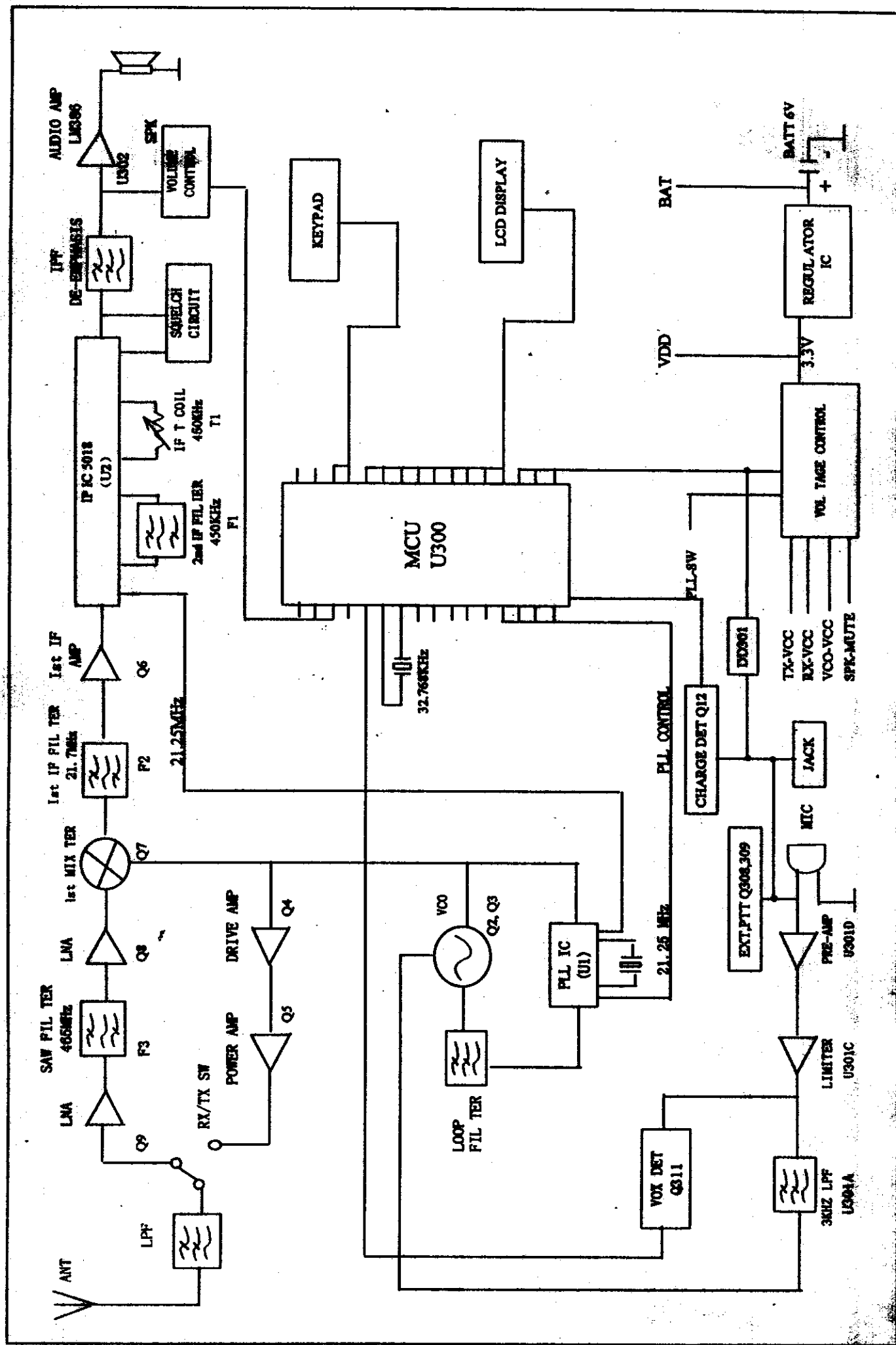


Bill Of Materials for 1031-0. sch on Thu Jan 10 19:02:59 2002

Item	Qty	Reference	VALUE
1	1	U300	EM78P567
2	1	BAT1	1.5VX4 CELL
3	2	C6 C60	0.5p
4	19	C21 C24 C28-30 C38-39 C43 C47 C54 C56 C58 C65 C74 C305 C311-312 C334 C354	102
5	9	C33 C36 C44 C48 C55 C310 C328 C331 C337	103
6	15	C1 C9 C42 C45-46 C50 C303 C307 C319 C324-325 C332 C336 C338 C352	104
7	5	C2 C34 C320 C326 C345	105
8	4	C15 C17 C68 C73	10p
9	2	C315 C323	120p
10	2	C12 C71	12p
11	1	C25	15p
12	1	C342	183
13	1	C31	18p
14	1	C13	1p
15	1	C22	1p5
16	1	C66	20p
17	2	C314 C318	222
18	8	C300 C309 C313 C316-317 C329 C340 C344	223
19	1	C10	224
20	2	C57 C61	22p
21	1	C343	272
22	2	C26 C53	27p
23	1	C78	2p
24	2	C301-302	30p
25	1	C322	332
26	1	C327	393
27	1	C5	39p
28	2	C23 C79	3p
29	3	C51-52 C353	470P
30	3	C7 C80 C341	472
31	1	C62	473
32	6	C3-4 C11 C19 C27 C40	47p
33	1	C16	4p
34	1	C59	5p
35	1	C346	683
36	1	C70	6p
37	3	C18 C37 C67	7p
38	2	C64 C77	9p
39	2	C69 C72	NC
40	3	C14 C32 C63	XXX
41	1	SW6	CALL
42	1	SW4	DOWN
43	1	SW8	LAMP
44	1	SW2	MENU
45	1	SW3	MONITOR
46	1	SW7	POWER
47	1	SW1	PTT
48	1	SW9	SCAN
49	1	SW5	UP
50	1	C333	100u
51	2	C306 C321	10uF
52	1	C49	1uF
