

LMX2820 Clocking Board REV E1 Bill of Materials

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
IPCB1	1		LMX2820 Clocking Board	Any	Printed Circuit Board	
C1, C2, C3, C4	4	0.1uF	GRM155R71E104KE14D	MuRata	CAP, CERM, 0.1 μ F, 25 V, +/- 10%, X7R, 0402	402
C9	1	12pF	GRM1555C1E120JA01D	MuRata	CAP, CERM, 12 pF, 25 V, +/- 5%, C0G/NP0, 0402	402
C10, C21, C24, C28, C29, C47, C48, C49, C50, C60, C61, C62, C76, C78, C81, C84, C237	17	0.1uF	C1005X7R1E104M050BB	TDK	CAP, CERM, 0.1 μ F, 25 V, +/- 20%, X7R, 0402	402
C17, C45, C57, C95, C101, C119, C182, C185, C189, C226, C229, C265, C288, C294, C304, C308	16	0.1uF	GRM155R71C104KA88D	MuRata	CAP, CERM, 0.1 μ F, 16 V, +/- 10%, X7R, 0402	402
C18, C68, C239, C240, C241, C242, C244, C246, C247, C248, C249, C252, C256, C259, C260	15	0.1uF	C0603C104J3RACTU	Kemet	CAP, CERM, 0.1uF, 25V, +/-5%, X7R, 0603	603
C19, C22, C23	3	100pF	GRM1555C1H101JA01D	MuRata	CAP, CERM, 100 pF, 50 V, +/- 5%, C0G/NP0, 0402	402
C20	1	10uF	293D106X0010B2TE3	Vishay-Sprague	CAP, TA, 10 μ F, 10 V, +/- 20%, 2.5 ohm, SMD	3528-21
C25	1	100pF	04025A101FAT2A	AVX	CAP, CERM, 100 pF, 50 V, +/- 1%, C0G/NP0, 0402	402
C26	1	2200pF	GRM155R71E222KA01D	MuRata	CAP, CERM, 2200 pF, 25 V, +/- 10%, X7R, 0402	402
C27	1	10pF	GRM1555C1H100JA01D	MuRata	CAP, CERM, 10 pF, 50 V, +/- 5%, C0G/NP0, 0402	402
C31, C69	2	10uF	C0805C106K8PACTU	Kemet	CAP, CERM, 10 uF, 10 V, +/- 10%, X5R, 0805	805
C32	1	1uF	C0603X105J8RAC7867	Kemet	CAP, CERM, 1 μ F, 10 V, +/- 5%, X7R, AEC-Q200 Grade 1, 0603	603
C33	1	0.1uF	C0402C104K8RACAUTO	Kemet	CAP, CERM, 0.1 μ F, 10 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0402	402
C36, C41, C63, C64, C179	5	0.1uF	GRM033R60J104KE19D	MuRata	CAP, CERM, 0.1 μ F, 6.3 V, +/- 10%, X5R, 0201	201
C38	1	4.7uF	C1005X5R0J475M050BC	TDK	CAP, CERM, 4.7 μ F, 6.3 V, +/- 20%, X5R, 0402	402
C40, C46, C58, C253, C258, C261, C270, C273, C296, C297, C298, C299, C310, C311	14	0.01uF	GRM155R71E103KA01D	MuRata	CAP, CERM, 0.01 μ F, 25 V, +/- 10%, X7R, 0402	402
C42, C43, C44, C51, C54, C55, C56, C72, C186, C264, C289, C295, C305, C309	14	1uF	C1005X7S1A105K050BC	TDK	CAP, CERM, 1 μ F, 10 V, +/- 10%, X7S, 0402	402
C52	1	3900pF	0201ZD392KAT2A	AVX	CAP, CERM, 3900 pF, 10 V, +/- 10%, X5R, 0201	201
C53	1	47pF	GRM0335C1E470JA01D	MuRata	CAP, CERM, 47 pF, 25 V, +/- 5%, C0G/NP0, 0201	201
C59	1	0.68uF	C1005X5R1A684K050BB	TDK	CAP, CERM, 0.68 μ F, 10 V, +/- 10%, X5R, 0402	402

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C65, C66, C67, C70	4	0.1uF	C1005X7R1E104M050BB	TDK	CAP, CERM, 0.1 µF, 25 V,+/- 20%, X7R, 0402	402
C71	1	0.1uF	C0603C104J3RACTU	Kemet	CAP, CERM, 0.1 µF, 25 V,+/- 5%, X7R, 0603	603
C73, C74, C75	3	33pF	C0603C330J5GACTU	Kemet	CAP, CERM, 33pF, 50V, +/-5%, C0G/NP0, 0603	603
C77, C85, C86, C87, C88	5	1uF	GRM155R6YA105KE11D	MuRata	CAP, CERM, 1 uF, 35 V, +/- 10%, X5R, 0402	402
C79, C80, C93, C94	4	0.01uF	LLL185R71E103MA01L	MuRata	CAP, CERM, 0.01 µF, 25 V, +/- 20%, X7R, 0306	306
C82, C83, C91, C92	4	2200pF	LLL185R71H222MA01L	MuRata	CAP, CERM, 2200 pF, 50 V, +/- 20%, X7R, 0306	306
C89, C90	2	0.3pF	500R07S0R3BV4T	Johanson Technology	CAP, CERM, 0.3 pF, 50 V, +/- 30%, C0G/NP0, 0402	402
