

HKS-1MU						
item	Name	Description	Part Number	Manufacture	unit	Placement
1	EK810 PCB	50mm*28mm	EK810 MB 101		1	
2	LTE	32mm*29mm	EG25-G	Quectel	1	U401
3	bt	BLE 5.0 CYBT-343026-01	CYBT-343026-01	CYPRESS	1	U301
4	MCU	32bits 单片机	STM32F103RCT6	ST	1	U503
5	IC	UM3204		Union	1	U402
6	MEMORY	NOR FLASH SOP8 256Mb, 3V,	MX25L25645GM2I-10G	MXIC	1	U501
7	DC/DC	DC/DC 2.5A 40V	TPS54240	TI	1	U101
8	FUSE	0603 3A	0467003 • NRHF	Littlefuse	1	F101
9	Charge IC	MP2617	MP2617BGL	MPS	1	U102
10	LDO	LDO output 3.3V IC	XC6504A331MR	TOREX	2	U302 U505
11	Battery Connector	SMD 3PIN 1.25mm			1	J109
12	G Sensor	BMA253		BOSCH	1	U502
13	SIM Socket	NANO-SIM Socket	SNO-1305-B	shuofang	1	J701
14	pogo PIN	2pin, L=6mm 3.0mm	PGC1.5-TH(6.0)-R-2P-3.0PH		1	J401
15	Inductor	4.7UH	MCSM52Z4R7MWTPG	MAGIC	1	L101
16	Inductor	MS42 ,1.5UH	MCSM42Z1R5M	MAGIC	1	L102
17	Inductor	6.8uH,	74404032068	Wurth	1	D102
18	3D Sensor	AK09970N,	AK09970N	AKM	1	U801
19	NPN	NPN SOT-523	BC846AW,135	NXP	9	Q201 Q202 Q203 Q205 Q401 Q402 Q403 Q404 Q405
20	key	4X4X1.5mm			1	J203
21	Diodes	SK34	SK34		1	D103
22	P-MOS	SOT23	SSF2301		1	Q407

23	LED	0603 red	19-217/R6C-AL1M2VY/3T	Everlight	1	LED203
24	LED	0603 yellow	19-217/Y5C-AM1N1VY/3T	Everlight	1	LED202
25	LED	0603 green	19-217/G7C-AN1P2/3T	Everlight	1	LED201
26	crystal	16MHz +/-ppm pF 3225	7U0160000120	SJK	1	X502
27	crystal (32.768KHZ)	FC-135 32.768KHZ 20ppm 12.5pF	7L32768	SJK	1	X501
28	capacitor	Chip Low Profile tantalum_220 uF_ ϕ 20% X5R 10V	T520B227M006ATE045	KEMET	2	C407 C411
29	capacitor	10pF $\pm$ 5% 50V 5% NPO 0402	GRM1555C1H100JA01D	MURATA	4	C401 C405 C508 C509
30	capacitor	Chip Capacitor_22 pF_ $\pm$ 5%_NPO_50 V 0402 MURATA	GRM1555C1H220JZ01D	MURATA	12	C201 C202 C302 C306 C402 C406 C510 C511 C701 C702 C703 C814
31	capacitor	Chip Capacitor_4700 pF $\pm$ 5% 50 V 0402	GRM155R71H472KA01D	MURATA	1	C105
32	capacitor	Chip Capacitor_1.00 nF_ $\pm$ 10%_X5R_50 V 0402	GRM155R71H102KA01D	MURATA	1	C103
33	capacitor	Chip Capacitor_100 nF_ $\pm$ 10%_X5R_16 V_0402	GRM155R71C104KA88D	MURATA	18	C104 C107 C110 C120 C203 C205 C213 C403 C404 C408 C409 C502 C503 C518 C520 C704 C801 C803
34	capacitor	Chip Capacitor_220 nF_ $\pm$ 10%_X5R_10 V 0402	GRM155R61A224KE19D	MURATA	1	C804

