

Bill of Materials

TI DESIGNS

TIDC-MULTIBAND-WMBUS

Item	Reference	Qty	Value	Part Description	Manufacturer	Manufacturer Part Number	Alternate Part	PCB Footprint	Note
C11,C51,C121,C131,C151	C_47N_0402_X7R_K_25	5	Capacitor, 47n, 0402, X7R, 10%, 25V	Capacitor	Murata	GRM155R71E473KA88D		0402	
C12	C_100N_0402_X5R_K_10	0	Do not mount						
C41	C_10N_0402_X7R_K_25	0	Do not mount						
C52	C_2U2_0603_X5R_K_10	1	Capacitor, 2u2, 0603, X5R, 10%, 10V	Capacitor	Murata	GRM188R61A225KE34D		0603	
C53	C_0402	0	Do not mount						
C61	C_220N_0402_X5R_K_10	1	Capacitor, 220n, 0402, X5R, 10%, 10V	Capacitor	Murata	GRM155R61A224KE19D		0402	
C171	C_10N_0402_X7R_K_25	1	Capacitor, 10n, 0402, X7R, 10%, 25V	Capacitor	Murata	GRM155R71E103KA01D		0402	
C172	C_100P_0402_NP0_J_50	1	Capacitor, 100p, 0402, NP0, 5% 50V	Capacitor	Murata	GRM1555C1H101J201D		0402	
C173	C_56P_0402_NP0_J_50	0	Do not mount						
C174	C_82P_0402_NP0_J_50	1	Capacitor, 82p, 0402, NP0, 5% 50V	Capacitor	Murata	GRM1555C1H820J201D		0402	
C175	C_15P_0402_NP0_J_50	1	Capacitor, 15p, 0402, NP0, 5%, 50V	Capacitor	Murata	GRM1555C1H150JA01D		0402	
C176,C181,C191,C201	C_12P_0402_NP0_J_50	4	Capacitor, 12p, 0402, NP0, 5%, 50V	Capacitor	Murata	GRM1555C1H120JA01D		0402	
C177	C_1P2_0402_NP0_B_50	1	Capacitor, 1p2, 0402, NP0, +/-0.1pF 50V	Capacitor	Murata	GRM1555C1H1R2B201D		0402	
C211	C_10N_0402_X7R_K_25	1	Capacitor, 10n, 0402, X7R, 10%, 25V	Capacitor	Murata	GRM155R71E103KA01D		0402	
C221,C251,C261,C271,C281,C291	C_47N_0402_X7R_K_25	6	Capacitor, 47n, 0402, X7R, 10%, 25V	Capacitor	Murata	GRM155R71E473KA88D		0402	
C231	C_1N8_0402_U2J_J_10	1	Capacitor, 1n8, 0402, U2J, 5%, 10V	Capacitor	Murata	GRM1557U1A182JA01D		0402	
C301,C311	C_15P_0402_NP0_J_50	2	Capacitor, 15p, 0402, NP0, 5%, 50V	Capacitor	Murata	GRM1555C1H150JA01D		0402	
C302	C_0402	0	Do not mount						
C321	C_100N_0402_X5R_K_10	0	Do not mount						
C322	C_22P_0402_NP0_J_50	0	Do not mount						
L1	L_BEAD_102_0402	1	EMI filter bead, 0402 1k ohms Tape GHz Band Gen Use	Filter bead	Murata	BLM15HG102SN1D	ACTE	0402	
L171	L_220N_0402_J	1	Inductor, 220n, 0402, +/-5%	Inductor	Murata	LQG15HSR22J02		0402	
L172	L_18N_0402_J_LQW	1	Inductor, 18n, 0402, +/-5%, wire-wound type	Inductor	Murata	LQW15AN8NU00D		0402	
L173	L_100N_0402_J_LQW	1	Inductor, 100n, 0402, +/-5%, wire-wound type	Inductor	Murata	LQW15AN10R10J		0402	
L174	L_68N_0402_J_LQW	1	Inductor, 68n, 0402, +/-5%, wire-wound type	Inductor	Murata	LQW15AN68NJ02	ACTE	0402	
L191	L_150N_0402_J	1	Inductor, 150n, 0402, +/-5%	Inductor	Murata	LQG15HSR15J02		0402	
L192,L201	L_82N_0402_J_LQW	2	Inductor, 82n, 0402, +/-5%, wire-wound type	Inductor	Murata	LQW15AN82NJ02	ACTE	0402	
L193	L_39N_0402_J_LQW	1	Inductor, 39n, 0402, +/-5%, wire-wound type	Inductor	Murata	LQW15AN39NJ00D		0402	
P1_P2	SMD_SOCKET_2x10	2	SMD pinrow socket, .050 spacing, 2x10	Connector	Samtec	SFM-110-02-SM-D-A-K-TR	Abacus		
P3	SMA_SMD	1	SMA connector, straight SMD-mount	Connector	Hus-Tsan Group Taiwan	SMA-10V21-TGG	EC Partner A/S	SMA-10V21-TGG	
R12	R_0_0402	1	Resistor, 0 ohm, 0402	Resistor	Koa	RK73Z1ETTP	ELFA	0402	
R141	R_56K_0402_F	1	Resistor, 56k ohms, 0402, +/-1%	Resistor	Koa	RK73H1ETTP5602F	ELFA	0402	
R171	R_22_0402_J	1	Resistor, 22 ohms, 0402, 5%	Resistor	Koa	RK73H1ETTP22R0F (+1%)	ELFA	0402	
R321	R_0402	0	Do not mount						
R322	R_0_0402	0	Do not mount						
U1	CC112X	1	TI transceiver	CC1120 Radio	Texas Instruments	CC1120RHR			
U2	TPS9930	0	Do not mount						
X1	X_32.000/10/20/60/10	1	Crystal, 32.000000MHz, FA-128, 10.0pF, +/-10ppm, (FTC: +/-20ppm at -40/85C), 60ohms	XTAL	Epson Toyocom	FA-128, 32MHz, 10PPM, 10PF, 2x1.6mm ACTE			
X2	TG_5021CG	0	Do not mount	TCXO					