C96, C102, C104, C113, C138, C144, C147, C155	8	0.1uF	GRM155R71C104KA88D	MuRata	CAP, CERM, 0.1 µF, 16 V,+/- 10%, X7R, 0402	402
C99, C105, C106, C108, C112, C117, C121, C122, C124, C127, C128, C141, C145, C149, C150, C152, C159, C163, C164, C166, C169, C170, C217, C223	24	1uF	GRM155R61E105KA12D	MuRata	CAP, CERM, 1 µF, 25 V,+/- 10%, X5R, 0402	402
C100, C103, C107, C109, C111, C118, C142, C146, C148, C151, C153, C160	12	0.1uF	GRM033R61C104KE84D	MuRata	CAP, CERM, 0.1 µF, 16 V,+/- 10%, X5R, 0201	201
C114, C156	2	10uF	C0805C106K8PACTU	Kemet	CAP, CERM, 10uF, 10V, +/-10%, X5R, 0805	805
C115, C135, C136, C157, C177, C178	6	0.1uF	0603YC104JAT2A	AVX	CAP, CERM, 0.1uF, 16V, +/-5%, X7R, 0603	603
C123, C165	2	10uF	C1608X5R1A106M080AC	TDK	CAP, CERM, 10 µF, 10 V,+/- 20%, X5R, 0603	603
C125, C167	2	0.47uF	CGA3E3X7R1E474K080AB	TDK	CAP, CERM, 0.47 µF, 25 V,+/- 10%, X7R, AEC-Q200 Grade 1, 0603	603
C129, C171	2	2200pF	8.85012E+11	Wurth Elektronik	CAP, CERM, 2200 pF, 16 V,+/- 10%, X7R, 0603	603
C131, C173	2	0.068uF	8.85012E+11	Wurth Elektronik	CAP, CERM, 0.068 µF, 25 V,+/- 10%, X7R, 0603	603
C133, C175, C224, C227	4	470pF	8.85012E+11	Wurth Elektronik	CAP, CERM, 470 pF, 10 V,+/- 5%, C0G/NP0, 0603	603
C180, C181, C190, C191, C192	5	10uF	GRM21BR61C106KE15L	MuRata	CAP, CERM, 10 uF, 16 V, +/- 10%, X5R, 0805	805
C183, C286, C292, C302, C306	5	33uF	C2012X5R1A336M125AC	TDK	CAP, CERM, 33 µF, 10 V, +/- 20%, X5R, 0805	805
C184, C238, C243, C245, C263, C287, C293, C303, C307	9	10uF	GRM188R61A106ME69D	MuRata	CAP, CERM, 10 µF, 10 V, +/- 20%, X5R, 0603	603
C187, C188	2	0.01uF	GRM188R71H103KA01D	MuRata	CAP, CERM, 0.01 uF, 50 V, +/- 10%, X7R, 0603	603
C193	1	0.1uF	06033D104KAT2A	AVX	CAP, CERM, 0.1 uF, 25 V, +/- 10%, X5R, 0603	603
C194	1	1uF	08053D105KAT2A	AVX	CAP, CERM, 1 uF, 25 V, +/- 10%, X5R, 0805	805

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C195	1	0.01uF	GRM188R71E103KA01D	MuRata	CAP, CERM, 0.01 uF, 25 V, +/- 10%, X7R, 0603	603
C196, C197	2	47uF	GRM21BR61A476ME15	MuRata	CAP, CERM, 47 uF, 10 V, +/- 20%, X5R, 0805	805
C200, C201, C202, C205, C206, C207	6	10uF	GRM188R61A106ME69D	MuRata	CAP, CERM, 10 uF, 10 V, +/- 20%, X5R, 0603	603
C203, C204, C208, C209	4	0.01uF	GRM188R71C103KA01D	MuRata	CAP, CERM, 0.01 uF, 16 V, +/- 10%, X7R, 0603	603
C210, C219	2	10uF	GRM188R61E106MA73D	MuRata	CAP, CERM, 10 uF, 25 V, +/- 20%, X5R, 0603	603
C211, C220	2	0.1uF	C0603C104J5RACTU	Kemet	CAP, CERM, 0.1 uF, 50 V, +/- 5%, X7R, 0603	603
C212, C221	2	1uF	GCM188R71E105KA64D	MuRata	CAP, CERM, 1 uF, 25 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0603	603
C213, C222	2	47uF	C3216X5R1E476M160AC	TDK	CAP, CERM, 47 uF, 25 V, +/- 20%, X5R, 1206	1206
C214	1	33uF	C2012X5R1A336M125AC	TDK	CAP, CERM, 33 uF, 10 V, +/- 20%, X5R, 0805	805
C215	1	10uF	GRM188R61C106MAALD	MuRata	CAP, CERM, 10 uF, 16 V, +/- 20%, X5R, 0603	603
C216	1	0.01uF	GRM188R71C103KA01D	MuRata	CAP, CERM, 0.01 uF, 16 V, +/- 10%, X7R, 0603	603
C218	1	0.1uF	CL10B104K08NNNC	Samsung Electro-Mechanics	CAP, CERM, 0.1 uF, 16 V, +/- 10%, X7R, 0603	603
C225, C228	2	18pF	GRM1885C1H180JA01D	MuRata	CAP, CERM, 18 pF, 50 V, +/- 5%, C0G/NP0, 0603	603
C231, C232, C271, C272, C274, C275	6		C2012X7S1E106K125AC	TDK	10uF ±10% 25V Ceramic Capacitor X7S 0805 (2012 Metric)	805