35	capacitor	Chip Capacitor_1.00 uF_ ± 10% X5R 10 V 0402	GRM155R61A105KE15D	MURATA	13	C109 C301 C303 C304 C412 C501 C506 C512 C515 C516 C517 C802 C813
36	capacitor	Chip Capacitor_4.70 uF_± 10%_X5R_10 V 0603 MURATA	GRM188R61A475KE15D	MURATA	4	C108 C121 C410 C514
37	capacitor	Chip Capacitor_4.70 uF_± 10%_X5R_10 V_0603	CL10A475KP8NNNC	Samsung	0	C108 C121 C410 C514
38	capacitor	4.7UF, 1206, 50V.	GRM31CR71H475KA12L	MURATA	2	C101 D101
39	capacitor	0805 22UF 6.3V 20% X5R	CL21A226MQNNNE	Samsung	4	C106 C122 C305 C504
40	Inductor	8.2nH ±2% 0402	LQW15AN8N2G00D	MURATA	1	C416
41	ESD		ICVL0518100Y500FR	ICT	11	D104 D105 D201 D202 D204 D205 D206 D701 D702 D703 D704
42	ESD		LXES15AAA1-133	MURATA	0	D104 D105 D201 D202 D204 D205 D206 D701 D702 D703 D704
43	Resistor	RES, 0 Ohm ± 5%_1/10W_0402_YAGEO	RC0402JR-070R	YAGEO	8	R110 R116 R122 R411 R414 R516 R801 R812
44	Resistor	RES, 33 Ohm ± 5%_1/10W_0402_YAGEO	RC0402JR-0733R	YAGEO	15	R203 R204 R303 R304 R305 R306 R308 R309 R311 R601 R602 R806 R807 R808 R809
45	Resistor					
46	Resistor	1k Ohm ± 5%_1/10 W_0402_YAGEO	RC0402JR-071K	YAGEO	13	R114 R115 R211 R212 R215 R301 R307 R401 R501 R802 R804 R805 R810

47	Resistor	2k Ohm $\pm$ 5%_1/10 W_0402_YAGEO	RC0402JR-072K	YAGEO	3	R201 R208 R214
48	Resistor	4.7k Ohm $\pm$ 5%_1/10 W_0402_YAGEO	RC0402JR-074K7	YAGEO	21	R119 R202 R206 R209 R302 R403 R405 R408 R409 R412 R416 R418 R502 R504 R505 R506 R507 R509 R603 R813 R814
49	Resistor	RES, 8.2KOhm $\pm$ 1%_1/16W_0402_YAGEO		YAGEO	1	R117
50	Resistor	RES, 10kOhm $\pm$ 1%_1/16 W_0402_YAGEO	RC0402FR-0710K	YAGEO	7	R106 R108 R109 R402 R415 R514 R803
51	Resistor	15K Ohm $\pm$ 5% 1/10W 0402 YAGEO	RC0402JR-0715K	YAGEO	1	R701
52	Resistor	RES, 20kOhm $\pm$ 5% 1/16 W 0402 YAGEO	RC0402JR-0720K	YAGEO	3	R102 R107 R111
53	Resistor	RES, 33kOhm $\pm$ 1% 1/16W 0402 YAGEO		YAGEO	1	R118
54	Resistor	47K Ohm $\pm$ 5%_1/10W_0402_YAGEO	RC0402JR-0747K	YAGEO	8	R205 R207 R210 R404 R406 R407 R410 R417
55	Resistor	75K Ohm $\pm$ 5% 1/10W 0402 YAGEO	RC0402JR-0775K	YAGEO	1	R101
56	Resistor	RES, 100kOhm $\pm$ 5% 1/16 W 0402 YAGEO	RC0402JR-07100K	YAGEO	2	R103 R105
57	Resistor	RES, 150kOhm $\pm$ 1% 1/16 W 0402 YAGEO	RC0402FR-07150K	YAGEO	5	R104 R120 R121 R413 R419

