ1700ECT-ND*◆ LMX2531LQ1700ETR-ND§◆	11.06	9.48	8.41
PLL+ VCO	All	1	Yes	Sigma-Delta	No	880-933, 1760-1866	LMX2531LQ1742CT-ND*◆ LMX2531LQ1742TR-ND§◆	11.06	9.48	8.41
PLL+ VCO	All	1	Yes	Sigma-Delta	No	863-920, 1726-1840	LMX2531LQ1778ECT-ND*◆ LMX2531LQ1778ETR-ND§◆	11.06	9.48	8.41
PLL+ VCO	All	1	Yes	Sigma-Delta	No	917-1014, 1834-2028	LMX2531LQ1910ECT-ND*◆ LMX2531LQ1910ETR-ND§◆	11.06	9.48	8.41
PLL+ VCO	All	1	Yes	Sigma-Delta	No	952-1137, 1904-2274	LMX2531LQ2080ECT-ND*◆ LMX2531LQ2080ETR-ND§◆	11.06	9.48	8.41
PLL+ VCO	All	1	Yes	Sigma-Delta	No	1089-1200, 2178-2400	LMX2531LQ2265ECT-ND*◆ LMX2531LQ2265ETR-ND§◆	11.06	9.48	8.41
PLL+ VCO	All	1	Yes	Sigma-Delta	No	1168-1395, 2336-2790	LMX2531LQ2570ECT-ND*◆ LMX2531LQ2570ETR-ND§◆	11.06	9.48	8.41
Evaluation Kit for LMX25021635							LMX25021635EVAL-ND	225.00/1		
Evaluation Kit for LMX25051321							LMX25051321EVAL-ND	225.00/1		
Evaluation Kit for LMX25120967							LMX25120967EVAL-ND	225.00/1		
Evaluation Kit for LMX25121065							LMX25121065EVAL-ND	225.00/1		
Evaluation Kit for LMX25221635							LMX25221635EVAL-ND	225.00/1		