53	1	C35	220uF 10V

54	2	C41 C304	22u
55	1	C8	3u3
56	1	C339	47uF
57	3	C20 C330 C335	4u7
58	1	SPK1	LCD DISPLAY
59	1	D304	0
60	3	D2-4	KDS114
61	2	D1 D301	MCL4148
62	1	DD1	ISS364
63	1	DD300	MCL101CTS
64	2	DD302-303	MCL103B
65	1	X1	21M25
66	1	X300	32.768K
67	1	F2	21M7
68	1	F1	450HT
69	1	F3	F465A
70	1	T1	450T
71	1	J1	JACK
72	1	L11	10n
73	1	L4	12n
74	1	L7	1u
75	1	L8	1u5
76	2	L2-3	22n
77	3	L5 L13 L18	27n
78	1	L14	2T5
79	2	L10 L12	33n
80	5	L1 L6 L15-17	3T5
81	1	L9	47n
82	2	LED301-302	LCDLIGHT
83	1	LED300	TX/RED
84	1	U302	LM386
85	1	MIC300	WM-54BH
86	1	Q5	2SK3078
87	9	Q1 Q12 Q301-302 Q306-309 Q311	2SC1623
88	1	Q6	2SC2714
89	1	Q11	2SC4177
90	1	Q4	2SC4226
91	5	Q2-3 Q7-9	2SC5066
92	1	Q10	XXXXX
93	1	Q300	2SA1979SF
94	3	Q303-305	2SA1980S
95	3	R31 R47 R52	OR
96	4	R2 R15 R17 R356	10
97	2	R21 R45	100
98	9	R11 R32 R322 R325 R327-329 R332 R389	100K
99	5	R12 R22 R330 R345 R397	10K
100	3	R318 R324 R361	120K
101	1	R24	12K
102	3	R26 R40 R42	150
103	4	R39 R53 R55 R347	150K
104	2	R25 R354	15K
105	2	R342 R348	180K
106	2	R27 R341	18K
107	5	R3 R6-7 R28 R368	1K
108	1	R8	1K2
109	2	R36 R339	1K5
110	2	R336 R376	1M
111	1	R375	1M5
112	1	R388	200K
113	1	R319	20K
114	2	R20 R343	220

