

Nov. 2008



# SERVICE MANUAL ADDENDUM

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**IC-F24/S IC-F25/S IC-F26/S IC-F26-L IC-F4018**

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## **CONTENTS**

|                       |    |
|-----------------------|----|
| PARTS LIST .....      | 1  |
| BOARD LAYOUTS .....   | 11 |
| VOLTAGE DIAGRAM ..... | 13 |

## PARTS LIST

## [ANT UNIT]

| REF NO. | PARTS NO.  | DESCRIPTION                     | M. | H/V LOCATION |
|---------|------------|---------------------------------|----|--------------|
| L601    | 6200013010 | S.COI 0.30-0.9-5TL 10.3N <COMO> | B  | 7.2/12.5     |
| C601    | 4030017600 | S.CER ECJ0EC1H080C              | B  | 5.8/15.3     |

## [CONNECT UNIT]

| REF NO. | PARTS NO.  | DESCRIPTION                 | M. | H/V LOCATION |
|---------|------------|-----------------------------|----|--------------|
| C501    | 4030017460 | S.CER ECJ0EB1E102K          | T  | 8.3/5.3      |
| C502    | 4030016930 | S.CER ECJ0EB1A104K          | T  | 9.3/5.3      |
| J501    | 6910016390 | CON IMSA-9230B-1-02Z145-PT1 |    |              |