TIDC-MULTIBAND-WMBUS (169 MHz version)

C11,C51,C121,C131,C151	C_47N_0402_X7R_K_25	5	Capacitor, 47n, 0402, X7R, 10%, 25V	Capacitor	Murata	GRM155R71E473KA88D		0402	
C12	C_100N_0402_X5R_K_10	0	Do not mount						
C41	C_10N_0402_X7R_K_25	0	Do not mount						
C52	C_2U2_0603_X5R_K_10	1	Capacitor, 2u2, 0603, X5R, 10%, 10V	Capacitor	Murata	GRM188R61A225KE34D		0603	
C53	C_0402	0	Do not mount						
C61	C_220N_0402_X5R_K_10	1	Capacitor, 220n, 0402, X5R, 10%, 10V	Capacitor	Murata	GRM155R61A224KE19D		0402	
C171	C_10N_0402_X7R_K_25	1	Capacitor, 10n, 0402, X7R, 10%, 25V	Capacitor	Murata	GRM155R71E103KA01D		0402	
C172	C_100P_0402_NP0_J_50	1	Capacitor, 100p, 0402, NP0, 5% 50V	Capacitor	Murata	GRM1555C1H101J201D		0402	
C173	C_56P_0402_NP0_J_50	0	Do not mount						
C174	C_39P_0402_NP0_J_50	1	Capacitor, 39p, 0402, NP0, 5%, 50V	Capacitor	Murata	GRM1555C1H390J201D		0402	
C175	C_6P2_0402_NP0_C_50	1	Capacitor, 6p2, 0402, NP0, +/-0.25pF 50V	Capacitor	Murata	GRM1555C1H6R2C201D		0402	
C176	C_2P2_0402_NP0_C_50	1	Capacitor, 2p2, 0402, NP0, +/-0.25pF, 50V	Capacitor	Murata	GRM1555C1H2R2C201		0402	
C177	C_0402	0	Do not mount						
C181,C191,C201	C_5P1_0402_NP0_C_50	3	Capacitor, 5p1, 0402, NP0, +/-0.25pF, 50V	Capacitor	Murata	GRM1555C1H5R1CZ01D		0402	
C211	C_10N_0402_X7R_K_25	1	Capacitor, 10n, 0402, X7R, 10%, 25V	Capacitor	Murata	GRM155R71E103KA01D		0402	
C221,C251,C261,C271,C281,C291	C_47N_0402_X7R_K_25	6	Capacitor, 47n, 0402, X7R, 10%, 25V	Capacitor	Murata	GRM155R71E473KA88D		0402	
C231	C_1N8_0402_U2J_J_10	1	Capacitor, 1n8, 0402, U2J, 5%, 10V	Capacitor	Murata	GRM1557U1A182JA01D		0402	
C301	C_15P_0402_NP0_J_50	1	Capacitor, 15p, 0402, NP0, 5%, 50V	Capacitor	Murata	GRM1555C1H150JA01D		0402	
C302	C_0402	0	Do not mount						
C311	C_15P_0402_NP0_J_50	1	Capacitor, 15p, 0402, NP0, 5%, 50V	Capacitor	Murata	GRM1555C1H150JA01D		0402	
C321	C_100N_0402_X5R_K_10	0	Do not mount						
C322	C_22P_0402_NP0_J_50	0	Do not mount						
L1	L_BEAD_102_0402	1	EMI filter bead, 0402 1k ohms Tape GHz Band Gen Use	Filter bead	Murata	BLM15HG102SN1D	ACTE	0402	
L171,L191	L_56N_0402_J_LQW	2	Inductor, 56n, 0402, +/-5%, wire-wound type	Inductor	Murata	LQW15AN56NJ02		0402	
L172,L193	L_15N_0402_J_LQW	1	Inductor, 15n, 0402, +/-5%, wire-wound type	Inductor	Murata	LQW15AN15NJ00D		0402	
L173	L_43N_0402_J_LQW	1	Inductor, 43n, 0402, +/-5%, wire-wound type	Inductor	Murata	LQW15AN43NJ00		0402	
L174	L_22N_0402_J_LQW	1	Inductor, 22n, 0402, +/-5%, wire-wound type	Inductor	Murata	LQW15AN22NJ00D	ACTE	0402	
L192,L201	L_27N_0402_J_LQW	2	Inductor, 27n, 0402, +/-5%, wire-wound type	Inductor	Murata	LQW15AN27NJ00D	ACTE	0402	
P1_P2	SMD_SOCKET_2x10	2	SMD pinrow socket, .050 spacing, 2x10	Connector	Samtec	SFM-110-02-SM-D-A-K-TR	Abacus		
P3	SMA_SMD	1	SMA connector, straight SMD-mount	Connector	Hus-Tsan Group Taiwan	SMA-10V21-TGG	EC Partner A/S	SMA-10V21-TGG	
R12	R_0_0402	1	Resistor, 0 ohm, 0402	Resistor	Koa	RK73Z1ETTP	ELFA	0402	