58	4PIN Connector Cable	EK810 4PIN Cable			1	J201
59	4PIN Connector	4PIN DIP			1	J202
60	EK810 GPS Antenna	GPS Antenna 18*18*4mm	DAA1575R18C14_EK81 0		1	J403

HKL-1MU						
item	Name	Description	Part Number	Manufacturer	unit	Placement
1	EK810 PCB	50mm*28mm	EK810 MB_102		1	
2	LTE Module	32mm*29mm	EG25-G	Quectel	1	U401
3	BlutTooth	BLE 5.0 CYBT-343026-01	CYBT-343026-01	CYPRESS	1	U301
4	MCU	32bits	STM32F103RCT6	ST	1	U503
5	IC	UM3204		Union	1	U402
6	MEMORY	NOR FLASH SOP8 256Mb, 3V,	MX25L25645GM2I-10G	MXIC	1	U501
7	DC/DC	DC/DC 2.5A 40V	TPS54240	TI	1	U101
8	FUSE	0603 3A	0467003 • NRHF	Littlefuse	1	F101
9	Charger IC	MP2617	MP2617BGL	MPS	1	U102
10	CAN	TJA1051T/3, S08	TJA1051T/3 1J	NXP	1	U601
11	LDO	LDO output 3.3V IC	XC6504A331MR	TOREX	2	U302 U505
12	ESD	CAN BUS ESD SOT-323	PESD1CAN-U	NXP	1	ESD602
13	Battery Connector	SMD 3PIN 1.25mm			1	J109
14	G Sensor	BMA253		BOSCH	1	U502
15	SIM Socket	NANO-SIM Socket	SNO-1305-B	shuofang	1	J701
16	pogo PIN	2pin, L=6mm 3.0mm	PGC1.5-TH(6.0)-R-2P-3.0PH		1	J401
17	Inductor	4.7UH	MCSM52Z4R7MWTPG	MAGIC	1	L101
18	Inductor	MS42 ,1.5UH	MCSM42Z1R5M	MAGIC	1	L102
19	Inductor	6.8uH,	74404032068	Wurth	1	D102
20	NPN	NPN SOT-523	BC846AW,135	NXP	9	Q201 Q202 Q203 Q205 Q401 Q402 Q403 Q404 Q405
21	KEY	4X4X1.5mm			1	J203
22	Diodes	SK34	SK34		1	D103
23	P-MOS	SOT23	SSF2301		1	Q407

24	LED	0603 red	19-217/R6C-AL1M2VY/3T	Everlight	1	LED203
25	LED	0603 yellow	19-217/Y5C-AM1N1VY/3T	Everlight	1	LED202
26	LED	0603 green	19-217/G7C-AN1P2/3T	Everlight	1	LED201
27	crystal	16MHz +/-ppm pF 3225	7U0160000120	SJK	1	X502
28	crystal (32.768KHZ)	FC-135 32.768KHZ 20ppm 12.5pF	7L32768	SJK	1	X501
29	capacitor	Chip Low Profile tantalum_220 uF_ ϕ 20% X5R 10V	T520B227M006ATE045	KEMET	2	C407 C411
30	capacitor	10pF $\pm$ 5% 50V 5% NPO 0402	GRM1555C1H100JA01D	MURATA	4	C401 C405 C508 C509
31	capacitor	Chip Capacitor_22 pF_ $\pm$ 5% NPO_50 V 0402 MURATA	GRM1555C1H220JZ01D	MURATA	11	C201 C202 C302 C306 C402 C406 C510 C511 C701 C702 C703
32	capacitor	Chip Capacitor_4700 pF $\pm$ 5% 50 V 0402	GRM155R71H472KA01D	MURATA	1	C105
33	capacitor	Chip Capacitor_1.00 nF_ $\pm$ 10%_X5R_50 V_0402	GRM155R71H102KA01D	MURATA	1	C103
34	capacitor	Chip Capacitor_100 nF_ $\pm$ 10%_X5R_16 V_0402	GRM155R71C104KA88D	MURATA	20	C104 C107 C110 C120 C203 C205 C213 C403 C404 C408 C409 C502 C503 C518 C520 C602 C603 C704 C801 C803