## [MAIN UNIT]

| REF NO. | PARTS NO.   | DESCRIPTION                                    | M. | H/V LOCATION |
|---------|-------------|--|----|--------------|
| IC1     | 1110003201  | S.IC TA31136FNG(EL)                            | B  | 51.8/19      |
| IC2     | 11300008561 | S.IC TC75S51F(TE85L,F)                         | T  | 68.9/21      |
| IC4     | 1140005991  | S.IC MB15A02PFV1-G-BND-ERE1                    | T  | 38.3/35.7    |
| IC5     | 1110005340  | S.IC NJM12902V-TE1-#ZZZB                       | T  | 29.7/11.6    |
| IC6     | 1110005320  | S.IC NJM13403V-TE1-#ZZZB                       | T  | 15.9/34.6    |
| IC7     | 1110005330  | S.IC NJM12904V-TE1-#ZZZB                       | T  | 29.2/34.6    |
| IC8     | 1190000350  | S.IC M62363FP-650C                             | T  | 40.3/15.2    |
| IC9     | 1110005350  | S.IC NJM2870F05-TE1-#FZZB                      | B  | 84.2/14.2    |
| IC10    | 1130011770  | S.IC CD4066BPWR                                | T  | 22.9/34.6    |
| IC12    | 1110001811  | S.IC TA7368FG(5,ER)                            | T  | 89.3/13.2    |
| IC13    | 1140012721  | S.IC HD6433687C73FPV(FX-2775A-1)               | T  | 12.5/14.3    |
| IC14    | 1110006260  | S.IC BD5242G-TR                                | T  | 6.6/5.9      |
| IC15    | 1130011540  | S.IC BR24L16FV-WE2                             | B  | 16/11.6      |
| Q1      | 1560000841  | S.FET 2SK1829(TE85R,F)                         | T  | 75/39.6      |
| Q2      | 1580000731  | S.FET 3SK293(TE85L,F)                          | B  | 76.8/37.9    |
| Q3      | 1580000800  | S.FET 3SK324UG-TL-E                            | B  | 66.2/37.9    |
| Q4      | 1530002601  | S.TRA 2SC4215-O(TE85R,F)                       | B  | 51.4/23.1    |
| Q5      | 1530000371  | S.TRA 2SC3356-T1B S (R25)                      | T  | 74.3/33.5    |
| Q6      | 1590003230  | S.TRA UNR9113J-(TX)                            | T  | 72.5/19.1    |
| Q7      | 1560001232  | S.FET RD07MVS2-T112                            | T  | 82.6/27      |
| Q8      | 1560001241  | S.FET RD01MUS1-T113                            | T  | 76.1/27.5    |
| Q9      | 1530003311  | S.TRA 2SC5107-O(TE85R,F)                       | T  | 67/30.3      |
| Q10     | 1530003311  | S.TRA 2SC5107-O(TE85R,F)                       | T  | 59.4/36.3    |
| Q11     | 1530003311  | S.TRA 2SC5107-O(TE85R,F)                       | B  | 56.3/37      |
| Q12     | 1530003311  | S.TRA 2SC5107-O(TE85R,F)                       | T  | 59/31.5      |
| Q13     | 1530002920  | S.TRA 2SC4226-T1 R25                           | T  | 54.9/30.7    |
| Q14     | 1530002920  | S.TRA 2SC4226-T1 R25                           | T  | 54.2/37.1    |
| Q15     | 1590001400  | S.TRA XP1214(TX)                               | B  | 56.5/32.6    |
| Q16     | 1590003290  | S.TRA UNR9213J-(TX)                            | B  | 59.1/32.6    |
| Q17     | 1530002851  | S.TRA 2SC4116-BL(TE85R,F)                      | T  | 55.5/44.1    |
| Q18     | 1560000541  | S.FET 2SK880-Y(T5RICOM,F)                      | B  | 51.5/40.4    |
| Q19     | 1530002851  | S.TRA 2SC4116-BL(TE85R,F)                      | T  | 43.3/29.9    |
| Q21     | 1510000920  | S.TRA 2SA1577 T106 Q                           | T  | 71.9/16.4    |
| Q22     | 1510000920  | S.TRA 2SA1577 T106 Q                           | T  | 24.9/25.9    |
| Q23     | 1520000460  | S.TRA 2SB1132 T100 R                           | T  | 81/15.2      |
| Q24     | 1590001190  | S.TRA XP6501-(TX),AB                           | T  | 76.3/15.1    |
| Q25     | 1590003230  | S.TRA UNR9113J-(TX)                            | T  | 75.7/11.7    |
| Q26     | 1590003290  | S.TRA UNR9213J-(TX)                            | T  | 49.7/18.4    |
| Q27     | 1590003290  | S.TRA UNR9213J-(TX)                            | T  | 24.8/16.7    |
| Q28     | 1590003430  | S.TRA UNR911HJ-(TX)                            | B  | 63.1/10.6    |
| Q29     | 1590003270  | S.TRA UNR9210J-(TX)                            | B  | 35.7/9.2     |
| Q30     | 1510001080  | S.TRA 2SA2048 TLR                              | T  | 91.9/8.6     |
