

YTR-MB12_BOM_2020-10-16

Syncwise T10-R
Syncwise - Confidential

Development

Bill Of Materials October 16, 2020

Item	Quantity	Reference
1	1	ANT1
2	1	BAT1
3	72	C1,C3,C4,C8,C17,C22,C38,C40,C42,C44,C46,C48,C50,C52,C54,C56,C58,C60,C
4	9	C2,C111,C113,C118,C119,C122,C124,C186,C219
5	17	C5,C6,C7,C9,C39,C66,C71,C77,C100,C101,C105,C106,C132,C150,C172,C173,C
6	9	C10,C11,C12,C18,C23,C109,C110,C116,C117
7	17	C13,C14,C37,C41,C43,C45,C47,C49,C51,C55,C57,C59,C61,C63,C65,C193,C22
8	2	C15,C20
9	14	C16,C21,C25,C26,C75,C112,C114,C120,C121,C123,C125,C170,C187,C194
10	4	C19,C24,C156,C157
11	10	C27,C85,C86,C95,C96,C108,C115,C126,C210,C226
12	1	C28
13	1	C34
14	14	C36,C53,C130,C131,C137,C140,C149,C153,C167,C168,C185,C209,C228,C232
15	6	C83,C84,C93,C94,C207,C217
16	4	C128,C139,C145,C148
17	3	C138,C146,C147
18	2	C141,C192
19	2	C152,C166
20	2	C154,C165
21	2	C155,C164
22	2	C158,C161
23	2	C159,C162
24	2	C160,C163
25	4	C174,C175,C179,C180
26	2	C176,C177
27	12	C195,C196,C197,C198,C199,C201,C202,C203,C204,C206,C218,C237
28	1	C208
29	1	C213
30	1	C214
31	2	C222,C223
32	1	C229
33	2	C230,C231
34	1	C235
35	25	D1,D2,D3,D4,D5,D6,D7,D14,D15,D22,D23,D24,D25,D28,D29,D30,D31,D32,D33,
36	7	V1,V2,V3,V4,V5,V6,D8
37	4	D9,D10,D11,D12
38	5	D13,D16,D17,D18,D20
39	1	D19
40	2	D26,D27
41	1	D37
42	1	D41
43	2	D42,D43
44	1	J1
45	1	J2
46	1	J3
47	1	J4

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48	2	J5,J6
49	3	J7,J8,J11
50	1	J9
51	1	J10
52	1	J12
53	1	J13
54	1	J14
55	1	L1
56	5	L2,L27,L28,L29,L30
57	15	L3,L4,L5,L6,L7,L18,L23,L25,L26,L32,L33,L34,L35,L36,L44
58	6	L8,L15,L16,L19,L21,L24
59	5	L9,L10,L11,L12,L13
60	4	L14,L17,L20,L22
61	2	L31,L38
62	1	L37
63	2	L39,L40
64	2	L41,L42
65	2	L43,L45
66	1	L46
67	1	L47
68	4	M1,M2,M3,M4
69	6	Q1,Q5,Q13,Q21,Q23,Q26
70	18	Q2,Q3,Q4,Q6,Q7,Q8,Q9,Q10,Q14,Q16,Q17,Q18,Q19,Q20,Q22,Q24,Q25,Q34
71	2	Q15,Q28
72	3	Q27,Q31,Q33
73	2	Q29,Q36
74	2	Q30,Q32
75	1	Q35
76	3	R1,R3,R16
77	1	R2
78	26	R8,R11,R13,R14,R31,R34,R38,R39,R40,R51,R52,R53,R54,R73,R88,R89,R93,R
79	38	R10,R21,R33,R35,R36,R37,R42,R43,R59,R60,R65,R66,R67,R68,R74,R76,R77,R
80	8	R12,R15,R17,R18,R19,R20,R41,R141
81	2	R22,R84
82	2	R23,R133
83	29	R24,R25,R26,R27,R28,R32,R44,R48,R49,R71,R79,R92,R94,R103,R112,R116,R
84	1	R29
85	1	R46
86	6	R47,R50,R62,R63,R90,R91
87	4	R55,R56,R57,R58
88	2	R61,R85
89	4	R69,R140,R163,R171
90	1	R70
91	2	R72,R169
92	1	R75
93	2	R81,R82
94	2	R86,R87
95	1	R95
96	1	R98
97	2	R100,R106
98	2	R101,R102
99	1	R111
100	1	R113
101	1	R119
102	1	R121