35	capacitor	Chip Capacitor_1.00 uF_± 10% X5R 10 V 0402	GRM155R61A105KE15D	MURATA	12	C109 C301 C303 C304 C412 C501 C506 C512 C515 C516 C517 C802
36	capacitor	Chip Capacitor_4.70 uF_± 10%_X5R_10 V 0603 MURATA	GRM188R61A475KE15D	MURATA	5	C108 C121 C410 C514 C601
37	capacitor	Chip Capacitor_4.70 uF_± 10%_X5R_10 V_0603	CL10A475KP8NNNC	Samsung	0	C108 C121 C410 C514 C601
38	capacitor	4.7UF, 1206, 50V.	GRM31CR71H475KA12L	MURATA	1	C101 D101
39	capacitor	0805 22UF 6.3V 20% X5R	CL21A226MQNNNE	Samsung	4	C106 C122 C305 C504
40	Inductor	8.2nH ±2% 0402	LQW15AN8N2G00D	MURATA	1	C416
41	ESD		ICVL0518100Y500FR	ICT	11	D104 D105 D201 D202 D204 D205 D206 D701 D702 D703 D704
42	ESD		LXES15AAA1-133	MURATA	0	D104 D105 D201 D202 D204 D205 D206 D701 D702 D703 D704
43	Resistor	RES, 0 Ohm ± 5%_1/10W_0402_YAGEO	RC0402JR-070R	YAGEO	8	R110 R116 R122 R411 R414 R516 R801 R812
44	Resistor	RES, 33 Ohm ± 5%_1/10W_0402_YAGEO	RC0402JR-0733R	YAGEO	15	R203 R204 R303 R304 R305 R306 R308 R309 R311 R601 R602 R806 R807 R808 R809
45	Resistor	1k Ohm ± 5%_1/10 W_0402_YAGEO	RC0402JR-071K	YAGEO	13	R114 R115 R211 R212 R215 R301 R307 R401 R501 R802 R804 R805 R810

46	Resistor	2k Ohm $\pm$ 5%_1/10 W_0402_YAGEO	RC0402JR-072K	YAGEO	3	R201 R208 R214
47	Resistor	4.7k Ohm $\pm$ 5%_1/10 W_0402_YAGEO	RC0402JR-074K7	YAGEO	21	R119 R202 R206 R209 R302 R403 R405 R408 R409 R412 R416 R418 R502 R504 R505 R506 R507 R509 R603 R813 R814
48	Resistor	RES, 8.2KOhm $\pm$ 1%_1/16W_0402_YAGEO	RC0402JR-078K2	YAGEO	1	R117
49	Resistor	RES, 10kOhm $\pm$ 1%_1/16 W_0402_YAGEO	RC0402FR-0710K	YAGEO	7	R106 R108 R109 R402 R415 R514 R803
50	Resistor	15K Ohm $\pm$ 5% 1/10W 0402 YAGEO	RC0402JR-0715K	YAGEO	1	R701
51	Resistor	RES, 20kOhm $\pm$ 5% 1/16 W 0402 YAGEO	RC0402JR-0720K	YAGEO	3	R102 R107 R111
52	Resistor	RES, 33kOhm $\pm$ 1% 1/16W 0402 YAGEO	RC0402JR-0733K	YAGEO	1	R118
53	Resistor	47K Ohm $\pm$ 5%_1/10W_0402_YAGEO	RC0402JR-0747K	YAGEO	8	R205 R207 R210 R404 R406 R407 R410 R417
54	Resistor	75K Ohm $\pm$ 5% 1/10W 0402 YAGEO	RC0402JR-0775K	YAGEO	1	R101
55	Resistor	RES, 100kOhm $\pm$ 5% 1/16 W 0402 YAGEO	RC0402JR-07100K	YAGEO	2	R103 R105
56	Resistor	RES, 150kOhm $\pm$ 1% 1/16 W 0402 YAGEO	RC0402FR-07150K	YAGEO	5	R104 R120 R121 R413 R419