| Q31     | 1590001190  | S.TRA XP6501-(TX),AB                           | T  | 91.4/5.2     |
| Q32     | 1590003020  | S.TRA XP4216-(TX)                              | T  | 16.5/23.1    |
| Q33     | 1590003230  | S.TRA UNR9113J-(TX)                            | T  | 19.9/22.5    |
| Q34     | 1560001360  | S.FET 2SK3019 TL                               | T  | 10.7/30.1    |
| Q35     | 1560001360  | S.FET 2SK3019 TL                               | T  | 9.1/26.6     |
| D1      | 1750001080  | S.DIO RB886G T2R                               | B  | 90.2/38.7    |
| D2      | 1750000581  | S.DIO 1SV307(TPH3,F)                           | B  | 91.5/31.1    |
| D3      | 1750000711  | S.VAR HVC350BTRF-E                             | B  | 87.5/33.5    |
| D4      | 1750000711  | S.VAR HVC350BTRF-E                             | B  | 87.5/34.8    |
| D5      | 1790001260  | S.DIO MA2S077-(TX)                             | B  | 87.4/36.7    |
| D6      | 1790001240  | S.DIO MA2S728-(TX)                             | B  | 85/39.9      |
| D7      | 1750000711  | S.VAR HVC350BTRF-E                             | B  | 81.8/33.5    |
| D8      | 1750000711  | S.VAR HVC350BTRF-E                             | B  | 81.8/34.8    |
| D9      | 1750000711  | S.VAR HVC350BTRF-E                             | B  | 73.6/35.9    |
| D10     | 1750000711  | S.VAR HVC350BTRF-E                             | B  | 72.2/35.9    |
| D14     | 1790001260  | S.DIO MA2S077-(TX)                             | T  | 65.8/35.3    |
| D15     | 1790001260  | S.DIO MA2S077-(TX)                             | T  | 65.8/36.7    |
| D16     | 1750000711  | S.VAR HVC350BTRF-E                             | T  | 52.6/38.9    |
| D17     | 1750000711  | S.VAR HVC350BTRF-E                             | T  | 49.4/28.3    |
| D18     | 1720000570  | S.VAR MA368(TX)                                | B  | 49.6/26.9    |
| D21     | 1750000711  | S.VAR HVC350BTRF-E                             | T  | 50.5/33.7    |
| D22     | 1750000711  | S.VAR HVC350BTRF-E                             | T  | 50.5/35.2    |
| D24     | 1790001250  | S.DIO MA2S111-(TX)                             | T  | 41.5/39.2    |
| D25     | 1790001250  | S.DIO MA2S111-(TX)                             | T  | 70.5/40.4    |
| D26     | 1790001790  | S.DIO RB876W TL                                | B  | 35.7/7.1     |
| D27     | 1750000520  | S.DIO DAN222TL                                 | B  | 21.3/6       |
| D28     | 1790001260  | S.DIO MA2S077-(TX)                             | B  | 8.5/11.2     |
| D29     | 1750000940  | S.DIO ISS400 TE61                              | B  | 23.1/4       |
| D30     | 1750001080  | S.DIO RB886G T2R                               | T  | 88.5/36.2    |
| D31     | 1790001010  | S.ZEN MA8043-L(TX) [USA-03]                    | B  | 74.5/19.9    |
|         | 1790001010  | S.ZEN MA8043-L(TX) [GEN-03]                    |    |              |
|         | 1790001010  | S.ZEN MA8043-L(TX) [USA-05]                    |    |              |
| F11     | 2030000150  | S.MON DSF753SB 46.350 MHz(FL-335)              | B  | 62.8/27.1    |
| F12     | 2020001840  | CER ALFYM450F=K                                |    |              |
| F13     | 2040001440  | S.LC NFE31PT152Z1E9L (NFM60R20T152)            | B  | 81.2/17.8    |
| X1      | 6070000191  | S.DIS CDBKB450KCAY24-R0                        | T  | 54.4/20      |
| X2      | 6050011940  | S.XTA CR-783 TTS14VSB-A6 15.3 MHz              | T  | 36.9/28.9    |
| X3      | 6050011720  | S.XTA CR-764 SMD-49TB 19.6608 MHz              | B  | 12/5.9       |
| L1      | 6200012490  | S.COI 0.30-0.9-6TR 13.6N <COMO>                | B  | 94.7/36.4    |
| L2      | 6200013010  | S.COI 0.30-0.9-5TL 10.3N <COMO>                | B  | 94.8/31.9    |
| L3      | 6200012610  | S.COI 0.40-0.9-2TL 2.8N <COMO>                 | B  | 92.9/26.3    |
| L4      | 6200012610  | S.COI 0.40-0.9-2TL 2.8N <COMO>                 | B  | 89.9/20.6    |
| L5      | 6200010850  | S.COI LQW18AN22NG00D (LQW1608A22NG00) [USA-02] | B  | 89.1/36.5    |