C233, C276, C277	3	2200pF	GRM155R71H222KA01D	MuRata	CAP, CERM, 2200 pF, 50 V, +/- 10%, X7R, 0402	402
C234, C235, C236, C278, C279, C280, C282, C283, C284	9	22uF	C2012X7S1A226M125AC	TDK	CAP, CERM, 22 uF, 10 V, +/- 20%, X7S, 0805	805
C250, C251	2	27pF	GRM1885C2A270JA01D	MuRata	CAP, CERM, 27 pF, 100 V, +/- 5%, C0G/NP0, 0603	603
C254, C257	2	1uF	C1608X7R1C105K080AC	TDK	CAP, CERM, 1 uF, 16 V, +/- 10%, X7R, 0603	603
C255	1	100uF	GRM32ER61A107ME20L	MuRata	CAP, CERM, 100 uF, 10 V, +/- 20%, X5R, 1210	1210
C266, C267	2	0.1uF	GRM155R61A104KA01D	MuRata	CAP, CERM, 0.1 uF, 10 V, +/- 10%, X5R, 0402	402
C268	1	12pF	GRM1555C1H120JA01D	MuRata	CAP, CERM, 12 pF, 50 V, +/- 5%, C0G/NP0, 0402	402
C269, C290, C291	3	0.47uF	C1608X7R1E474K080AE	TDK	CAP, CERM, 0.47 uF, 25 V, +/- 10%, X7R, 0603	603
C300, C301	2	47pF	CGA3E2C0G1H470J080AA	TDK	CAP, CERM, 47 pF, 50 V, +/- 5%, C0G/NP0, AEC-Q200 Grade 1, 0603	603
C312, C313, C314, C315	4	0.1uF	C1005X5R0J104K050BA	TDK	CAP, CERM, 0.1 uF, 6.3 V, +/- 10%, X5R, 0402	402
C317	1	10pF	C0402C100C8GACTU	Kemet	CAP, CERM, 10 pF, 10 V, +/- 2.5%, C0G/NP0, 0402	402
CE_TP1, CE_TP2, TP1, TP2, TP3, Vcc_TP1, Vcc_TP2, Vtune_TP1, Vtune_TP2	9	White	5007	Keystone	Test Point, Compact, White, TH	White Compact Testpoint
D1	1	Green	LTST-C190GKT	Lite-On	LED, Green, SMD	1.6x0.8x0.8mm
D2, D3, D4, D5, D6, D7, D8, D12, D13, D14, D15, D18, D19, D20, D21, D22	16	Green	LTST-C191TGKT	Lite-On	LED, Green, SMD	LED_0603
D9	1	Red	LTST-C170KRKT	Lite-On	LED, Red, SMD	Red 0805 LED
D10	1	13V	SMBJ13CA	Littelfuse	Diode, TVS, Bi, 13 V, SMB	SMB
D11	1	30V	MBR130T1G	ON Semiconductor	Diode, Schottky, 30 V, 1 A, SOD-123	SOD-123
FB4, FB5, FB6	3		BLE18PS080BH1	Murata	8.5 Ohms @ 100MHz 1 Power Line Ferrite Bead 0603 5A 0.004Ohm Resistance	603

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
FL1, FL2	2		BFCN-8650+	Mini-Circuits	Signal Conditioning BANDPASS FLTR / SURF MT / RoHS	SMT_FL_3MM2_1MM6
H1, H2, H3, H4	4		TCBS-6-01	Richco Plastics	HEX STANDOFF SPACER, 9.53 mm	7.9x9.5 mm
J1, J13, J14, J15, J16, J17, J18, J19, J20, J32, J33, J34, J35, J36, J37, J41, J42, OSCinM1, OSCinM2, OSCinP1, OSCinP2, SYSREFM1, SYSREFM2, SYSREFP1, SYSREFP2	25		142-0701-201	Emerson Network Power	Connector, TH, SMA	SMA
J6, J9, J12, J21, J24	5		TSW-102-07-G-S	Samtec	Header, 100mil, 2x1, Gold, TH	2x1 Header
J7, J8	2		QSH-030-01-L-D-A	Samtec	Receptacle, 0.5 mm, 30x2, Gold, TH	Receptacle, 0.5 mm, 30x2, TH
J10	1		142-0701-851	Emerson Network Power Contr	Connector, SMT, End launch SMA 50 ohm	SMA
J11	1		PBC03SAAN	Sullins Connector Solutions	Header, 100mil, 3x1, Gold, TH	PBC03SAAN
J22	1		32K101-400L5	Rosenberger	SMA, 50 Ohm, Gold, TH	SMA, TH
J23	1		RAPC722X	Switchcraft	Power Jack, mini, 2.1mm OD, R/A, TH	Jack, 14.5x11x9mm
J28	1		22284033	Molex	Header, 2.54mm, 3x1, Tin, TH	Header, 2.54mm, 3x1, TH
J29	1		6.51305E+11		WR-COM Mini USB 2.0 Type AB SMT Horizontal 5 Contacts	
J30	1		52601-S10-8LF	FCI	Header (shrouded), 100mil, 5x2, Gold, SMT	SMT Header
J31	1		TSW-104-07-G-D	Samtec	Header, 100mil, 4x2, Gold, TH	4x2 Header
J38, J39, J40	3		800-10-004-10-001000	Mill-Max	Header, 100mil, 4x1, TH	Header, 4x1, 100mil, TH
L1, L2	2	18nH	LQG15HS18NJ02D	MuRata	Inductor, Multilayer, Air Core, 18 nH, 0.3 A, 0.36 ohm, SMD	0402 polarized