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NEARSON Antennas

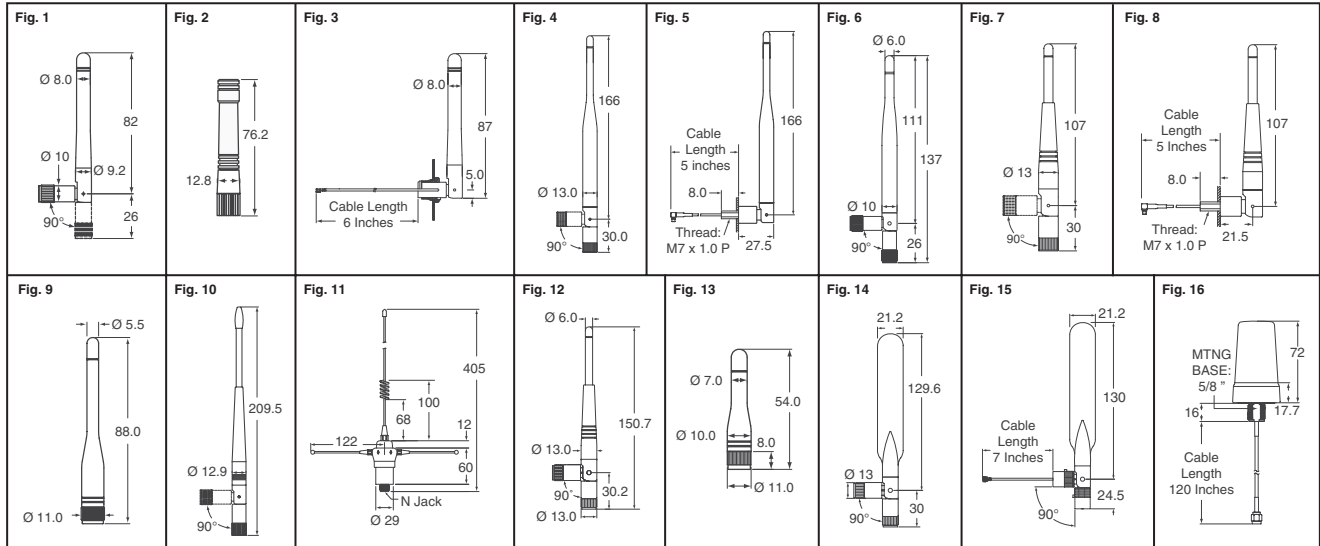


Fig.	Frequency Range (MHz)	Connector Type	Applications	Element Size	Nominal Impedance (Ω)	Digi-Key Part No.	Price Each	Nearson Part No.
1	824 - 896, 1850 - 1990	SMA	AMPS/PCS	1/2 Wave	50	730-1000-ND	18.00	D131AM-AMPS/PCS-S
	2400 - 2500	RP SMA	2.4GHz ISM (Zigbee, WLAN, Bluetooth)	1/2 Wave	50	730-1003-ND	14.85	S131AH-2450S
	2400 - 2500, 4900 - 5350, 5725 - 5850	RP SMA	WLAN/ISM	1/2 Wave	50	730-1013-ND	19.50	T131AH-2.4/4.9/5.X-S
2	310 - 320	SMA	VHF/UHF	1/4 Wave	50	730-1001-ND	16.50	L324AM-315
	433 - 435	SMA	UHF	1/4 Wave	50	730-1002-ND	16.50	L324AM-434
3	2400 - 2500	U.FL	2.4GHz ISM (Zigbee, WLAN, Bluetooth)	1/2 Wave	50	730-1004-ND	17.82	S131CL-6-PX-2450S
4	2400 - 2500	RP SMA	2.4GHz ISM (Zigbee, WLAN, Bluetooth)	1/2 Wave	50	730-1005-ND	12.00	S151AH-2450S
5	2400 - 2500	MMCX	2.4GHz ISM (Zigbee, WLAN, Bluetooth)	1/2 Wave	50	730-1006-ND	24.45	S151FL-5-RMM-2450S
6	902 - 928	RP SMA	900MHz ISM	1/2 Wave	50	730-1007-ND	18.00	S152AH-915S
7	2400 - 2500	RP SMA	2.4GHz ISM (Zigbee, WLAN, Bluetooth)	1/2 Wave	50	730-1008-ND	16.50	S181AH-2450S
8	2400 - 2500	MMCX	2.4GHz ISM (Zigbee, WLAN, Bluetooth)	1/2 Wave	50	730-1009-ND	18.75	S181FL-5-RMM-2450S
9	902 - 928	RP SMA	900MHz ISM	1/4 Wave	50	730-1010-ND	15.00	S331AH-915
10	902 - 928	RP SMA	900MHz ISM	1/2 Wave	50	730-1011-ND	24.00	S467AH-915S
11	902 - 928	N Type	900MHz ISM	1/2 Wave	50	730-1012-ND	52.00	SG101N-915
12	2400 - 2500, 4900 - 5350, 5725 - 5850	RP TNC	WLAN/ISM	1/2 Wave	50	730-1014-ND	23.94	T145TR-2.4/4.9/5.X-S
13	860 - 960, 1710 - 1810, 1850 - 1990	SMA	PCS/DCS/GSM	1/4 Wave	50	730-1015-ND	15.00	T321AM-GDP
14	824 - 896, 890 - 960, 1850 - 1990, 1710 - 1880, 1920 - 2170	SMA	AMPS/GSM/PCS/DCS/UMTS	1/2 Wave	50	730-1016-ND	23.85	T6140AM-AGDPU-S
	2400, 4900, 5200, 5800	RP TNC	WLAN/ISM	1/2 Wave	50	730-1018-ND	25.50	T614TR-2.4/4.9/5.X-S
15	2400 - 2500, 5150 - 5850	U.FL	WLAN/ISM	1/2 Wave	50	730-1017-ND	28.26	T614FC-7-PX-2.4/4.9/5.X-S
	824 - 960, 1710 - 2170	RP SMA	AMPS/GSM/PCS/DCS/UMTS	1/2 Wave	50	730-1020-ND	38.00	W765FL-120-AH-AGDP

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