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103	2	R135,R158
104	1	R144
105	1	R145
106	1	R156
107	1	R164
108	1	R170
109	1	R172
110	1	R173
111	1	R174
112	1	R175
113	2	SW1,SW2
114	1	U1
115	1	U2
116	1	U3
117	3	U4,U5,U6
118	1	U7
119	1	U8
120	1	U9
121	1	U10
122	1	U11
123	1	U12
124	1	U13
125	1	U14
126	2	U15,U16
127	3	U17,U18,U30
128	2	U19,U20
129	2	U21,U24
130	1	U22
131	1	U23
132	1	U25
133	2	U26,U28
134	1	U27
135	1	U29
136	1	U31
137	1	U32
138	1	U33
139	1	U34
140	1	U35
141	1	Y1
142	1	Y2
143	1	Y3

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Description	Manufacturer
ANTENNA, GPS/GNSS, CERAMIC PATCH 25X25MM, TH	2J
Lithium-Ion Battery Rechargeable (Secondary) 3V 5.5mAh C	Seiko Instruments
CAP CER 0.1UF 50V X7R 0402	Murata Electronics
CAP CER 2.2UF 16V X5R 0402	MURATA
CAP CER 10UF 10V 10% X5R 0603	TDK Corporation
CAP CER 33PF 50V C0G/NPO 0402	Yageo
CAP CER 10000PF 50V X7R 0402	Samsung Electro-Mechanics
CAP TANT POLY 100UF 6.3V 3528	KEMET
CAP CER 4.7UF 10V X5R 0402	Samsung Electro-Mechanics
10pF ±5% 50V Ceramic Capacitor C0G, NP0 0402 (1005 M	Yageo
CAP CER 100PF 50V C0G/NPO 0402	Yageo
CAP CER 470PF 50V X7R 0402	Samsung Electro-Mechanics
CAP CER 0.033UF 16V X7R 0402	Samsung Electro-Mechanics
CAP CER 1UF 25V X5R 0402	Murata Electronics
CAP CER 1000PF 50V X7R 0402	Yageo
CAP CER 4.7uF 50V 20% X5R 1206	KEMET
CAP CER 0.1UF 50V X7R 0603	Samsung Electro-Mechanics
CAP CER 4.7uF 35V 20% X5R 0603	MURATA
CAP CER 1000PF 16V X7R 0603	Yageo
CAP CER 56PF 50V C0G/NPO 0603	Yageo
CAP CER 22PF 50V C0G/NPO 0603	Yageo
CAP CER 680PF 50V X7R 0603	Yageo
CAP CER 120PF 50V C0G/NP0 0603	Samsung Electro-Mechanics
CAP CER 2.2PF 50V C0G/NP0 0603	Samsung Electro-Mechanics
47µF ±10% 16V Ceramic Capacitor X5R 1210 (3225 Metric	Samsung Electro-Mechanics
CAP CER 22PF 50V C0G/NPO 0402	Yageo
CAP CER 10UF 50V X5R 1206	MURATA
CAP CER 0.33UF 25V X7R 0603	Yageo
CAP CER 0.033UF 50V X7R 0402	TDK Corporation
CAP CER 0.33UF 10V X5R 0402	Samsung Electro-Mechanics
CAP CER 10UF 35V X5R 10% 1206	Taiyo Yuden
CAP CER 22UF 25V 20% X7R 1210	MURATA
CAP CER 100UF 16V 20% X5R 1210	KEMET
CAP CER 9.1pF 50V +/-0.1pF C0G/NP0 0402	MURATA
TVS DIODE 3.6V 12V 0201	STMicroelectronics
TVS DIODE 14VWM 40VC 0402	Littelfuse Inc.
TVS DIODE 5V SOD923	ON Semiconductor
DIODE SCHOTTKY 40V 1A 500mV@1A SOD-123L	ON SEMICONDUCTOR
DIODE ZENER VZ=7.04V, 0.5W, 900mV@10mA SC-90	Diodes Incorporated
DIODE SCHOTTKY 40V 3A SOD123W	Nexperia USA Inc.
DIODE TVS 20VWM 30VC BIDIR SOD323 SMT	Diodes Incorporated
DIODE GEN PURP 80V 125MA 2DFN	Diodes Incorporated
DIODE SCHOTTKY 20V 1A 500mV@900mA SOD323	ON SEMICONDUCTOR
6 Position Card Connector Micro SIM Surface Mount, Right	Molex, LLC
CONN MICRO SD CARD PUSH-PUSH SMT R/A CD LOW	MOLEX
CONN HEADER 3-POS 1.25MM R/A SMT	MOLEX
CONN HEADER 4-POS 1.00MM R/A SMT	MOLEX