L4, L20, L28, L39, L41, L42, L44, L45, L46, L47, L50, L51, L52, L53	14	120 ohm	BLM31PG121SN1L	MuRata	Ferrite Bead, 120 ohm @ 100 MHz, 3.5 A, 1206	1206
L5	1	120 ohm	BLM18SG121TN1D	MuRata	Ferrite Bead, 120 ohm @ 100 MHz, 3 A, 0603	603
L6, L7, L9, L10, L11, L12, L13, L14, L15, L49	10	120 ohm	BLM18AG121SN1D	MuRata	Ferrite Bead, 120 ohm @ 100 MHz, 0.5 A, 0603	603
L16, L18, L22, L24	4	120 ohm	7427927311	Würth Elektronik	Ferrite Bead, 120 ohm @ 100 MHz, 1.2 A, 0402	402
L30, L31, L32	3		XGL4030-472MEC	Coilcraft	Inductor Power Shielded Wirewound 4.7uH 20% 1MHz Composite 6.6A 31.5mOhm DCR Automotive T/R	SMD2
L35	1	50 ohm	BLM31SN500SZ1L	MuRata	Ferrite Bead, 50 ohm @ 100 MHz, 12 A, 1206	1206
L48	1	26 ohm	BLM18SG260TN1D	MuRata	Ferrite Bead, 26 ohm @ 100 MHz, 6 A, 0603	603
LBL1	1		THT-14-423-10	Brady	Thermal Transfer Printable Labels, 0.650" W x 0.200" H - 10,000 per roll	PCB Label 0.650"H x 0.200"W
Q1, Q2	2	40 V	BSR17A	ON Semiconductor	TRANS NPN 40V 0.2A SOT-23	SOT-23

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R1, R2, R3, R4, R77, R78, R83, R86, R89, R90, R96, R97, R104, R108, R111, R112, R173, R174, R187, R188	20	120	CRCW0402120RJNED	Vishay-Dale	RES, 120, 5%, 0.063 W, 0402	402
R5, R6, R23, R24, R26, R30, R31, R32, R47, R60, R73, R76, R84, R87, R93, R95, R105, R109, R114, R117, R118, R119, R125, R126, R127, R128, R130, R132, R134, R136, R139, R140, R145, R164, R168, R169, R177, R179, R180, R183, R186, R203, R224, R236, R242, R243, R248, R250, R252, R270, R282, R288, R291, R294, R296, R299, R313, R314, R316, R318, R320, R321, R365, R372, R373, R393, R394, R408, R410, R411,	99	0	CRCW04020000Z0ED	Vishay-Dale	RES, 0, 5%, 0.063 W, 0402	402
R29, R71, R72, R74	4	12k	CRCW040212K0JNED	Vishay-Dale	RES, 12 k, 5%, 0.063 W, 0402	402
R33, R245, R255, R302, R309, R325, R332, R370, R399, R400	10	1.00k	CRCW06031K00FKEA	Vishay-Dale	RES, 1.00 k, 1%, 0.1 W, 0603	603
R34	1	10.0k	CRCW060310K0FKEA	Vishay-Dale	RES, 10.0 k, 1%, 0.1 W, 0603	603
R35	1	3.24k	CRCW06033K24FKEA	Vishay-Dale	RES, 3.24 k, 1%, 0.1 W, 0603	603
R36, R193	2	1.00Meg	CRCW06031M00FKEA	Vishay-Dale	RES, 1.00 M, 1%, 0.1 W, 0603	603

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R37, R181, R184, R212, R247, R258, R293, R304, R343, R344, R371, R384, R469, R471, R472, R474	16	0	CRCW06030000Z0EA	Vishay-Dale	RES, 0, 5%, 0.1 W, 0603	603
R38, R312	2	11.8k	CRCW060311K8FKEA	Vishay-Dale	RES, 11.8 k, 1%, 0.1 W, 0603	603
R39	1	487	CRCW0603487RFKEA	Vishay-Dale	RES, 487, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	603
R41, R42, R43, R175, R182, R194, R198	7	10.0k	ERJ-2RKF1002X	Panasonic	RES, 10.0 k, 1%, 0.1 W, 0402	402
R44	1	750	CRCW0603750RJNEA	Vishay-Dale	RES, 750, 5%, 0.1 W, 0603	603
R45, R46	2	1.3k	RC0603JR-071K3L	Yageo America	RES, 1.3 k, 5%, 0.1 W, 0603	603
R49, R446	2	100	CRCW0402100RFKED	Vishay-Dale	RES, 100, 1%, 0.063 W, 0402	402
R51, R54, R56, R58, R61, R62, R65, R67, R69	9	0	RC0603JR-070RL	Yageo	RES, 0, 5%, 0.1 W, 0603	603
R79, R81, R99, R101	4	0	CRCW04020000Z0ED	Vishay-Dale	RES, 0, 5%, 0.063 W, AEC-Q200 Grade 0, 0402	402
R91	1	620	RC0201FR-07620RL	Yageo America	RES, 620, 1%, 0.05 W, 0201	201