58	4PIN Connector Cable	EK810 4PIN Cable			1	J201
59	4PIN Connector	4PIN DIP			1	J202
60	EK810 GPS Antenna	GPS Antenna 18*18*4mm	DAA1575R18C14_EK81 0		1	J403

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item	Name	Description	Part Number	Manufacture	unit	Placement
1	EK810 PCB	50mm*28mm	EK810 MB 102		1	
2	LTE	32mm*29mm	EG25-G	Quectel	1	U401
3	BT	BLE 5.0 CYBT-343026-01	CYBT-343026-01	CYPRESS	1	U301
4	MCU	32bits	STM32F103RCT6	ST	1	U503
5	IC	UM3204		Union	1	U402
6	MEMORY	NOR FLASH SOP8 256Mb, 3V,	MX25L25645GM2I-10G	MXIC	1	U501
7	DC/DC	DC/DC 2.5A 40V	TPS54240	TI	1	U101
8	FUSE	0603 3A	0467003 • NRHF	Littlefuse	1	F101
9	充电芯片	MP2617	MP2617BGL	MPS	1	U102
10	CAN	TJA1051T/3, S08封装	TJA1051T/3 1J	NXP	1	U601
11	LDO	LDO output 3.3V IC	XC6504A331MR	TOREX	2	U302 U505
12	ESD	CAN BUS ESD SOT-323	PESD1CAN-U	NXP	1	ESD602
13	Battery Connector	SMD 3PIN 1.25mm			1	J109
14	G Sensor	BMA253		BOSCH	1	U502
15	Inductor	4.7UH	MCSM52Z4R7MWTPG	MAGIC	1	J701
16	Inductor	MS42 , 1.5UH	MCSM42Z1R5M	MAGIC	1	J401
17	Inductor	6.8uH,	74404032068	Würth	1	L101
18	NPN	NPN SOT-523	BC846AW,135	NXP	1	L102
19	KEY	4X4X1.5mm			1	D102
20	Diodes	SK34	SK34		9	Q201 Q202 Q203 Q205 Q401 Q402 Q403 Q404 Q405
21	KEY	4X4X1.5mm			1	J203
22	Diodes	SK34	SK34		1	D103
23	P-MOS	SOT23	SSF2301		1	Q407

24	LED	0603 red	19-217/R6C-AL1M2VY/3T	Everlight	1	LED203
25	LED	0603 yellow	19-217/Y5C-AM1N1VY/3T	Everlight	1	LED202
26	LED	0603 green	19-217/G7C-AN1P2/3T	Everlight	1	LED201
27	crystal	16MHz +/-ppm pF 3225	7U0160000120	SJK	1	X502
28	crystal (32.768KHZ)	FC-135 32.768KHZ 20ppm 12.5pF	7L32768	SJK	1	X501
29	capacitor	Chip Low Profile tantalum_220 uF_ ϕ 20% X5R 10V	T520B227M006ATE045	KEMET	2	C407 C411
30	capacitor	10pF $\pm$ 5% 50V 5% NPO 0402	GRM1555C1H100JA01D	MURATA	4	C401 C405 C508 C509
31	capacitor	Chip Capacitor_22 pF_ $\pm$ 5%_NPO_50 V 0402 MURATA	GRM1555C1H220JZ01D	MURATA	11	C201 C202 C302 C306 C402 C406 C510 C511 C701 C702 C703
32	capacitor	Chip Capacitor_4700 pF $\pm$ 5% 50 V 0402	GRM155R71H472KA01D	MURATA	1	C105
33	capacitor	Chip Capacitor_1.00 nF_ $\pm$ 10%_X5R_50 V 0402	GRM155R71H102KA01D	MURATA	1	C103
34	capacitor	Chip Capacitor_100 nF_ $\pm$ 10%_X5R_16 V_0402	GRM155R71C104KA88D	MURATA	20	C104 C107 C110 C120 C203 C205 C213 C403 C404 C408 C409 C502 C503 C518 C520 C602 C603 C704 C801 C803