115	2	R33 R378	220K
116	4	R335 R344 R357 R370	22K
117	1	R51	22K (TR)
118	1	R57	240K
119	1	R38	270
120	11	R29 R300-304 R310-313 R323	270K
121	1	R367	27K
122	7	R18-19 R44 R46 R333 R362 R365	2K2
123	3	R58 R334 R352	2K7
124	2	R371 R390	300
125	1	R14	330
126	3	R50 R326 R385	330K
127	4	R1 R10 R320 R360	33K
128	1	R338	390K
129	4	R5 R13 R41 R59	3K3
130	1	R369	470
131	1	R34	470K
132	9	R48 R56 R337 R346 R359 R363-364 R366 R377	47K
133	1	R321	51K
134	1	R37	560
135	1	R355	56K
136	1	R349	5K1
137	4	R4 R340 R372 R386	5K6
138	9	R305-309 R314-317	620K
139	1	R358	680
140	1	R9	68K
141	1	R35	6K8
142	1	R353	7K5
143	1	R30	820
144	2	R16 R43	82K
145	3	R23 R350-351	8K2
146	3	R49 R54 R61	XXX
147	1	DD301	SDS2836
148	1	SPK300	U4016B05
149	1	U1	TB31202FN
150	1	U303	S-814 3V3
151	1	U301	324
152	1	U2	DBL5018V
153	1	VC1	30p
154	2	VD1-2	1SV270
155	1	VR1	10K



LETTER OF AGENCY

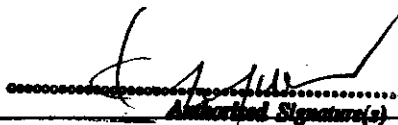
"I, an officer of Golden Source Electronics Limited do hereby authorize Intertek Testing Services to act on our behalf in front of the Federal Communications Commission with respect to all matters relating to certification of equipment under Part 95 and Part 15 of the FCC Rules until further notice."

I further certify that no party (as defined § 1.2002(b) of CFR 47, 1992) to this application, including myself, is subject to a denial of federal benefits, that includes FCC benefits, pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C., 853(a).

Dated this 15th January, 2002

BY:

For and on behalf of
GOLDEN SOURCE ELECTRONICS LTD.


Authorized Signature(s)

Signature

YUEN KAM YUK MAUREEN / DIRECTOR

Name / Title

Golden Source Electronics Limited

Company

(852) 2342 7211

Telephone

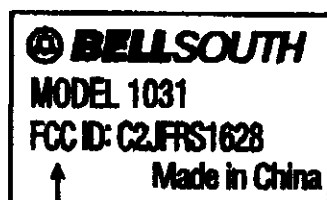
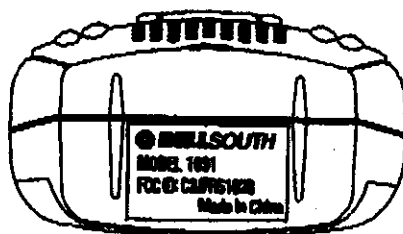


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FACTORY : DONGGUAN GOLDEN SOURCE ELECTRONICS CO., LTD.