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











[MAIN UNIT]

| REF NO. | PARTS NO.  | DESCRIPTION                 | M.       | H/V LOCATION |
|---------|------------|-----------------------------|----------|--------------|
| C342    | 4030017630 | S.CER ECJ0EC1H120J          | B        | 18.3/4.2     |
| C343    | 4030017580 | S.CER ECJ0EC1H060C          | B        | 5.6/4.2      |
| C344    | 4030017640 | S.CER ECJ0EC1H150J          | B        | 7.6/9.1      |
| C345    | 4030016930 | S.CER ECJ0EB1A104K          | B        | 11/11.2      |
| C346    | 4030016930 | S.CER ECJ0EB1A104K          | B        | 11/10.1      |
| C347    | 4030016790 | S.CER ECJ0EB1C103K          | T        | 8.8/6.5      |
| C348    | 4030016930 | S.CER ECJ0EB1A104K          | T        | 6/10         |
| C349    | 4030016930 | S.CER ECJ0EB1A104K          | T        | 21.3/14.9    |
| C350    | 4030017460 | S.CER ECJ0EB1E102K          | T        | 59.4/43.4    |
| C354    | 4030017460 | S.CER ECJ0EB1E102K          | T        | 14.2/24.4    |
| C355    | 4030018080 | S.CER ECJ0EB1H182K          | T        | 42.9/22.7    |
| C356    | 4030018910 | S.CER C1608 JB 0J 475K-T    | T        | 34.6/20.6    |
| C357    | 4030017400 | S.CER ECJ0EC1H220J          | T        | 79/25.5      |
|         | 4030017400 | S.CER ECJ0EC1H220J          | [USA-02] |              |
|         | 4030017400 | S.CER ECJ0EC1H220J          | [EUR-02] |              |
|         | 4030017400 | S.CER ECJ0EC1H220J          | [BEA-02] |              |
|         | 4030017400 | S.CER ECJ0EC1H220J          | [GEN-02] |              |
|         | 4030017400 | S.CER ECJ0EC1H220J          | [USA-04] |              |
|         | 4030017400 | S.CER ECJ0EC1H220J          | [RUS-05] |              |
|         | 4030017400 | S.CER ECJ0EC1H220J          | [CHN-02] |              |
|         | 4030017400 | S.CER ECJ0EC1H220J          | [CHN-01] |              |
| J1      | 6510021901 | S.CON BM02B-ASRS-TF(LF)(SN) | T        | 86.6/6.8     |
| J2      | 6450001680 | CON HSJ1122-010010          |          |              |
| J3      | 6450002250 | CON HSJ1456-010320          |          |              |
| J4      | 6510018430 | S.CON AXN330C038P           | B        | 11.8/30.6    |
| F1      | 5210000830 | S.FUS ERBFE3R00U            | T        | 98/14.5      |
| DS1     | 5040002670 | S.LED CL-165HR/YG           | T        | 102.8/12.4   |
| MC1     | 7700002750 | MIC EM9745P-38-G <HOR>      |          |              |
| S1      | 2260002840 | SWI SKHLLFA010              |          |              |
| S2      | 2260002800 | S.SWI SW-167 (SKQTLAE010)   | B        | 99.4/44.2    |
| S3      | 2260002800 | S.SWI SW-167 (SKQTLAE010)   | B        | 60.9/44.2    |
| S4      | 2250000490 | ENC TP70TF5163-15.9F-2775   |          |              |
| EP1     | 6910015370 | S.BEA ACZ1005Y-102-T        | T        | 57/29.9      |
| EP3     | 6910015370 | S.BEA ACZ1005Y-102-T        | T        | 34.7/32      |
| MP1     | 8410002531 | S.HEA 2681 PA HEATSINK-1    | B        | 79/28.2      |
| MP3     | 8510016470 | S.CAS 2775 VCO CASE         | T        | 54.1/33.2    |

[MAIN-B UNIT]