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24 Position Connector Receptacle, Outer Shroud Contacts S	MOLEX
CONN HEADER 2-POS 1.00MM R/A SMT	MOLEX
CONN FPC TOP 40POS 0.5MM R/A	MOLEX
CONN FPC BOTTOM 6POS 0.5MM R/A	HIROSE
CONN HEADER SH 6POS SIDE 1MM TIN	JST Sales America Inc.
CONN USB 2.0 MICRO-AB RECEPT SMD RA	MOLEX
CONN RECEPT 5-POS 1.25MM R/A SMT	WELL-LIN
FIXED IND 6.8NH 700MA 90 MOHM	MURATA
FERRITE BEAD 1 KOHM 0402 1LN	Murata Electronics North America
CHOKE COMMON MODE, 330mA, DCR=0.350R, DIFF=90	MURATA
FERRITE BEAD 220R@100MHZ 2A, DCR=0.050R 0603 1L	MURATA
FERRITE BEAD 120R@100MHZ 2.0A DCR=0.055R 0402	MURATA
IND 2.2uH 20% 0.850A DCR=0.080R 2520	ABRACON
IND 10uH 20% 0.830A, DCR=0.265R	ABRACON
IND 4.7uH 20% 2.0/2.9A DCR=0.078R 4x4mm	LAIRD
FIXED IND 160NH 150MA 2.1 OHM	Murata Electronics
Fixed Inductors 1uH 20% 9.6A 14.60mOhms AEC-Q200	Coilcraft
FERRITE BEAD 120R@100MHZ 3.0A DCR=0.030R 0603	MURATA
IND 10uH 20% 5.4/6.4A DCR=0.052R SHIELDED	VISHAY DALE
IND 1.0uH 20% 13A/23A DCR=0.006R SHIELDED	Coilcraft
TEST CLIP, 3.43X1.78 MM, SMT	KEYSTONE
MOSFET P-CH 20V 5A@25C RDS=0.041R@4.5V	ALPHA & OMEGA SEMI
MOSFET N-CH 20V 0.230A 1V@1mA SOT-523	DIODES INC
MOSFET P-CH 30V 4.3A SOT23	DIODES INC
MOSFET N-CH 60V 0.240A 2.5V@250uA VGS<30V	DIODES INC
MOSFET N-CH 30V 4.2A SC59	DIODES INC
MOSFET P-CH 30V 8A 6DFN	ALPHA & OMEGA SEMI
MOSFET N-CH DUAL 40V 12A@25C RDS=0.010R,10V	FAIRCHILD SEMICONDUCTOR
RES SMD 22 OHM 1% 1/16W 0402	Yageo
RES SMD 120K OHM 1% 1/16W 0402	Yageo
10k Ohm ±5% 0.063W, 1/16W Chip Resistor 0402 (1005 M	Yageo
RES SMD 100K OHM 1% 1/16W 0402	Yageo
RES SMD 33 OHM 1% 1/16W 0402	Yageo
RES SMD 1K OHM 1% 1/16W 0402	Yageo
RES SMD 330 OHM 1% 1/16W 0402	Yageo
RES SMD 0 OHM JUMPER 1/16W 0402	Yageo
RES SMD 47K OHM 1% 1/16W 0402	Yageo
RES SMD 20K OHM 1% 1/16W 0402	Yageo
RES SMD 2.2K OHM 1% 1/16W 0402	Yageo
RES SMD 100 OHM 1% 1/16W 0402	Yageo
RES SMD 0 OHM JUMPER 1/10W 0603	Yageo
RES SMD 107K OHM 1% 1/16W 0402	Yageo
RES SMD 76.8K OHM 1% 1/16W 0402	VISHAY DALE
RES SMD 121K OHM 1% 1/16W 0402	VISHAY DALE
RES SMD 22.1K OHM 1% 1/16W 0402	VISHAY DALE
RES SMD 1.78 OHM 1% 1/10W 0603	Vishay Dale
3.3 kOhms ±1% 0.063W, 1/16W Chip Resistor 0402 (1005	Yageo
RES SMD 294K OHM 1% 1/16W 0402	Yageo
RES SMD 17.4K OHM 1% 1/16W 0402	VISHAY DALE
RES SMD 2.2K OHM 1% 1/10W 0603	Yageo
RES SMD 1.5 OHM 5% 1/10W 0603	Yageo
10.2 kOhms ±1% 0.063W, 1/16W Chip Resistor 0402 (1005	Yageo
RES SMD 1.8K OHM 1% 1/16W 0402	Yageo
RES SMD 5.36K OHM 1% 1/16W 0402	Yageo
RES SMD 1.2K OHM 1% 1/16W 0402	Yageo

