



SERVICE MANUAL

GPS RECEIVER

MXG-5000

S-14710XZ-C1
Sep. 2010

Icom Inc.

INTRODUCTION

This service manual describes the latest technical information for the **MXG-5000** GPS RECEIVER, at the time of publication.

MODEL	VERSION
MXG-5000	EXP
	USA
	EUR

To upgrade quality, any electrical or mechanical parts and internal circuits are subject to change without notice or obligation.

CAUTION

NEVER connect the receiver to an AC outlet or to a DC power supply that uses more than specified. This will ruin the receiver.

DO NOT reverse the polarities of the power supply when connecting the receiver.

DO NOT apply an RF signal of more than 20 dBm (100 mW) to the antenna connector. This could damage the receiver's front-end.



ORDERING PARTS

Be sure to include the following four points when ordering replacement parts:

1. 10-digit Icom part number
2. Component name
3. Equipment model name and unit name
4. Quantity required

<ORDER EXAMPLE>

8900018230	OPC-1886	MXG-5000	CHASSIS UNIT	2 pieces
8510012351	2273 U-CASE-1	MXG-5000	CHASSIS UNIT	3 pieces

Addresses are provided on the inside back cover for your convenience.

REPAIR NOTES

1. Make sure that the problem is internal before disassembling the receiver.
2. **DO NOT** open the receiver until the receiver is disconnected from its power source.
3. **DO NOT** force any of the variable components. Turn them slowly and smoothly.
4. **DO NOT** short any circuits or electronic parts.
5. **DO NOT** keep power ON for a long time when the receiver is defective.

TABLE OF CONTENTS

SECTION	1	SPECIFICATIONS
SECTION	2	INSIDE VIEWS
SECTION	3	PARTS LIST
SECTION	4	MECHANICAL PARTS
SECTION	5	BOARD LAYOUTS
SECTION	6	BLOCK DIAGRAM
SECTION	7	VOLTAGE DIAGRAM