| REF NO. | PARTS NO.  | DESCRIPTION                           | M. | H/V LOCATION |
|---------|------------|---------------------------------------|----|--------------|
| IC1     | 1110003201 | S.IC TA31136FNG(EL)                   | B  | 51.8/19      |
| IC2     | 1130000851 | S.IC TC75S51F(TE85L,F)                | T  | 68.9/21      |
| IC4     | 1140005991 | S.IC MB15A02PFV1-G-BND-ERE1           | T  | 38.3/35.7    |
| IC5     | 1110005340 | S.IC NJM12902V-TE1-#ZZZB              | T  | 29.7/11.6    |
| IC6     | 1110005320 | S.IC NJM13403V-TE1-#ZZZB              | T  | 15.9/34.6    |
| IC7     | 1110005330 | S.IC NJM12904V-TE1-#ZZZB              | T  | 29.2/34.6    |
| IC8     | 1190000350 | S.IC M62363FP-650C                    | T  | 40.3/15.2    |
| IC9     | 1110005350 | S.IC NJM2870F05-TE1-#FZZB             | B  | 84.2/14.2    |
| IC10    | 1130011770 | S.IC CD4066BPWR                       | T  | 22.9/34.6    |
| IC12    | 1110001811 | S.IC TA7368FG(5,ER)                   | T  | 89.3/13.2    |
| IC13    | 1140012721 | S.IC HD6433687C73FPV(FX-2775A-1)      | T  | 12.5/14.3    |
| IC14    | 1110006260 | S.IC BD5242G-TR                       | T  | 6.6/5.9      |
| IC15    | 1130011540 | S.IC BR24L16FV-WE2                    | B  | 16/11.6      |
| Q1      | 1560000841 | S.FET 2SK1829(TE85R,F)                | T  | 75/39.6      |
| Q2      | 1580000731 | S.FET 3SK293(TE85L,F)                 | B  | 76.8/37.9    |
| Q3      | 1580000800 | S.FET 3SK324UG-TL-E                   | B  | 66.2/37.9    |
| Q4      | 1530002601 | S.TRA 2SC4215-O(TE85R,F)              | B  | 51.4/23.1    |
| Q5      | 1530000371 | S.TRA 2SC3356-T1B S (R25)             | T  | 74.3/33.5    |
| Q6      | 1590003230 | S.TRA UNR9113J-(TX)                   | T  | 72.5/19.1    |
| Q7      | 1560001232 | S.FET RD07MVS2-T112                   | T  | 82.6/27      |
| Q8      | 1560001241 | S.FET RD01MUS1-T113                   | T  | 76.1/27.5    |
| Q9      | 1530003311 | S.TRA 2SC5107-O(TE85R,F)              | T  | 67/30.3      |
| Q10     | 1530003311 | S.TRA 2SC5107-O(TE85R,F)              | T  | 59.4/36.3    |
| Q11     | 1530003311 | S.TRA 2SC5107-O(TE85R,F)              | B  | 56.3/37      |
| Q12     | 1530003311 | S.TRA 2SC5107-O(TE85R,F)              | T  | 59/31.5      |
| Q13     | 1530002920 | S.TRA 2SC4226-T1 R25                  | T  | 54.9/30.7    |
| Q14     | 1530002920 | S.TRA 2SC4226-T1 R25                  | T  | 54.2/37.1    |
| Q15     | 1590001400 | S.TRA XP1214(TX)                      | B  | 56.5/32.6    |
| Q16     | 1590003290 | S.TRA UNR9213J-(TX)                   | B  | 59.1/32.6    |
| Q17     | 1530002851 | S.TRA 2SC4116-BL(TE85R,F)             | T  | 55.5/44.1    |
| Q18     | 1560000541 | S.FET 2SK880-Y(T5RICOM,F)             | B  | 51.5/40.4    |
| Q19     | 1530002851 | S.TRA 2SC4116-BL(TE85R,F)             | T  | 43.3/29.9    |
| Q21     | 1510000920 | S.TRA 2SA1577 T106 Q                  | T  | 71.9/16.4    |
| Q22     | 1510000920 | S.TRA 2SA1577 T106 Q                  | T  | 24.9/25.9    |
| Q23     | 1520000460 | S.TRA 2SB1132 T100 R                  | T  | 81/15.2      |
| Q24     | 1590001190 | S.TRA XP6501-(TX).AB                  | T  | 76.3/15.1    |
| Q25     | 1590003230 | S.TRA UNR9113J-(TX)                   | T  | 75.7/11.7    |
| Q26     | 1590003290 | S.TRA UNR9213J-(TX)                   | T  | 49.7/18.4    |
| Q27     | 1590003290 | S.TRA UNR9213J-(TX)                   | T  | 24.8/16.7    |
| Q28     | 1590003430 | S.TRA UNR911HJ-(TX)                   | B  | 63.1/10.6    |
| Q29     | 1590003270 | S.TRA UNR9210J-(TX)                   | B  | 35.7/9.2     |
| Q30     | 1510001080 | S.TRA 2SA2048 TLR                     | T  | 91.9/8.6     |
| Q31     | 1590001190 | S.TRA XP6501-(TX).AB                  | T  | 91.4/5.2     |
| Q32     | 1590003020 | S.TRA XP4216-(TX)                     | T  | 16.5/23.1    |
| Q33     | 1590003230 | S.TRA UNR9113J-(TX)                   | T  | 19.9/22.5    |