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RES 0.016 OHM 1% 1W 1206	Panasonic Electronic Components
RES SMD 64.9K OHM 1% 1/16W 0402	Yageo
RES SMD 226K OHM 1% 1/16W 0402	Yageo
RES SMD 301K 0.1% 1/10W 25ppm 0603	PANASONIC
RES SMD 95.3K OHM 1% 1/16W 0402	Yageo
RES SMD 23.7K OHM 1% 1/16W 0402	VISHAY DALE
RES SMD 33.2K OHM 1% 1/16W 0402	Yageo
RES SMD 1M OHM 1% 1/16W 0402	Yageo
RES SMD 240K OHM 1% 1/16W 0402	Yageo
RES SMD 1M OHM 1% 1/16W 0402	Yageo
SWITCH TACTILE, SPST-NO, RA, 0.05A, 12V, TH	APEM INC
IC REG LINEAR 3.3V 400MA SOT23-5	Texas Instruments
IC FILTER, SAW 1.57542 GHZ, SMT	EPCOS (TDK)
IC LNA, GPS/GNSS, GAIN=20.5dB, VCC=1.6-3.6V, I-TEMP	MAXIM INTEGRATED
Ultra Miniature Coaxial, IPEX MHF1 Connector Receptacle,	Taoglas Limited
IC INTERFACE SPECIALIZED 64HTQFP	Texas Instruments
LTE SC20 Smart Module	Quectel
IC EEPROM, 4KBIT, 400KHZ, 1.7-5.5V, 8TSSOP, I-TEMP	ST MICROELECTRONICS
Accelerometer, Magnetometer, Temperature, 6 Axis Sensor	STMicroelectronics
IC PRESSURE / ALTIMETER SENSOR, 7.25 ~ 15.95 PSI 2	NXP SEMICONDUCTOR
IC AMBIENT LIGHT SENSOR, VARIABLE GAIN, 1.8/3.3V,	LITE-ON
Gyroscope X (Pitch), Y (Roll), Z (Yaw) ±245, 500, 2000 6.25	STMicroelectronics
IC AUDIO, AMP, CLASS-D, 2W@4R, ANALOG, LFCSP16	Analog Devices
IC REG LINEAR 1.2V 300MA SOT25	DIODES INC
IC REG LINEAR 1.8V 300MA SOT25	DIODES INC
IC REG LDO 2.8V 0.3A SOT25	DIODES INC
IC, REG BOOST, 2.5-10VIN, 2.8-34VOUT, 1A, I-TEMP	MICROCHIP
IC REG, LDO, FIXED +2.5V VIN=+2.0-5.5V 300MA I-TEMP	Texas Instruments
IC REG, BACKLIGHT DRIVER, 100-10KHZ, VIN=2.8-30V, V	SILERGY
IC RFID READER 13.56MHZ 40HVQFN	NXP USA Inc.
Switching Regulator IC Output 12-PowerVFQFN	Texas Instruments
IC MCU 32BIT 64KB FLASH 48LQFP	STMicroelectronics
IC MPU RESET MON 2.93V SOT-323	ON Semiconductor
IC SWITCH 2 X SPDT 10UQFN	Texas Instruments
Voltage Level Translator Bidirectional 1 Circuit 4 Channel 38	Texas Instruments
IC LOAD SWITCH USB VINT=3-5.5V VBUS=30V TOL 2A D	NXP SEMICONDUCTOR
IC BATT CHARGER CTRLR BUCK 38QFN	LINEAR TECH
Buck Switching Regulator IC Positive Adjustable 0.97V 1 Ou	LINEAR TECH
27MHz XO (Standard) CMOS Oscillator 1.6V ~ 3.6V Standb	EPSON
27.12MHz Crystal 10pF 60 Ohms 4-SMD, No Lead	NDK America, Inc.
12MHz ±20ppm Crystal 18pF 50 Ohm	Abracon Corporation