SECTION 1

SPECIFICATIONS

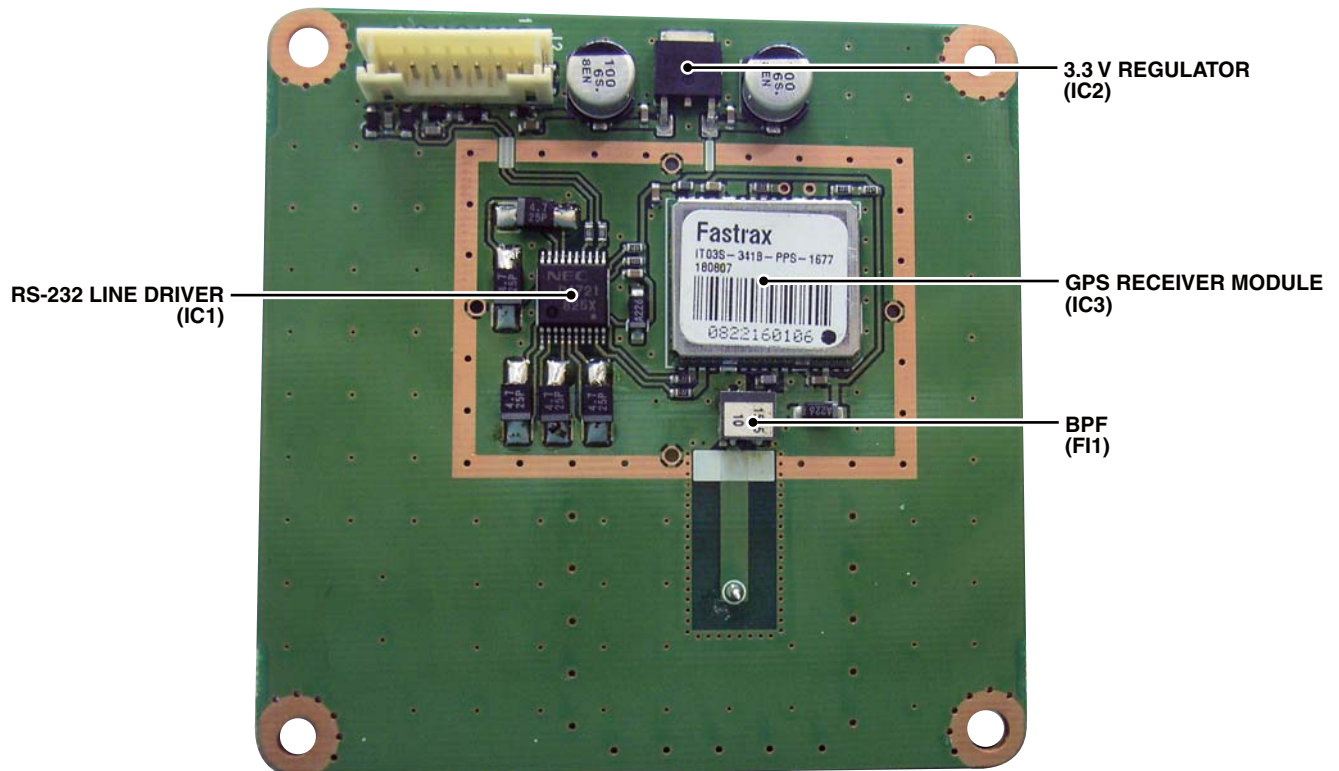
- Power supply voltage : 4.75 to 5.25 V DC (supplied from the MarineCommander™)
- Operating temp. range : -20°C to +60°C; -4°F to +140°F
- Relative humidity : Less than 95% (at +35°C; +95°F)
- Dimensions : 140(d)×157.2(H) mm; 5½(d)×6¾(H) in.
- Weight (approx.) : 710 g; 1.57 oz
- Cable length (approx.) : 10 m; 32 ft. 9¾ in.
- Receiving frequency : 1575.42 MHz
- Receiving channels : 12
- Receiving codes : L1, C/A-code, SPS
- Satellite differential type : WAAS, EGNOS, MSAS
- TTFF (Time to First Fix)
 - Cold start (typical) : 40 sec.
 - Hot start (typical) : 4 sec.

All stated specifications are subject to change without notice or obligation.