R98	1	39.0k	RC0201FR-0739KL	Yageo America	RES, 39.0 k, 1%, 0.05 W, 0201	201
R103, R115, R189, R190, R444, R448	6	0	ERJ-1GN0R00C	Panasonic	RES, 0, 5%, 0.05 W, AEC-Q200 Grade 0, 0201	201
R107, R116, R443, R445, R447, R449	6	51	RC0201JR-0751RL	Yageo America	RES, 51, 5%, 0.05 W, 0201	201
R121, R123, R141, R143	4	20	CRCW040220R0FKED	Vishay-Dale	RES, 20.0, 1%, 0.063 W, 0402	402
R129	1	100	RC0201FR-07100RL	Yageo America	RES, 100, 1%, 0.05 W, 0201	201
R133	1	33k	CRCW040233K0JNED	Vishay-Dale	RES, 33 k, 5%, 0.063 W, 0402	402
R137, R308	2	100k	CRCW0402100KFKED	Vishay-Dale	RES, 100 k, 1%, 0.063 W, 0402	402
R148, R159, R191, R192, R470, R473	6	49.9	CRCW040249R9FKED	Vishay-Dale	RES, 49.9, 1%, 0.063 W, 0402	402
R149, R150, R151, R152, R153, R154, R155, R156, R157, R158, R162, R163	12	240	CRCW0402240RJNED	Vishay-Dale	RES, 240, 5%, 0.063 W, 0402	402
R171	1	18	CRCW040218R0JNED	Vishay-Dale	RES, 18, 5%, 0.063 W, 0402	402
R176, R178	2	270	CRCW0402270RJNED	Vishay-Dale	RES, 270, 5%, 0.063 W, 0402	402
R195	1	3.74k	CRCW06033K74FKEA	Vishay-Dale	RES, 3.74 k, 1%, 0.1 W, 0603	603
R196, R397	2	2.00k	CRCW06032K00FKEA	Vishay-Dale	RES, 2.00 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	603
R199, R206	2	200	CRCW0402200RFKED	Vishay-Dale	RES, 200, 1%, 0.063 W, 0402	402
R201, R204	2	12.1	CRCW040212R1FKED	Vishay-Dale	RES, 12.1, 1%, 0.063 W, 0402	402
R202, R205	2	40.2	CRCW040240R2FKED	Vishay-Dale	RES, 40.2, 1%, 0.063 W, 0402	402
R207	1	60.4	CRCW040260R4FKED	Vishay-Dale	RES, 60.4, 1%, 0.063 W, 0402	402
R208	1	1.1k	CRCW04021K10JNED	Vishay-Dale	RES, 1.1 k, 5%, 0.063 W, 0402	402
R209, R210, R211, R213	4	750	CRCW0603750RFKEA	Vishay-Dale	RES, 750, 1%, 0.1 W, 0603	603

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R219, R220, R221, R222, R265, R266, R267, R268, R376, R465, R466, R467, R468	13	0	CRCW06030000Z0EA	Vishay-Dale	RES, 0 ohm, 5%, 0.1W, 0603	603
R229, R275	2	18.2	CRCW060318R2FKEA	Vishay-Dale	RES, 18.2, 1%, 0.1 W, 0603	603
R231, R277, R323, R324	4	68.1	CRCW060368R1FKEA	Vishay-Dale	RES, 68.1, 1%, 0.1 W, 0603	603
R234, R235, R280, R281	4	10.0k	CRCW040210K0DHEDP	Vishay-Dale	RES, 10.0 k, 0.5%, 0.063 W, 0402	402
R238, R285	2	330	RC0603JR-07330RL	Yageo America	RES, 330 ohm, 5%, 0.1W, 0603	603
R240, R287	2	100k	CRCW0603100KFKEA	Vishay-Dale	RES, 100 k, 1%, 0.1 W, 0603	603
R241	1	33.2k	RC0603FR-0733K2L	Yageo America	RES, 33.2 k, 1%, 0.1 W, 0603	603
R256, R301	2	10.7k	CRCW060310K7FKEA	Vishay-Dale	RES, 10.7 k, 1%, 0.1 W, 0603	603
R271, R453	2	40.2k	CRCW040240K2FKED	Vishay-Dale	RES, 40.2 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	402
R290	1	56.2k	CRCW060356K2FKEA	Vishay-Dale	RES, 56.2 k, 1%, 0.1 W, 0603	603
R311	1	25.5k	CRCW060325K5FKEA	Vishay-Dale	RES, 25.5 k, 1%, 0.1 W, 0603	603
R326, R327, R333, R334, R335, R336	6	1.00Meg	RC0603FR-071ML	Yageo America	RES, 1.00 M, 1%, 0.1 W, 0603	603
R328, R337, R338	3	10.0k	RC0603FR-0710KL	Yageo America	RES, 10.0 k, 1%, 0.1 W, 0603	603
R329	1	18k	CRCW060318K0JNEA	Vishay-Dale	RES, 18 k, 5%, 0.1 W, AEC-Q200 Grade 0, 0603	603
R330, R395, R396	3	64.9k	RC0603FR-0764K9L	Yageo America	RES, 64.9 k, 1%, 0.1 W, 0603	603
R331, R398	2	4.87k	RC0603FR-074K87L	Yageo America	RES, 4.87 k, 1%, 0.1 W, 0603	603