22mm x 13mm

Model: 1031
Date: 29/1/02

Detail Test Item for Each Function

Model: 1031

Nov 1, 2001

Item	Test Function	Alignment Method	Equipment requirement
PCB			
	Enter Test Mode	1. push PTT and power buttons together to enter Test-mode program	Test fixture DC supply(0~15V)
1	LCD display (open short test)	1. Press power button to turn on the unit. 2. Use normal function to check icon and segment for LCD open short test.	Test Fixture DC supply(0~15V)
2	Current Consumption a. Stand by current b. RX Save ON current c. RX Save OFF current d. TX current	1. Set to test-mode, CH-1 2. Check RX Current (a) press [LAMP] button one time to test-mode RX ON (b) Check the RX Save ON current < 50mA (c) press [LAMP] button one more time to test-mode RX OFF (d) Check the RX Save OFF current < 1mA 3. Check TX current Press PTT to TX mode Check TX talk ON current < 300mA	Test Fixture DC supply(0~15V)
3	TX VCO RX VCO	1. Set to CH-14 and press PTT switch to TX mode (a) Adjust L1 to get 1V DC at test point TP7 (b) Release PTT switch to check RX VCO DC on CH-14 2. Set to CH-1 and press PTT switch (a) check CH-1 to DC voltage (b) release PTT switch and check RX VCD DC on CH-1	Test Fixture DC supply(0~15V) Digital Multi-meter (for DC voltage test)
4	TX part a. TX power b. TX Frequency	1. Set to CH-7 and Press PTT switch to TX mode (a) Check transmit power within 16.4dBm (ERP) 2. Set to CH-1 and press PTT switch to TX mode (a) Adjust VC1 to get $462.5625 \pm 300\text{Hz}$ on CH-1 3. Set to CH-14 and press PTT switch to TX mode (a) Check the frequency around $467.7125\text{MHz} \pm 300\text{Hz}$	Test Fixture DC supply(0~15V) RF Power Meter -LODESTAR-340
5	TX Modulation & Distortion	1. Maximum Deviation (a) Output 80 mV 1KHz audio signal to Mic input and press [PTT] switch. (b) Check maximum deviation is around 2.2KHz 2. Normal Deviation (a) Output 8 mV 1KHz audio signal Mic input and press [PTT] switch (b) Check normal deviation is around 1.5KHz 3. Check TX audio distortion < 5%	Test Fixture DC supply(0~15V) Audio Signal Generator Modulation Analyzer(1) (HP 8901B) -test function as -TX deviation -TX audio distortion
6	RX part a. RX Alignment b. RX distortion c. RX Current d. RX Sensitivity	1. Set to CH-4 2. Set RF signal generator to -50dBm with 1.5KHz modulation signal 3. Adjust T1 to get minimum distortion 4. Check audio distortion < 5% 5. Check audio output > 100mV at TP4 6. Check RX current < 70mA 7. Set RF signal generator output level to -118dBm on TP9 8. Check SINAD sensitivity $\leq -118\text{dBm}/12\text{db SINAD}$ on TP4 9. Repeat procedure 6.4 to 6.8 action on CH-11	Test Fixture DC supply(0~15V) Shield Room(1) RF Signal Generator(1) (HP 8656B) -test function as -output RF signal -output modulation signal Audio Analyzer(1) (HP8903B) -test function as -SINAD reading Digital Multi-meter -for RX current test

7	RX Audio SQ detection	1. Set to CH-7 2. Set RF signal generator to -50dBm with 1.5KHz modulation signal 3. Adjust T1 to get minimum distortion 4. Check audio output > 100mV at TP4 5. Audio Level (a) Set RF SG level to -50dBm with 1.5KHz deviation at 1KHz audio frequency (b) Adjust volume button to the position, which give an output $200\text{mV} \pm 5\text{mV}$ at TP4 6. Maximum and Minimum audio output power (a) Set RF SG level to -50dBm with 1.5KHz deviation at 1KHz audio frequency (b) Adjust volume to the position, which give a maximum output with distortion 10% (c) Check the voltage at TP4 = $1\text{V} \pm 100\text{mV}$ (d) Set maximum audio output to 0 dB, adjust the volume to the position, which give a minimum output (e) Check the minimum voltage -35 dB ± 5 dB at TP4 7. Set to CH-4 (a) Set signal generator to -119dBm with 1.5KHz deviation, 1KHz tone (b) Adjust VR1 for 7 to 8 dB SINAD (c) Check low sensitivity side 8 to 12 dB SINAD (d) Check high sensitivity side 4 to 7 dB SINAD 8. Repeat 7.7 (a) on CH-11	Test Fixture DC supply(0~15V) Shield Room (2) RF Signal Generator(2) (HP 8656B) -test function as -output RF signal -output modulating signal Audio Analyzer(2) (HP 8903B, op 011 or 051) -test function as -audio level -distortion -audio bandwidth frequency and level measurement Oscilloscope
8	Battery Detection	1. Low battery 4.12V(speaker output beep tone and LCD flash) 2. Dead battery 3.79V	Test Fixture DC supply(0~15V) Multi-voltage output equipment (self-made)