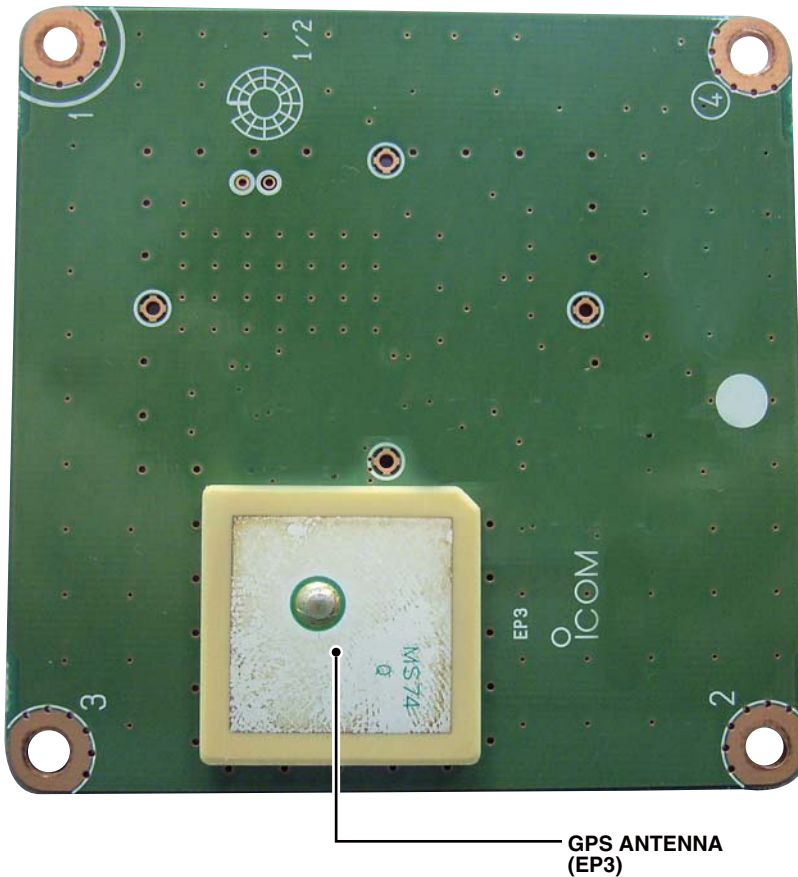
SECTION 2

INSIDE VIEWS

• MAIN UNIT (TOP VIEW)



• MAIN UNIT (BOTTOM VIEW)



SECTION 3

PARTS LIST

[MAIN UNIT]

REF NO.	PARTS NO.	DESCRIPTION	M.	H/V LOCATION
IC1	1120002951	S.IC UPD4721GS-GJG-A	T	28.5/30.0
IC2	1180002020	S.REG BA033FP-E2	T	8.0/41.0
IC3	1190002581	S.IC ITRAX03S1/IT03S341EPPS1677<MRF	T	27.0/48.5
D1	1730002331	S.ZEN MAZ8100GML	T	10.8/20.2
D2	1730002331	S.ZEN MAZ8100GML	T	10.8/16.7
D3	1730002331	S.ZEN MAZ8100GML	T	11.5/13.8
D4	1730002331	S.ZEN MAZ8100GML	T	11.5/10.4
D5	1790001711	S.DIO NNCD5.6C-T1-A	T	10.5/25.1
FI1	2020002550	S.DIE TDFM2A-1575A-10A	T	40/46.7
R1	7030003200	S.RES ERJ3GEYJ 100 V (10)	T	22.3/31.5
R2	7030003200	S.RES ERJ3GEYJ 100 V (10)	T	22.3/32.8
R3	7030003560	S.RES ERJ3GEYJ 103 V (10K)	T	25.0/35.9
R4	7030003560	S.RES ERJ3GEYJ 103 V (10K)	T	23.7/35.9
R5	7030003360	S.RES ERJ3GEYJ 221 V (220)	T	17.6/56.2
R6	7030003360	S.RES ERJ3GEYJ 221 V (220)	T	36.4/40.5
R7	7030003360	S.RES ERJ3GEYJ 221 V (220)	T	37.7/40.5
R8	7030003360	S.RES ERJ3GEYJ 221 V (220)	T	17.5/48.2
R9	7030003520	S.RES ERJ3GEYJ 472 V (4.7K)	T	17.6/59.0
C1	4550007960	S.TAN TEESVB2 1E 475M8R	T	38.6/24.5
C2	4550007090	S.TAN TEESVA 1A 226M8R	T	30.1/36.2
C3	4030006900	S.CER C1608 JB 1H 103K-T	T	26.3/35.9
C4	4550007960	S.TAN TEESVB2 1E 475M8R	T	38.6/28.6
C5	4550007960	S.TAN TEESVB2 1E 475M8R	T	38.6/32.4
C6	4550007960	S.TAN TEESVB2 1E 475M8R	T	27.7/23.7
C7	4550007960	S.TAN TEESVB2 1E 475M8R	T	20.9/27.0
C8	4510009030	S.ELE EEE0JA101SP	T	8.0/32.5
C9	4030006900	S.CER C1608 JB 1H 103K-T	T	10.6/36.8
C10	4510009030	S.ELE EEE0JA101SP	T	8.0/49.5
C11	4030006900	S.CER C1608 JB 1H 103K-T	T	10.6/45.2
C13	4030007130	S.CER C1608 CH 1H 101J-T	T	12.5/16.4
C14	4030007130	S.CER C1608 CH 1H 101J-T	T	11.5/12.1
C15	4030006900	S.CER C1608 JB 1H 103K-T	T	11.9/25.8
C16	4030006900	S.CER C1608 JB 1H 103K-T	T	17.6/43.5
C17	4030006900	S.CER C1608 JB 1H 103K-T	T	36.4/53.7
C18	4550007090	S.TAN TEESVA 1A 226M8R	T	39.5/53.7
C19	4030006900	S.CER C1608 JB 1H 103K-T	T	18.4/37.9
C20	4030017810	S.CER C1608 CH 1H 102J-T	T	36.4/48.7
J2	6510018951	S.CON B7B-PH-SM4-TB(LF)(SN)	T	7.0/19.0
EP2	6910012350	S.BEA MMZ1608Y 102BT	T	17.6/40.7
EP3	6910019890	E.O #DAKC1575MS74T		