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MFG_P_N	Vendor
2JCP2540101Ga	2J
MS621FE-FL11E	Digikey
GRM155R71H104KE14J	Digikey
GRM155R61C225KE11D	Digikey
C1608X5R1A106K080AC	Digikey
CC0402JRNPO9BN330	Digikey
CL05B103KB5NNNC	Digikey
T520B107M006ATE070	Digikey
CL05A475MP5NRNC	Digikey
CC0402JRNPO9BN100	Digikey
CC0402JRNPO9BN101	Digikey
CL05B471KB5NNNC	Digikey
CL05B333KO5NNNC	Digikey
GRM155R61E105KA12D	Digikey
CC0402KRX7R9BB102	Digikey
C1206C475M5PACTU	Digikey
CL10B104KB8NNNC	Digikey
GRM188R6YA475ME15D	Digikey
CC0603KRX7R7BB102	Digikey
CC0603JRNPO9BN560	Digikey
CC0603JRNPO9BN220	Digikey
CC0603KRX7R9BB681	Digikey
CL10C121JB8NNNC	Digikey
CL10C2R2BB8NNNC	Digikey
CL32A476KOJNNNE	Digikey
CC0402JRNPO9BN220	Digikey
GRT31CR61H106KE01L	Digikey
CC0603KRX5R8BB334	Mouser
CGA2B3X7R1H333K050BB	Digikey
CL05A334KP5NNNC	Digikey
GMK316BJ106KL-T	Digikey
GRM32ER71E226ME15K	Digikey
C1210C107M4PAC7800	Digikey
GJM1555C1H9R1BB01D	Digikey
ESDARF02-1BU2CK	Digikey
PESD0402-140	Digikey
ESD9B5.0ST5G	Digikey
MBR140SFT1G	Digikey
DDZ7V5ASF-7	Mouser
PMEG4030ER,115	Digikey
D20V0L1B2WS-7	Digikey
1N4448HLP-7	Digikey
NSR0320MW2T1G	Digikey
788000001	Digikey
502570-0893	Digikey
53261-0371	Digikey
503763-0491	Digikey