Casing

1	Current Consumption	1. Press POWER to turn on the unit 2. Press POWER to turn off the unit (a) Check off mode current < 350uA 3. Set Test-mode RX (a) Check the RX SCAN ON current < 30mA (b) Check the RX SCAN OFF current < 1mA 4. TX current (a) press PTT button and check TX current	Fix unit Fixture DC supply(0~15V) Multi-Meter (for current test)
2	TX Frequency TX Power TX Audio	1. Set to CH-1 and press PTT switch to TX mode (a) Check the frequency=$462.5625\text{MHz} \pm 300\text{Hz}$ 2. Set to CH-14 and press PTT switch to TX mode (a) Check the frequency=$467.7125\text{MHz} \pm 300\text{Hz}$ 3. Check the radiated power reference to Golden Sample 4. Standard TX deviation (a) Set unit to CH-4 (b) Put checked unit on test fixture, make sure the unit mic is face to fixture speaker to get maximum pick up audio signal (c) press PTT switch to TX mode, unit can pick up the audio sound level from test fixture's speaker (d) check the normal TX deviation at a range of 1.5KHz that should compare to Golden Sample (e) check the maximum TX deviation at a range of 2.2KHz	Special Test Fixture DC supply(0~125V) Audio Signal Generator Frequency Country -HOODT CN-201A Spectrum Analyzer(1 end) (HAMEG HM5010) -test function as -radiation output power -second harmonic -third harmonic Modulation Analyzer(2 end) (HP 8901B) -test function as -TX deviation -TX audio distortion

3	Squelch Detection	1. Set unit to CH-8 2. Set the distance of 0.3 meter between antenna of signal generator and checked unit 3. The antenna of signal generator and checked unit should be parallel to get max field strength power 4. Set RF signal generator to -90dBm with 1.5KHz deviation, 1KHz tone, make sure the unit still on squelch mute status (no voice can be heard) 5. Adjust RF signal generator to -85dBm, the will change to squelch off status(voice can be heard) 6. Repeat above action on CH-7	Fix unit fixture DC supply(0~15V) Shield Room(3) RF signal generator(3) (HP 8656B) -test function as -output RF signal Telescope Antenna
4	Audio RX Path	1. Set the unit CH-4 2. Plug the dummy speaker into audio jack 3. Check the radiated sensitivity reference to the Golden Sample 4. Audio level (a) Set RF SG level to -35dBm with 0.5KHz deviation at 1KHz audio frequency (b) Select volume to the position, which give an output $100\text{mV} \pm 5\text{mV}$ 5. Maximum and Minimum audio output power (a) Set RF SG level to -35dBm with 1.5KHz deviation at 1KHz audio frequency (b) Select volume to the position, which give an maximum output with distortion < 5% (1) Check the voltage on dummy speaker > 750mV (2) Check the voltage pick up from speaker (3) Compare the voltage difference between dummy speaker and speaker (c) Set maximum audio output to 0dB, adjust volume to the position, which give a minimum output (1) Check the voltage on dummy speaker > 350mV (2) Check the voltage pick up from speaker (3) Compare the voltage difference between dummy speaker and speaker	Special Test Fixture DC supply(0~15V) Shield Room(4 end) RF Signal Generator(4 end) (HP 8656B) -test function as -output RF signal -output modulation signal -audio bandwidth frequency level output Audio Analyzer(3 end) (HP8903B) -test function as -audio level -distortion -audio bandwidth frequency and level measurement Audio Amplifier (to pick op speaker 1KHz signal)
5	Battery Detection	1. Low battery 4.12V(speaker output beep tone and LCD flash) 2. Dead battery 3.79V	DC supply(0~15V) Multi-voltage output equipment(self-made)