R339	1	12k	CRCW060312K0JNEA	Vishay-Dale	RES, 12 k, 5%, 0.1 W, AEC-Q200 Grade 0, 0603	603
R340	1	15.4k	CRCW060315K4FKEA	Vishay-Dale	RES, 15.4 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	603
R345	1	2.0k	CRCW06032K00JNEA	Vishay-Dale	RES, 2.0 k, 5%, 0.1 W, 0603	603
R346, R347, R348, R349, R350, R351, R374, R388, R389, R390, R392	11	10k	CRCW060310K0JNEA	Vishay-Dale	RES, 10 k, 5%, 0.1 W, 0603	603
R357, R358, R359, R360, R361, R362, R367	7	100	CRCW0603100RFKEA	Vishay-Dale	RES, 100, 1%, 0.1 W, 0603	603
R366	1	39k	CRCW060339K0JNEA	Vishay-Dale	RES, 39 k, 5%, 0.1 W, 0603	603
R369	1	12k	CRCW060312K0JNEA	Vishay-Dale	RES, 12k ohm, 5%, 0.1W, 0603	603
R378, R380	2	10	CRCW060310R0FKEAHP	Vishay-Dale	RES, 10.0, 1%, 0.25 W, 0603	603
R382, R383, R385, R386, R387	5	33	CRCW060333R0JNEA	Vishay-Dale	RES, 33, 5%, 0.1 W, 0603	603
R401, R405	2	33	CRCW060333R0JNEA	Vishay-Dale	RES, 33, 5%, 0.1 W, AEC-Q200 Grade 0, 0603	603
R412, R454	2	10.0k	CRCW040210K0FKED	Vishay-Dale	RES, 10.0 k, 1%, 0.063 W, 0402	402
R479, R480, R485, R486	4	1.00k	CRCW04021K00FKED	Vishay-Dale	RES, 1.00 k, 1%, 0.063 W, 0402	402

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
RFoutAM1, RFoutAM2, RFoutAP1, RFoutAP2, RFoutBM1, RFoutBM2, RFoutBP1, RFoutBP2	8		142-0771-831	Johnson	JACK, SMA, 50 Ohm, Gold, Edge Mount	JACK, SMA, 50 Ohm, Gold, Edge Mount
S1	1		L101011MS02Q	C&K Components	SWITCH SLIDE SPST 4A PCB, TH	Slide Switch, TH, SPST
SYNC, TP10, TP26, TP27, TP28	5		5003	Keystone	Test Point, Miniature, Orange, TH	Orange Miniature Testpoint
TP4, TP5, TP6, TP12, TP13, TP14, TP15, TP16, TP17, TP18, TP19, TP20, TP21, TP22, TP23, TP24, TP25, VCCCORE1	18		5000	Keystone	Test Point, Miniature, Red, TH	Red Miniature Testpoint
TP7, TP8, TP9	3		5002	Keystone	Test Point, Miniature, White, TH	White Miniature Testpoint
TP11	1		5001	Keystone	Test Point, Miniature, Black, TH	Black Miniature Testpoint
U2, U4	2		NBB-312-T1	RF Micro Devices	Cascadable Broadband GaAs MMIC Amplifier DC to 12GHz, MPGA-9	9-MPGA
U5	1		TPS7A5301RPST	Texas Instruments	3-A, High-Accuracy (0.75%), Low-Noise (4.4µVRMS), LDO Voltage Regulator, RPS0012A (VQFN-12)	RPS0012A
U6	1		TPS259541DSGR	Texas Instruments	12V eFuse with Over Voltage Protection, DSG0008A (WSO-8)	DSG0008A
U8	1		TPS7A8701RTJR	Texas Instruments	Dual, 500mA, Low Noise (3.8-uVRMS), LDO Voltage Regulator, RTJ0020D (WQFN-20)	RTJ0020D
U9	1		TPS62913RPUT	Texas Instruments	3A Low Noise and Low Ripple buck converter, RPU0010A (VQFN-10)	RPU0010A
U10, U33, U34	3		TMUX1574PWR	Texas Instruments	Low-capacitance, 2:1 (SPDT) 4-channel, powered-off protection switch with 1.8 V logic, PW0016A (TSSOP-16)	PW0016A
U11	1		SN74LVC1G08DCKR	Texas Instruments	Single 2-Input Positive-AND Gate, DCK0005A (SOT-5)	DCK0005A
U12	1		LM95233CISD/NOPB	Texas Instruments	+/-2degC Dual Remote and Local Temperature Sensor with TruTherm Technology and SMBus Interface, NHL0014B (WSO-14)	NHL0014B
U13	1		LMK1C1104PW	Texas Instruments	3.3-V and 2.5-V LVCMOS High-Performance Clock Buffer Family, PW0008A (TSSOP-8)	PW0008A
U14	1		LMK61E2-SIAT	Texas Instruments	Ultra-Low Jitter Programmable Oscillator with Internal EEPROM, SIA0008B	SIA0008B
U15	1		LMK04832NKDT	Texas Instruments	Ultra Low-Noise JESD204B Compliant Clock Jitter Cleaner With Dual Loop PLLs, NKD0064A (WQFN-64)	NKD0064A