| Q34     | 1560001360 | S.FET 2SK3019 TL                      | T  | 10.7/30.1    |
| Q35     | 1560001360 | S.FET 2SK3019 TL                      | T  | 9.1/26.6     |
| D1      | 1750001080 | S.DIO RB886G T2R                      | B  | 90.2/38.7    |
| D2      | 1750000581 | S.DIO 1SV307(TPH3,F)                  | B  | 91.5/31.1    |
| D3      | 1750000711 | S.VAR HVC350BTRF-E                    | B  | 87.5/33.5    |
| D4      | 1750000711 | S.VAR HVC350BTRF-E                    | B  | 87.5/34.8    |
| D5      | 1790001260 | S.DIO MA2S077-(TX)                    | B  | 87.4/36.7    |
| D6      | 1790001240 | S.DIO MA2S728-(TX)                    | B  | 85/39.9      |
| D7      | 1750000711 | S.VAR HVC350BTRF-E                    | B  | 81.8/33.5    |
| D8      | 1750000711 | S.VAR HVC350BTRF-E                    | B  | 81.8/34.8    |
| D9      | 1750000711 | S.VAR HVC350BTRF-E                    | B  | 73.6/35.9    |
| D10     | 1750000711 | S.VAR HVC350BTRF-E                    | B  | 72.2/35.9    |
| D14     | 1790001260 | S.DIO MA2S077-(TX)                    | T  | 65.8/35.3    |
| D15     | 1790001260 | S.DIO MA2S077-(TX)                    | T  | 65.8/36.7    |
| D16     | 1750000771 | S.VAR HVC376BTRF-E                    | T  | 52.6/38.9    |
| D17     | 1750000771 | S.VAR HVC376BTRF-E                    | T  | 49.4/28.3    |
| D18     | 1720000570 | S.VAR MA368(TX)                       | B  | 49.6/26.9    |
| D21     | 1750000831 | S.VAR HVC362TRF-E                     | T  | 50.5/33.7    |
| D22     | 1750000831 | S.VAR HVC362TRF-E                     | T  | 50.5/35.2    |
| D24     | 1790001250 | S.DIO MA2S111-(TX)                    | T  | 41.5/39.2    |
| D25     | 1790001250 | S.DIO MA2S111-(TX)                    | T  | 70.5/40.4    |
| D26     | 1790001790 | S.DIO RB876W TL                       | B  | 35.7/7.1     |
| D27     | 1750000520 | S.DIO DAN222TL                        | B  | 21.3/6       |
| D28     | 1790001260 | S.DIO MA2S077-(TX)                    | B  | 8.5/11.2     |
| D29     | 1750000940 | S.DIO ISS400 TE61                     | B  | 23.1/4       |
| D30     | 1750001080 | S.DIO RB886G T2R                      | T  | 88.5/36.2    |
| F11     | 2030000150 | S.MON DSF753SB 46.350 MHz(FL-335)     | B  | 62.8/27.1    |
| F12     | 2020001840 | CER ALFYM450F=K                       |    |              |
| F13     | 2040001440 | S.LC NFE31PT152Z1E9L (NFM60R20T152)   | B  | 81.2/17.8    |
| X1      | 6070000191 | S.DIS CDBKB450KCAY24-R0               | T  | 54.4/20      |
| X2      | 6050011940 | S.XTA CR-783 TTS14VSB-A6 15.3 MHz     | T  | 36.9/28.9    |
| X3      | 6050011720 | S.XTA CR-764 SMD-49TB 19.6608 MHz     | B  | 12/5.9       |
| L1      | 6200012490 | S.COI 0.30-0.9-6TR 13.6N <COMO>       | B  | 94.7/36.4    |
| L2      | 6200013010 | S.COI 0.30-0.9-5TL 10.3N <COMO>       | B  | 94.8/31.9    |
| L3      | 6200012610 | S.COI 0.40-0.9-2TL 2.8N <COMO>        | B  | 92.9/26.3    |
| L4      | 6200012610 | S.COI 0.40-0.9-2TL 2.8N <COMO>        | B  | 89.9/20.6    |
| L5      | 6200010850 | S.COI LQW18AN22NG00D (LQW1608A22NG00) | B  | 89.1/36.5    |
| L7      | 6200007710 | S.COI LQW2BHN27NJ03L                  | B  | 84.3/34.5    |
| L8      | 6200007710 | S.COI LQW2BHN27NJ03L                  | B  | 78.9/35.3    |
| L9      | 6200007230 | S.COI LQW2BHN15NJ03L                  | B  | 75.9/35.2    |
| L11     | 6200007690 | S.COI LQW2BHN18NJ03L                  | B  | 70.6/37.8    |
| L12     | 6200011001 | S.COI ELJRF 56NJFB                    | B  | 64.2/39      |
| L13     | 6200007850 | S.COI ELJNC R82K-F                    | B  | 66.8/33.9    |
| L15     | 6200002851 | S.COI NLV25T-R82J                     | T  | 93.8/31.8    |
| L17     | 6200012980 | S.COI 0.40-1.4-5TR 18.3N <COMO>       | B  | 81.2/20.9    |
| L19     | 6200005681 | S.COI ELJRE 15NGFA                    | T  | 76/35.5      |
| L20     | 6200005691 | S.COI ELJRE 18NGFA                    | T  | 68.8/33.1    |