M.=Mounted side (T: Mounted on the Top side, B: Mounted on the Bottom side)
S.=Surface mount

SECTION 4

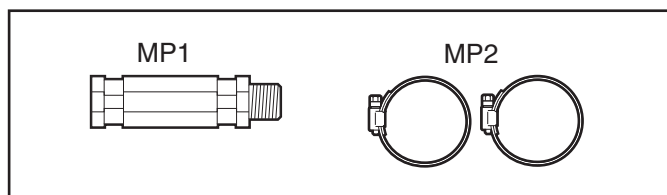
MECHANICAL PARTS

[CHASSIS PARTS]

REF NO.	ORDER NO.	DESCRIPTION	QTY.
W1	8900018230	OPC-1886 <LIA>	1
MP1	8510012340	2273 L-CASE	1
MP2	8930049320	2288 VENT.SHEET	1
MP3	8810008661	PHBT M3 X 8 NI-ZC3	4
MP11	8510012351	2273 U-CASE-1	1
MP13	8930049392	2273 MAIN SEAL-2 (TOT)	1
MP14	8820001210	2438 SCREW	4
MP15	8930052290	O-RING (AD) (TOP)	4

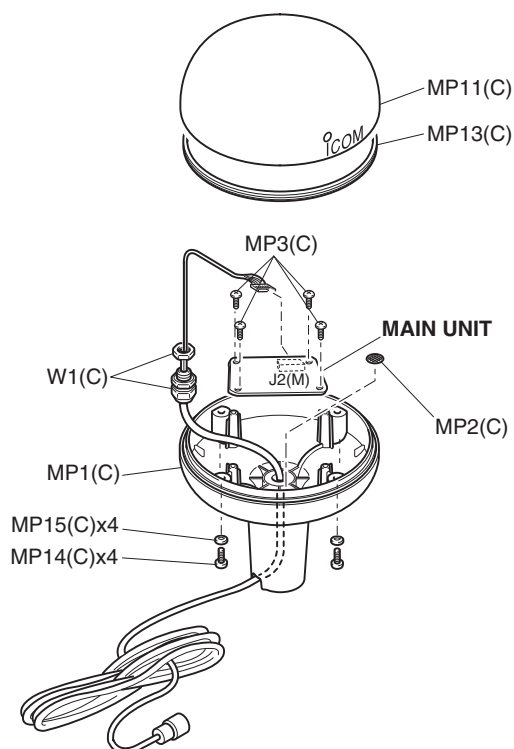
[ACCESSORIES]

REF NO.	ORDER NO.	DESCRIPTION	QTY.
MP1	8930049400	2273 PIPE	1
MP2	8930049740	HAS-40 (X-2272-3) STAINLESS BAND	2



[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	QTY.
J2*	6510018951	B7B-PH-SM4-TB (LF) (SN)	1