U16	1		NB7V33MMNTXG	ON Semiconductor	1.8V / 2.5V, 10GHz +4 Clock Divider with CML Outputs, QFN-16	3x3mm 16-QFN
U17	1		LMH5401IRMSR	Texas Instruments	8GHz Ultra Wideband Fully Differential Amplifier, RMS0014A (UQFN-14)	RMS0014A
U18, U20	2		LMX2820	Texas Instruments	RF synthesizer with integrated PLL and VCO	VQFNP48
U22, U23	2		TPS62912RPUT	Texas Instruments	2A Low Noise and Low Ripple buck converter, RPU0010A (VQFN-10)	RPU0010A
U24	1		TPS7A9001DSKR	Texas Instruments	500mA High-Accuracy Low-Noise Low-Dropout (LDO) Voltage Regulator, DSK0010A (WSO-10)	DSK0010A
U25, U26	2		TPS7A4700RGWR	Texas Instruments	36-V, 1-A, 4.17-µVRMS, RF LDO Voltage Regulator, RGW0020A (VQFN-20)	RGW0020A
U27, U28	2		OPA211IDGKT	Texas Instruments	1.1nV/rtHz Noise, Low-Power, Precision Operational Amplifier, DKG0008A (VSSOP-8)	DKG0008A

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
U29	1		FT232HL-REEL	FTDI	Single Channel Hi-Speed USB to Multipurpose UART/FIFO IC, LQFP-48	QFP, 48-Leads, Body 7x7mm, Pitch 0.5mm
U30	1		93LC56BT-I/OT	Microchip	2K Microwire Compatible Serial EEPROM, SOT-23-6	SOT-23-6
U31	1		SN74LVC2G53DCUT	Texas Instruments	Single Pole, Double-Throw (SPDT) Analog Switch or 2:1 Analog Multiplexer/Demultiplexer, DCU0008A (VSSOP-8)	DCU0008A
U32	1		TLV70233DBVT	Texas Instruments	Single Output LDO, 300 mA, Fixed 3.3 V Output, 2 to 5.5 V Input, with Low IQ, 5-pin SOT-23 (DBV), -40 to 125 degC, Green (RoHS & no Sb/Br)	DBV0005A
U37	1		LMK00334RTVR	Texas Instruments	LMK00334 4-Output PCIe Gen1/Gen2/Gen3/Gen4 Clock Buffer/Level Translator, RTV0032A (WQFN-32)	RTV0032A
Y1	1		CVHD-950-122.880	Crystek Corporation	VCXO, CMOS 122.880 MHz, 3.3V, SMD	CVHD-950-4
Y2	1		ABM3-12.000MHZ-B2-T	Abrakon Corporation	Crystal, 12Mhz, 18pF, SMD	ABM3
C5, C6	0	1uF	GRM155R6YA105KE11D	MuRata	CAP, CERM, 1 µF, 35 V, +/- 10%, X5R, 0402	402
C7, C8	0	0.01uF	GRM155R71E103KA01D	MuRata	CAP, CERM, 0.01 µF, 25 V, +/- 10%, X7R, 0402	402
C11, C12	0	10pF	GRM1555C1H100JA01D	MuRata	CAP, CERM, 10 pF, 50 V, +/- 5%, C0G/NP0, 0402	402
C13, C14, C15, C16, C35	0	0.1uF	C1005X7R1E104M050BB	TDK	CAP, CERM, 0.1 µF, 25 V, +/- 20%, X7R, 0402	402
C30, C34, C37, C39	0	5pF	GRM1885C2A5R0CA01D	MuRata	CAP, CERM, 5 pF, 100 V, +/- 5%, C0G/NP0, 0603	603
C97, C110, C132, C139, C154, C174	0	0.01uF	520L103KT16T	AT Ceramics	CAP, CERM, 0.01 µF, 16 V, +/- 10%, X7R, 0402	402
C137	0	0.1uF	GRM033R60J104KE19D	MuRata	CAP, CERM, 0.1 µF, 6.3 V, +/- 10%, X5R, 0201	201
C198, C199, C230, C262	0	0.1uF	GRM155R71E104KE14D	MuRata	CAP, CERM, 0.1 µF, 25 V, +/- 10%, X7R, 0402	402
C316	0	0.1uF	C1005X5R0J104K050BA	TDK	CAP, CERM, 0.1 µF, 6.3 V, +/- 10%, X5R, 0402	402
D16, D17	0	24V	PGB1010603MR	Littelfuse	PulseGuard ESD Suppressor, 24VDC, SMT	0603 TVS Diode
FB1, FB3	0		BLE18PS080BH1	Murata	8.5 Ohms @ 100MHz 1 Power Line Ferrite Bead 0603 5A 0.004Ohm Resistance	603
FID1, FID2, FID3, FID4, FID5, FID6	0		N/A	N/A	Fiducial mark. There is nothing to buy or mount.	Fiducial
FL3, FL4	0		LFCN-2500+	Mini-Circuits	LTCC Low Pass Filter, DC - 2500 MHz, 50Ω, Surface Mount	SMT_3MM2_1MM6
J2, J3, J4, J25, J26, J27	0		32K101-400L5	Rosenberger	SMA, 50 Ohm, Gold, TH	SMA, TH
