

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	15.51	13.29	11.79	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.	Price Each			National Semiconductor Part No.
	1	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‡	2.33	1.73	1.28
					LMX1600SLBXTR-ND§	2343.75/2,500		
					LMX1600TM-ND	2.23	1.66	1.23
RF/IF Dual	Integer	1,100	500	-197 dBc/Hz	LMX1601SLBXCCT-ND‡	2.73	2.03	1.50
					LMX1601SLBXTR-ND§	2578.13/2,500		
					LMX1601TM-ND◆	1.92	1.43	1.06
					LMX1601TMXCT-ND‡◆	1.92	1.43	1.06
LMX1601TMXTR-ND§◆	1937.50/2,500							
RF/IF Dual	Integer	1,100	1,100	-197 dBc/Hz	LMX1602TM-ND◆	2.02	1.50	1.11
Single	Integer	550	—	-210 dBc/Hz	LMX2306SLBXCCT-ND‡◆	2.50	1.90	1.45
					LMX2306SLBXTR-ND§◆	3125.00/2,500		
					LMX2306TM-ND◆	2.63	2.00	1.53
					LMX2306TMXTR-ND§◆	3281.25/2,500		
Single	Integer	2,500	—	-212 dBc/Hz	LMX2310USLDCXCT-ND‡	3.58	2.72	2.08
LMX2310USLDXTR-ND§	4468.75/2,500							
Single	Integer	2,000	—	-212 dBc/Hz	LMX2311USLDCXCT-ND‡	3.25	2.47	1.89
LMX2311USLDXTR-ND§	4062.50/2,500							
Single	Integer	1,200	—	-212 dBc/Hz	LMX2312USLDCXCT-ND‡	3.10	2.36	1.80
LMX2312USLDXTR-ND§	3875.00/2,500							
Single	Integer	600	—	-212 dBc/Hz	LMX2313USLDCXCT-ND‡◆	3.18	2.42	1.85
LMX2313USLDXTR-ND§◆	3968.75/2,500							
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‡	4.78	3.63	2.77
					LMX2346SLBXTR-ND§	4531.25/2,500		
					LMX2346TM-ND◆	3.58	2.72	2.08
Single	Integer	2,500	—	-217 dBc/Hz	LMX2347SLBXCCT-ND‡	3.53	2.68	2.05
					LMX2347SLBXTR-ND§	4406.25/2,500		
					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◆	4.23	3.22	2.46
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	

◆ RoHS Compliant ‡ Cut Tape § Tape and Reel

Digi-Reel® Most SMT cutdown parts are available on a Digi-Reel®. For Digi-Reel part number, change 1-ND to 6-ND or CT-ND to DKR-ND. See Digi-Key® Services on page 2 for additional information.

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