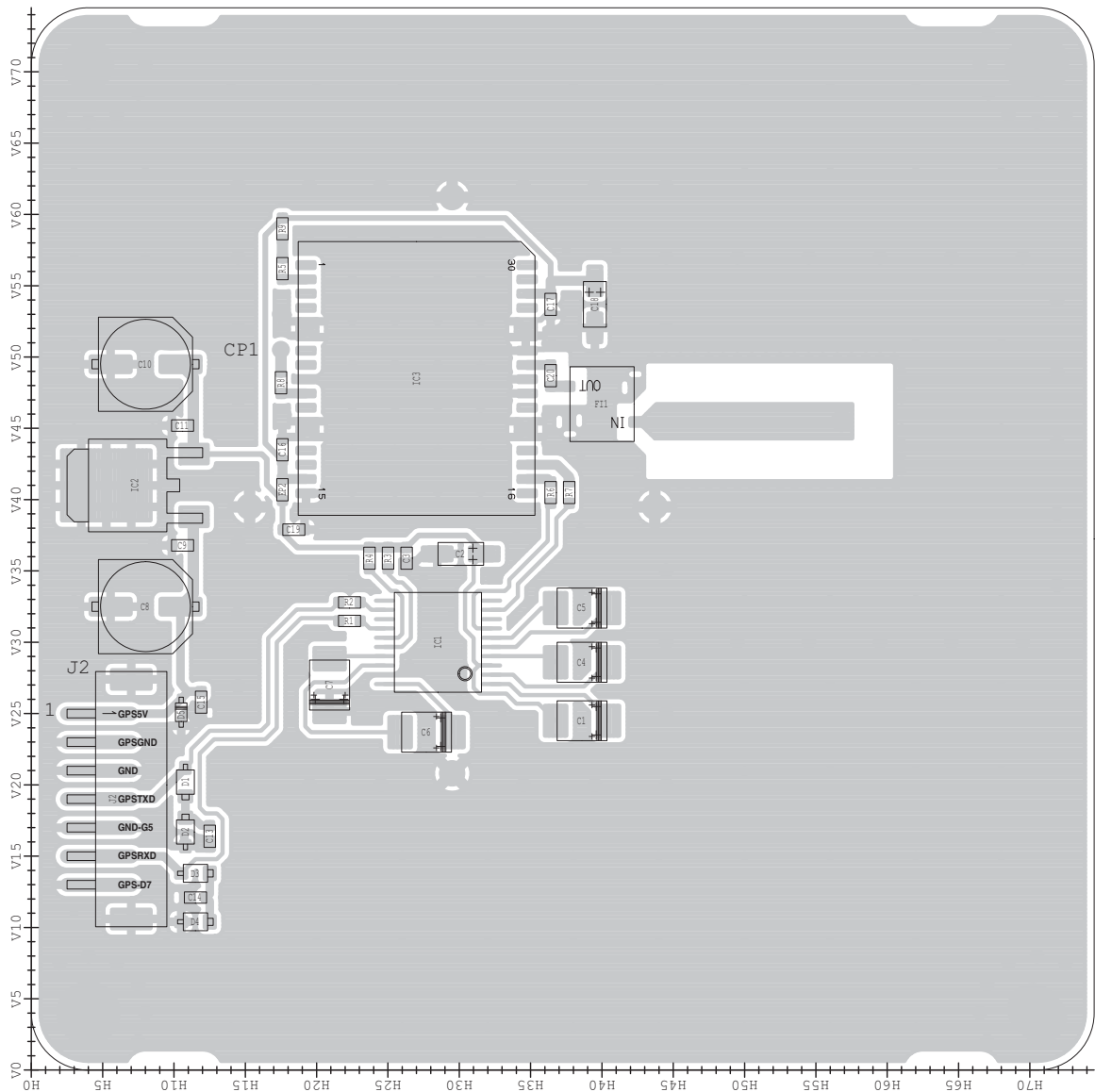


*: Refer to "BOARD LAYOUTS" for the location.