Item	Reference	Qty	Value	Part Description	Manufacturer	Manufacturer Part Number	Alternate Part	PCB Footprint	Note
R141	R_56K_0402_F	1	Resistor, 56k ohms, 0402, ±1%	Resistor	Koa	RK73H1ETTP5602F	ELFA	0402	
R171	R_18_0402_J	1	Resistor, 18 ohms, 0402, 5%	Resistor	Koa	RK73H1ETTP18R0F (±1%)	ELFA	0402	
R321	R_0402	0	Do not mount			RK73Z1ETTP	ELFA		
R322	R_0_0402	0	Do not mount						
U1	CC112X	1	TI transceiver	CC1120 Radio	Texas Instruments	CC1120RHR			
U2	TPS79930	0	Do not mount						
X1	X_32.000/10/20/60/10	1	Crystal, 32.000000MHz, FA-128, 10.0pF, +/-10ppm, (FTC: +/-20ppm at -40/85C), 60ohms	XTAL	Epson Toyocom	FA-128, 32MHz, 10PPM, 10PF, 2x1.6mm ACTE			
X2	TG_5021CG	0	Do not mount	TCXO					
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TIDC-MULTIBAND-WMBUS (420-470 MHz version)

C11,C51,C121,C131,C151	C_47N_0402_X7R_K_25	5	Capacitor, 47n, 0402, X7R, 10%, 25V	Capacitor	Murata	GRM155R71E473KA88D		0402	
C12	C_100N_0402_X5R_K_10	0	Do not mount						
C41	C_10N_0402_X7R_K_25	0	Do not mount						
C52	C_2U2_0603_X5R_K_10	1	Capacitor, 2u2, 0603, X5R, 10%, 10V	Capacitor	Murata	GRM188R61A225KE34D		0603	
C53	C_0402	0	Do not mount						
C61	C_220N_0402_X5R_K_10	1	Capacitor, 220n, 0402, X5R, 10%, 10V	Capacitor	Murata	GRM155R61A224KE19D		0402	
C171	C_10N_0402_X7R_K_25	1	Capacitor, 10n, 0402, X7R, 10%, 25V	Capacitor	Murata	GRM155R71E103KA01D		0402	
C172	C_100P_0402_NP0_J_50	1	Capacitor, 100p, 0402, NP0, 5%, 50V	Capacitor	Murata	GRM1555C1H101JZ01D		0402	
C173	C_33P_0402_NP0_J_50	1	Capacitor, 33p, 0402, NP0, 5%, 50V	Capacitor	Murata	GRM1555C1H330JZ01D		0402	
C174	C_15P_0402_NP0_J_50	1	Capacitor, 15p, 0402, NP0, 5%, 50V	Capacitor	Murata	GRM1555C1H150JA01D		0402	
C175	C_3P0_0402_NP0_C_50	1	Capacitor, 3p0, 0402, NP0, +/-0.25pF, 50V	Capacitor	Murata	GRM1555C1H3R0CZ01D		0402	
C176	C_1P0_0402_NP0_B_50	1	Capacitor, 1p, 0402, NP0, +/-0.1pF, 50V	Capacitor	Murata	GRM1555C1H1R0BZ01D		0402	
C191,C201	C_3P3_0402_NP0_C_50	2	Capacitor, 3p3, 0402, NP0, +/-0.25pF, 50V	Capacitor	Murata	GRM1555C1H3R3CZ01D		0402	
C177	C_0402	0	Do not mount						
C181	C_2P2_0402_NP0_C_50	1	Capacitor, 2p2, 0402, NP0, +/-0.25pF, 50V	Capacitor	Murata	GRM1555C1H2R2CZ01D		0402	
C211	C_10N_0402_X7R_K_25	1	Capacitor, 10n, 0402, X7R, 10%, 25V	Capacitor	Murata	GRM155R71E103KA01D		0402	