J5	0		142-0771-831	Johnson	JACK, SMA, 50 Ohm, Gold, Edge Mount	JACK, SMA, 50 Ohm, Gold, Edge Mount
L3, L29, L43	0	120 ohm	BLM31PG121SN1L	MuRata	Ferrite Bead, 120 ohm @ 100 MHz, 3.5 A, 1206	1206
L8, L17, L19, L21, L23, L25, L27, L36	0	18nH	LQG15HS18NJ02D	MuRata	Inductor, Multilayer, Air Core, 18 nH, 0.3 A, 0.36 ohm, SMD	0402 polarized
MD1, MD2	0		DRO9000A	Z-Communications		SMT_VCO_0IN91_0I N91
R7, R9, R11, R13, R197, R200	0	18	CRCW040218R0JNED	Vishay-Dale	RES, 18, 5%, 0.063 W, 0402	402

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
R8, R10, R15, R16, R17, R18, R19, R20, R21, R22, R25, R27, R28, R59, R75, R92, R94, R113, R120, R122, R124, R142, R144, R146, R161, R165, R167, R170, R172, R185, R214, R215, R217, R225, R227, R230, R233, R237, R239, R249, R251, R254, R260, R261, R263, R273, R276, R279, R283, R284, R286, R297, R300, R306, R307, R310, R315, R317, R319, R322, R341, R342, R363, R364, R377, R402, R404, R406, R409, R415,	0	0	CRCW04020000Z0ED	Vishay-Dale	RES, 0, 5%, 0.063 W, 0402	402
R12, R14, R451, R452	0	270	CRCW0402270RJNED	Vishay-Dale	RES, 270, 5%, 0.063 W, 0402	402
R40, R135, R138	0	0	ERJ-1GN0R00C	Panasonic	RES, 0, 5%, 0.05 W, AEC-Q200 Grade 0, 0201	201
R48	0	82	RC0603FR-0782RL	Yageo America	RES, 82.0, 1%, 0.1 W, 0603	603
R50, R52, R53, R55, R63, R66, R68, R70	0	100	CRCW0603100RFKEA	Vishay-Dale	RES, 100, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	603
R57, R64	0	100	CRCW0402100RFKED	Vishay-Dale	RES, 100, 1%, 0.063 W, 0402	402
R80, R82, R85, R88, R100, R102, R106, R110	0	0	CRCW04020000Z0ED	Vishay-Dale	RES, 0, 5%, 0.063 W, AEC-Q200 Grade 0, 0402	402
R131, R166	0	49.9	CRCW020149R9FKED	Vishay-Dale	RES, 49.9, 1%, 0.05 W, 0201	201
R147	0	220	CRCW0402220RJNED	Vishay-Dale	RES, 220, 5%, 0.063 W, 0402	402
R160	0	240	CRCW0402240RJNED	Vishay-Dale	RES, 240, 5%, 0.063 W, 0402	402
R216, R218, R223, R226, R228, R232, R262, R264, R269, R272, R274, R278	0	50	FC0402E50R0BST1	Vishay-Dale	RES, 50, 0.1%, 0.05 W, 0402	402
R244, R259, R289, R305	0	51	CRCW060351R0JNEA	Vishay-Dale	RES, 51, 5%, 0.1 W, 0603	603

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
R246, R257, R292, R303, R379, R459, R460	0	0	CRCW06030000Z0EA	Vishay-Dale	RES, 0, 5%, 0.1 W, 0603	603
R253, R298, R352, R353, R354, R355, R356, R368, R375	0	100	CRCW0603100RFKEA	Vishay-Dale	RES, 100, 1%, 0.1 W, 0603	603
R295, R419	0	16.9	CRCW040216R9FKED	Vishay-Dale	RES, 16.9, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	402
R381, R391	0	33	CRCW060333R0JNEA	Vishay-Dale	RES, 33, 5%, 0.1 W, 0603	603
R403, R407	0	18.2	CRCW060318R2FKEA	Vishay-Dale	RES, 18.2, 1%, 0.1 W, 0603	603
R450	0	49.9	CRCW040249R9FKED	Vishay-Dale	RES, 49.9, 1%, 0.063 W, 0402	402
R461, R462	0	2.43k	CRCW06032K43FKEA	Vishay-Dale	RES, 2.43 k, 1%, 0.1 W, 0603	603
R481, R482, R483, R484	0	120	CRCW0402120RJNED	Vishay-Dale	RES, 120, 5%, 0.063 W, 0402	402
U1, U7	0		SIM-153+	Mini-Circuits	CERAMIC Surface Mount Frequency Mixer WIDE BAND Level 7 (LO Power +7dBm) 3400 to 15000MHz	SMT_5MM08_4MM57
U3	0		EP2RKU+	Mini-Circuits	EP2RKU+ 2 Ways MMIC Power Splitter, DC - 18000 MHz, 50Ω	QFN32
U35, U36	0		NBB-312-T1	RF Micro Devices	Cascadable Broadband GaAs MMIC Amplifier DC to 12GHz, MPGA-9	9-MPGA