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503772-2420	Digikey
503763-0291	Digikey
541044031	Digikey
FH12-6S-0.5SH(55)	Digikey
SM06B-SRSS-TB(LF)(SN)	Digikey
047589-0001	Digikey
1256-SMTR-05P	GlobalSat
LQW15AN6N8G00D	Digikey
BLM15HD102SN1D	Digikey
DLW21HN900SQ2L	Digikey
BLM18EG221SN1D	Digikey
BLM15PX121SN1D	Digikey
ASMPH-1008-2R2M-T	Digikey
ASPI-3012S-100M-T	Digikey
TYS40304R7M-10	Digikey
LQW18ANR16G00D	Digikey
XAL4020-102MEC	Mouser
BLM18KG121TN1D	Digikey
IHLP3232DZER100M11	Digikey
XAL6030-102MEC	Mouser
5015	Digikey
AO3415A	Digikey
DMN26D0UT-7	Digikey
DMP3056L-7	Digikey
DMN67D8LW-13	Digikey
DMN3070SSN-7	Digikey
AON2409	Digikey
FDMC8030	Digikey
RC0402FR-0722RL	Digikey
RC0402FR-07120KL	Digikey
AC0402JR-0710KL	Digikey
RC0402FR-07100KL	Digikey
RC0402FR-0733RL	Digikey
RC0402FR-071KL	Digikey
RC0402FR-07330RL	Digikey
RC0402JR-070RL	Digikey
RC0402FR-0747KL	Digikey
RC0402FR-0720KL	Digikey
RC0402FR-072K2L	Digikey
RC0402FR-07100RL	Digikey
RC0603JR-070RL	Digikey
RC0402FR-07107KL	Digikey
CRCW040276K8FKED	Digikey
CRCW0402121KFKED	Digikey
CRCW040222K1FKEDC	Digikey
CRCW06031R78FKEA	Digikey
RC0402FR-073K3L	Digikey
RC0402FR-07294KL	Digikey
CRCW040217K4FKED	Digikey
RC0603FR-072K2L	Digikey
RC0603JR-071R5L	Digikey
RC0402FR-0710K2L	Digikey
RC0402FR-071K8L	Digikey
RC0402FR-075K36L	Digikey
RC0402FR-071K2L	Digikey

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ERJ-8CWFR016V	Digikey
RC0402FR-0764K9L	Digikey
RC0402FR-07226KL	Digikey
ERA-3AEB3013V	Digikey
RC0402FR-0795K3L	Digikey
CRCW040223K7FKED	Digikey
RC0402FR-0733K2L	Digikey
RC0402FR-071ML	Digikey
RC0402FR-07240KL	Digikey
RC0402FR-071ML	Digikey
MJTP1117	Digikey
TPS73633DBVR	Digikey
B39162B9416K610	Digikey
MAX2659ELT+T	Mouser
RECE.20279.001E.01	Digikey
SN65DSI83TPAPRQ1	Digikey
SC20-A	Quectel
M24C04-FDW6TP	Digikey
LSM303AGRTR	Mouser
MPL3115A2R1	Digikey
LTR-308ALS-01	Digikey
L3GD20HTR	Digikey
SSM2306CPZ-R2	Arrow
AP7331-12WG-7	Digikey
AP7331-18WG-7	Digikey
AP2125K-2.8TRG1	Digikey
MIC2288YD5-TR	Digikey
TLV70225DBVR	Digikey
SY7201ABC	Avnet
PN7150B0HN/C11002Y	Digikey
TLV62585RWTR	Digikey
STM32F030C8T6TR	Digikey
MAX803SQ293D3T1G	Arrow
TS3A5223RSWR	Digikey
SN74AVC4T774RSVR	Digikey
NX5P2090UKZ	Digikey
LTC4015EUHF#PBF	Digikey
LT8612EUDE#TRPBF	Digikey
SG-210STF 27.0000ML0	Digikey
NX2016SA-27.12MHZ-EXS00A-CS06346	Digikey
ABLS-12.000MHZ-B2-T	Arrow