C221,C251,C261,C271,C281,C291	C_47N_0402_X7R_K_25	6	Capacitor, 47n, 0402, X7R, 10%, 25V	Capacitor	Murata	GRM155R71E473KA88D			
C231	C_1N8_0402_U2J_J_10	1	Capacitor, 1n8, 0402, U2J, 5%, 10V	Capacitor	Murata	GRM1557U1A182JA01D			
C301	C_15P_0402_NP0_J_50	1	Capacitor, 15p, 0402, NP0, 5%, 50V	Capacitor	Murata	GRM1555C1H150JA01D			
C302	C_0402	0	Do not mount						
C311	C_15P_0402_NP0_J_50	1	Capacitor, 15p, 0402, NP0, 5%, 50V	Capacitor	Murata	GRM1555C1H150JA01D			
C321	C_100N_0402_X5R_K_10	0	Do not mount						
C322	C_22P_0402_NP0_J_50	0	Do not mount						
L1	L_BEAD_102_0402	1	EMI filter bead, 0402 1k ohms Tape GHz Band Gen Use	Filter bead	Murata	BLM15HG102SN1D	ACTE	0402	
L171	L_10N_0402_J_LQW	1	Inductor, 10n, 0402, ±5%, wire-wound type	Inductor	Murata	LQW15AN10NJ00D		0402	
L172	L_7N5_0402_G_LQW	1	Inductor, 7n5, 0402, ±2%, wire-wound type	Inductor	Murata	LQW15AN7NSG00D		0402	
L173	L_18N_0402_J_LQW	1	Inductor, 18n, 0402, ±5%, wire-wound type	Inductor	Murata	LQW15AN18NJ00D		0402	
L191	L_15N_0402_J_LQW	1	Inductor, 15n, 0402, ±5%, wire-wound type	Inductor	Murata	LQW15AN15NJ00D		0402	
L174,L192,L193,L201	L_12N_0402_J_LQW	4	Inductor, 12n, 0402, ±5%, wire-wound type	Inductor	Murata	LQW15AN12NJ00D		0402	
P1,P2	SMD_SOCKET_2x10	2	SMD pinlow socket, .050 spacing, 2x10	Connector	Santac	SFM-110-02-SM-D-A-K-TR	Abacus		
P3	SMA_SMD	1	SMA connector, straight SMD-mount	Connector	Hus-Tsan Group Taiwan	SMA-10V21-TGG	EC Partner A/S	SMA-10V21-TGG	
R12	R_0_0402	1	Resistor, 0 ohm, 0402	Resistor	Koa	RK73Z1ETTP	ELFA	0402	
R141	R_56K_0402_F	1	Resistor, 56k ohms, 0402, ±1%	Resistor	Koa	RK73H1ETTP5602F	ELFA	0402	
R171	R_10_0402_J	1	Resistor, 10 ohms, 0402, 5%	Resistor	Koa	RK73H1ETTP10R0F (±1%)	ELFA	0402	
R321	R_0402	0	Do not mount						
R322	R_0_0402	0	Do not mount						
U1	CC1120	1	TI transceiver	CC1120 Radio	Texas Instruments	CC1120RHR			
U2	TPS79930	0	Do not mount						
X1	X_32.000/10/20/60/10	1	Crystal, 32.000000MHz, FA-128, 10.0pF, +/-10ppm, (FTC: +/-20ppm at -40/85C), 60ohms	XTAL	Epson Toyocom	FA-128, 32MHz, 10PPM, 10PF, 2x1.6mm ACTE			
X2	TG_5021CG	0	Do not mount	TCXO					
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TIDC-MULTIBAND-WMBUS (868-915 MHz version)

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