Screw abbreviations A, B0, BT: Self-tapping PH: Pan head ZK: Black NI-ZU: Nickel-Zinc SUS: Stainless

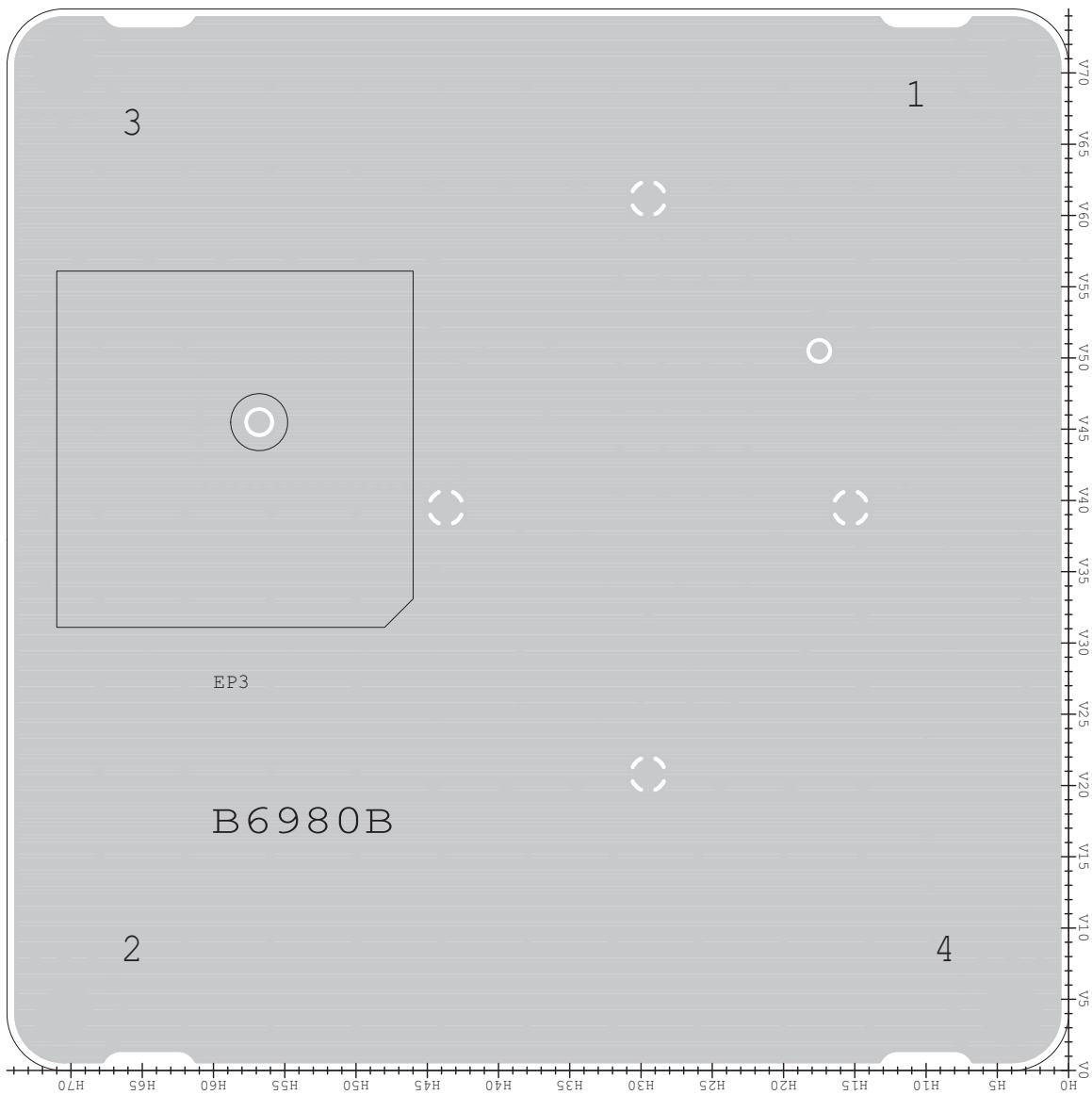
BOARD LAYOUTS

The combination of top side and bottom side of this page shows the actual configuration of P.C. board.