35	capacitor	Chip Capacitor_1.00 uF_± 10% X5R 10 V 0402	GRM155R61A105KE15D	MURATA	12	C109 C301 C303 C304 C412 C501 C506 C512 C515 C516 C517 C802
36	capacitor	Chip Capacitor_4.70 uF_± 10%_X5R_10 V 0603 MURATA	GRM188R61A475KE15D	MURATA	5	C108 C121 C410 C514 C601
37	capacitor	Chip Capacitor_4.70 uF_± 10%_X5R_10 V_0603	CL10A475KP8NNNC	Samsung	0	C108 C121 C410 C514 C601
38	capacitor	4.7UF, 1206, 50V.	GRM31CR71H475KA12L	MURATA	1	C101 D101
39	capacitor	0805 22UF 6.3V 20% X5R	CL21A226MQNNNE	Samsung	4	C106 C122 C305 C504
40	Inductor	8.2nH ±2% 0402	LQW15AN8N2G00D	MURATA	1	C416
41	ESD		ICVL0518100Y500FR	ICT	11	D104 D105 D201 D202 D204 D205 D206 D701 D702 D703 D704
42	ESD		LXES15AAA1-133	MURATA	0	D104 D105 D201 D202 D204 D205 D206 D701 D702 D703 D704
43	Resistor	RES, 0 Ohm ± 5%_1/10W_0402_YAGEO	RC0402JR-070R	YAGEO	8	R110 R116 R122 R411 R414 R516 R801 R812
44	Resistor	RES, 33 Ohm ± 5%_1/10W_0402_YAGEO	RC0402JR-0733R	YAGEO	14	R203 R204 R303 R304 R305 R306 R308 R309 R311 R602 R806 R807 R808 R809
45	Resistor	1k Ohm ± 5%_1/10 W_0402_YAGEO	RC0402JR-071K	YAGEO	13	R114 R115 R211 R212 R215 R301 R307 R401 R501 R802 R804 R805 R810

46	Resistor	2k Ohm $\pm$ 5%_1/10 W_0402_YAGEO	RC0402JR-072K	YAGEO	3	R201 R208 R214
47	Resistor	4.7k Ohm $\pm$ 5%_1/10 W_0402_YAGEO	RC0402JR-074K7	YAGEO	21	R119 R202 R206 R209 R302 R403 R405 R408 R409 R412 R416 R418 R502 R504 R505 R506 R507 R509 R603 R813 R814
48	Resistor	RES, 8.2KOhm $\pm$ 1%_1/16W_0402_YAGEO		YAGEO	1	R117
49	Resistor	RES, 10kOhm $\pm$ 1%_1/16 W_0402_YAGEO	RC0402FR-0710K	YAGEO	7	R106 R108 R109 R402 R415 R514 R803
50	Resistor	15K Ohm $\pm$ 5% 1/10W 0402 YAGEO	RC0402JR-0715K	YAGEO	1	R701
51	Resistor	RES, 20kOhm $\pm$ 5% 1/16 W 0402 YAGEO	RC0402JR-0720K	YAGEO	3	R102 R107 R111
52	Resistor	RES, 33kOhm $\pm$ 1% 1/16W 0402 YAGEO		YAGEO	1	R118
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55	Resistor	RES, 100kOhm $\pm$ 5% 1/16 W 0402 YAGEO	RC0402JR-07100K	YAGEO	2	R103 R105
56	Resistor	RES, 150kOhm $\pm$ 1% 1/16 W 0402 YAGEO	RC0402FR-07150K	YAGEO	5	R104 R120 R121 R413 R419

57	4PIN Connector Cable	EK810 4PIN Cable			1	J201
58	4PIN Connector	4PIN DIP			1	J202
59	EK810 GPS Antenna	GPS Antenna 18*18*4mm	DAA1575R18C14_EK81 0		1	J403