

Bill Of Materials


GPS/GSM Module Rev.1.1








The minimum set of components for GSM functionality and external 3.4V 2A power supply is given below:

Image	Position	Manufacturer part number/ Digikey part number	Comments	Unit price, USD	Qty	Extended price, USD
	CONN1	AWHW14G-0202-T-R HRP14H-ND	CONN HEADER LOW-PRO 14POS GOLD	0.97	1	0.97
	U1	Search on ebay.com, alibaba.com	SIM900D GSM module	27	1	27
	CONN4	CONSMA002 CONSMA002-ND	CONNECTOR FEMALE R/A PCB MT	3.48	1	3.48
	Q1,Q2	BC847C-TP BC847C-TPCT-ND	TRANS SS NPN 45V 100MA SOT23	0.33	2	0.66
	R2,R8	ERJ-8GEYJ473V P47KECT-ND	RES 47K OHM 1/4W 5% 1206 SMD	0.06	2	0.12
	R4,R9	RMCF1206JT4K70 RMCF1206JT4K70CT- ND	RES 4.7K OHM 1/4W 5% 1206 SMD	0.05	2	0.10
	R3	ERJ-8GEYJ181V P180ECT-ND	RES 180 OHM 1/4W 5% 1206 SMD	0.06	1	0.06
	LED1	LNJ411K8YRA P11528CT-ND	LED AMBER FACE UP 1206	0.51	1	0.51
	CONN3,CO NN6, CONN8,CO NN9 (optional); JP1,JP2,JP3	68016-436HLF 609-2227-ND	CONN HEADER 36POS .100 R/A TIN	1.55	1	1.55





	R5,R6,R7	RMCF1206JT22R0 RMCF1206JT22R0CT-ND	RES 22 OHM 1/4W 5% 1206 SMD	0.05	3	0.15
	To CONN4	TG.22.0112 931-1041-ND	ANT 5-BAND GSM DIPOLE	8.1	1	8.1
	D1	ESDA6V1W5 497-7228-1-ND	TRANSIL ARRAY DATA PROT SOT323-5	0.92	1	0.92
	C1	C1206C224K5RACTU 399-1251-1-ND	CAP .22UF 50V CERAMIC X7R 1206	0.26	1	0.26
	C7	B45197A2477K509 495-1537-1-ND	CAP TANT 470UF 10V 10% LOESR SMD	2.46	1	2.46
	C8	12065G105ZAT2A 478-1580-1-ND	CAP CERM 1UF 50V Y5V 1206	0.38	1	0.38
	CONN7	7111S2015X02LF 609-1401-1-ND	CONN SIM CARD 6PS .100 W/CVR SMD	1.61	1	1.61
	R1	RMCF1206JT10K0 RMCF1206JT10K0CT-ND	RES 10K OHM 1/4W 5% 1206 SMD	0.05	1	0.05
	To JP1,JP2,JP3	969102-0000-DA 3M9580-ND	SHUNT JUMPER . 1"BLACK GOLD	0.06	3	0.18

In case of using external 12V an onboard DC-DC converter will require the following components to be soldered as well:




Image	Position	Manufacturer part number/ Digikey part number	Comments	Unit price, USD	Qty	Extended price, USD
	U3	LM2596S-ADJ/NOPB LM2596S-ADJ-ND	IC REG SIMPLE SWITCHER TO-263-5	5.18	1	5.18

	D2	CDBC360-G 641-1122-1-ND	DIODE SCHOTTKY 3A 60V DO-214AB	0.8	1	0.8
	FB1	BLM41PG181SN1L 490-5230-1-ND	FERRITE CHIP 180 OHM 3000MA 1806	0.57	1	0.57
	L1	CDRH127/LDNP-101MC 308-1331-1-ND	INDUCTOR 100UH 2.1A SHIELD SMD	2.02	1	2.02
	R11	RMCF1206JT4K70 RMCF1206JT4K70CT- ND	RES 4.7K OHM 1/4W 5% 1206 SMD	0.05	1	0.05
	R10	RMCF1206JT10K0 RMCF1206JT10K0CT- ND	RES 10K OHM 1/4W 5% 1206 SMD	0.05	1	0.05
	C2	12065G105ZAT2A 478-1580-1-ND	CAP CERM 1UF 50V Y5V 1206	0.38	1	0.38
	C3	TAJE107K020RNJ 478-1746-1-ND	CAP TANTALUM 100UF 20V 10% SMD	3.08	1	3.08



Set of components for GPS functionality is given below:

Image	Position	Manufacturer part number/ Digikey part number	Comments	Unit price, USD	Qty	Extended price, USD
	CONN5	CONSMA002 CONSMA002-ND	CONNECTOR FEMALE R/A PCB MT	3.48	1	3.48
	To CONN5	AA.105.301111 931-1000-ND	ANTENNA GPS MAGNETIC BASE	12.96	1	12.96
	CONN2	9-146282-0-12 A34253-12-ND	CONN HDR BRKWAY . 100 12POS VERT	1.04	1	1.04
	U2	Product code GPS- 07951 on sparkfun.com	Copernicus GPS module	44.95	1	44.95

Set of components required for onboard power 3.3V supply for GPS receiver (if no external 3.3V voltage is present):

Image	Position	Manufacturer part number/ Digikey part number	Comments	Unit price, USD	Qty	Extended price, USD
	U4	MAX1724EZK33+T MAX1724EZK33+TCT-ND	IC CONV DC-DC STPUP 3.3 TSOT23-5	3.70	1	3.70
	L4	NLV32T-100J-PF 445-1523-1-ND	INDUCTOR POWER 10UH 1210	0.21	1	0.21
	C9,C10	TPSA106M010R1800 478-4086-1-ND	CAP TANT LOWESR 10UF 10V 20% SMD	0.38	2	0.76

Set of components required for external microphone connection:

Image	Position	Manufacturer part number/ Digikey part number	Comments	Unit price, USD	Qty	Extended price, USD
	C4,C5,C6	CC1206JRNP09BN470 311-1158-1-ND	CAP CERAMIC 47PF 50V NP0 1206	0.161	3	0.48
	L2,L3	B82422A3101K100 495-1708-1-ND	INDUCTOR .10UH 440MA 1210 10%	0.47	2	0.94