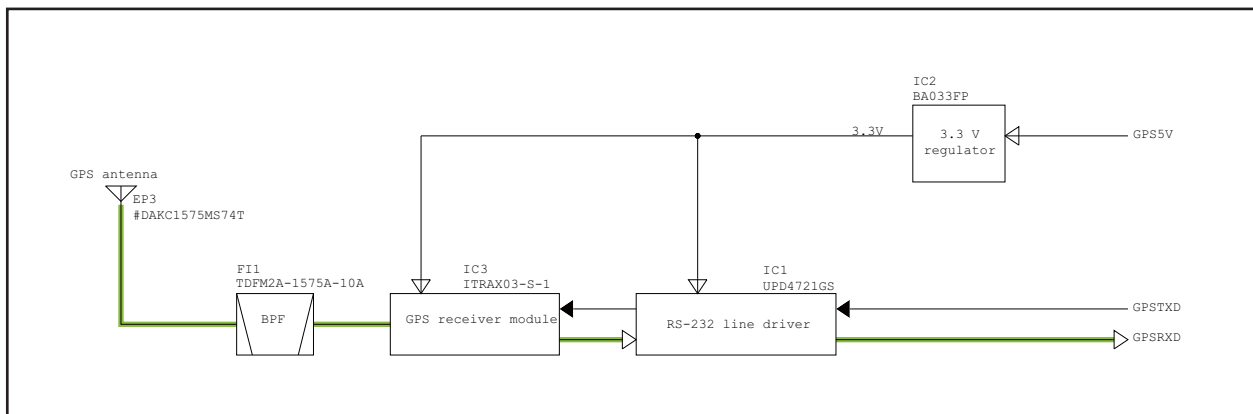
- **MAIN UNIT
(BOTOM VIEW)**

The combination of top side and bottom side of this page shows the actual configuration of P.C. board.



SECTION 6

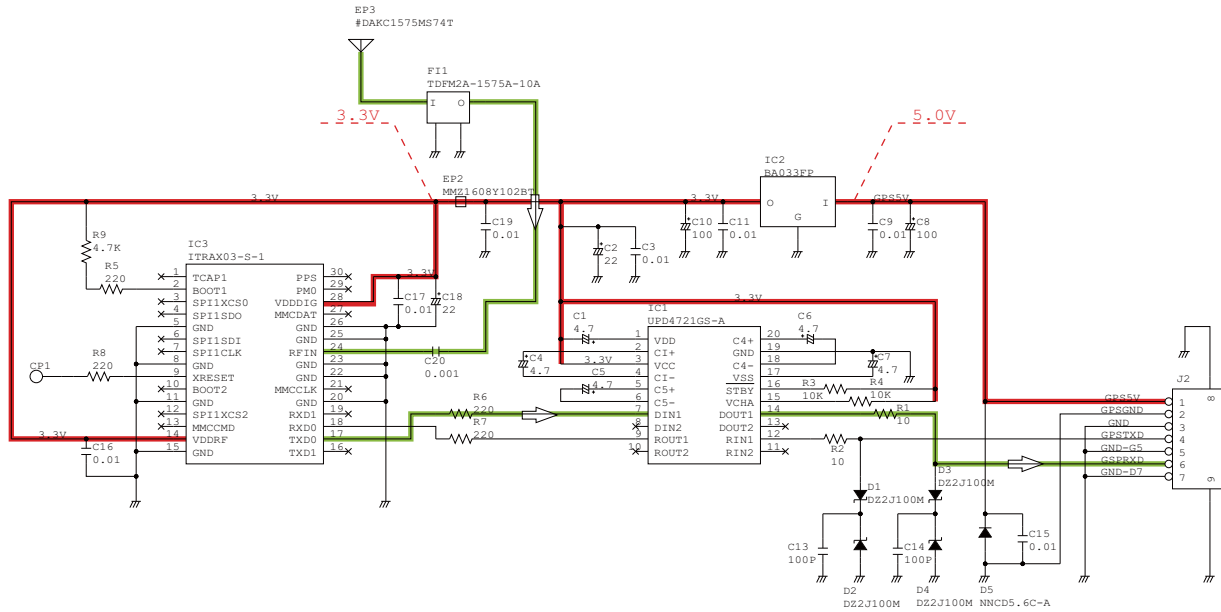
BLOCK DIAGRAM



SECTION 7

VOLTAGE DIAGRAM

• MAIN UNIT



Icom Inc.

1-1-32, Kamiminami, Hirano-ku, Osaka 547-0003, Japan
Phone : +81 (06) 6793 5302
Fax : +81 (06) 6793 0013
URL : <http://www.icom.co.jp/world/index.html>

Icom America Inc.

<Corporate Headquarters>
2380 116th Avenue N.E., Bellevue, WA 98004, U.S.A.
Phone : +1 (425) 454-8155 Fax : +1 (425) 454-1509
URL : <http://www.icomamerica.com>
E-mail : sales@icomamerica.com
<Customer Service>
Phone : +1 (425) 454-7619

Icom Canada

Glenwood Centre #150-6165
Highway 17 Delta, B.C., V4K 5B8, Canada
Phone : +1 (604) 952-4266 Fax : +1 (604) 952-0090
URL : <http://www.icomcanada.com>
E-mail : info@icomcanada.com

Icom (Australia) Pty. Ltd.

Unit 1 / 103 Garden Road, Clayton VIC 3168 Australia
Phone : +61 (03) 9549-7500 Fax : +61 (03) 9549-7505
URL : <http://www.icom.net.au>
E-mail : sales@icom.net.au

Icom New Zealand

146A Harris Road, East Tamaki,
Auckland, New Zealand
Phone : +64 (09) 274 4062 Fax : +64 (09) 274 4708
URL : <http://www.icom.co.nz>
E-mail : inquiries@icom.co.nz

Icom Polska

81-850 Sopot, ul. 3 Maja 54, Poland
Phone : +48 (58) 550 7135 Fax : +48 (58) 551 0484
E-mail : icompolska@icompolska.com.pl

Icom (Europe) GmbH

Communication Equipment
Auf der Krautweide 24
65812 Bad Soden am Taunus, Germany
Phone : +49 (6196) 76685-0 Fax : +49 (6196) 76685-50
URL : <http://www.icomeurope.com>
E-mail : info@icomeurope.com

Icom Spain S.L

Ctra. Rubí, No. 88 Bajos A 08174, Sant Cugat del Valles, Barcelona, Spain
Phone : +34 (93) 590 26 70 Fax : +34 (93) 589 04 46
URL : <http://www.icomspain.com>
E-mail : icom@icomspain.com

Icom (UK) Ltd.

Blacksole House, Altira Park, Herne Bay, Kent CT6 6GZ, UK
Phone : +44 (01227) 741741 Fax : +44 (01227) 741742
URL : <http://www.icomuk.co.uk>
E-mail : info@icomuk.co.uk

Icom France s.a.s.

Zac de la Plaine
1 Rue Brindejonc des Moulinais BP 5804
31505 Toulouse Cedex, France
Phone : +33 (5) 61 36 03 03 Fax : +33 (5) 61 36 03 00
URL : <http://www.icom-france.com>
E-mail : icom@icom-france.com

Asia Icom Inc.

6F No.68, Sec. 1 Cheng-Teh Road, Taipei, Taiwan, R.O.C.
Phone : +886 (02) 2559 1899 Fax : +886 (02) 2559 1874
URL : <http://www.asia-icom.com>
E-mail : sales@asia-icom.com

Count on us!