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



[MAIN-B UNIT]

Table with columns: REF NO., PARTS NO., DESCRIPTION, M., H/V LOCATION. Contains parts list for MAIN-B UNIT (REF R1-L45).

[MAIN-B UNIT]

Table with columns: REF NO., PARTS NO., DESCRIPTION, M., H/V LOCATION. Contains parts list for MAIN-B UNIT (REF R97-R227).

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

[MAIN-B UNIT]

Table with 5 columns: REF NO., PARTS NO., DESCRIPTION, M., H/V LOCATION. Rows include R228 to R304 and C1 to C61.

[MAIN-B UNIT]

Table with 5 columns: REF NO., PARTS NO., DESCRIPTION, M., H/V LOCATION. Rows include C62 to C177.

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

[MAIN-B UNIT]

| REF NO. | PARTS NO.  | DESCRIPTION              | M. | H/V LOCATION |
|---------|------------|--------------------------|----|--------------|
| C178    | 4030017420 | S.CER ECJ0EC1H470J       | T  | 77.7/21.3    |
| C180    | 4030017420 | S.CER ECJ0EC1H470J       | T  | 67.1/32.3    |
| C182    | 4030017600 | S.CER ECJ0EC1H080C       | T  | 68.8/31.6    |
| C183    | 4030017420 | S.CER ECJ0EC1H470J       | T  | 74.1/24      |
| C185    | 4030017530 | S.CER ECJ0EC1H0R5B       | B  | 90.7/35.7    |
| C186    | 4030017530 | S.CER ECJ0EC1H0R5B       | B  | 92.1/38.7    |
| C188    | 4030017460 | S.CER ECJ0EB1E102K       | B  | 47.5/20.7    |
| C196    | 4030017420 | S.CER ECJ0EC1H470J       | B  | 62.5/39      |
| C197    | 4030017460 | S.CER ECJ0EB1E102K       | B  | 62.5/39.9    |
| C202    | 4030016930 | S.CER ECJ0EB1A104K       | T  | 48.4/33.4    |
| C203    | 4030017460 | S.CER ECJ0EB1E102K       | B  | 46.9/30.1    |
| C205    | 4030017380 | S.CER ECJ0EC1H050B       | B  | 56.3/39.7    |
| C206    | 4030017600 | S.CER ECJ0EC1H080C       | B  | 55.9/41.3    |
| C208    | 4030017600 | S.CER ECJ0EC1H080C       | B  | 54.2/42.3    |
| C209    | 4030017460 | S.CER ECJ0EB1E102K       | B  | 54.2/43.3    |
| C211    | 4030018910 | S.CER C1608 JB 0J 475K-T | T  | 36.1/21.9    |
| C213    | 4030017460 | S.CER ECJ0EB1E102K       | T  | 31.5/27.8    |
| C221    | 4030016930 | S.CER ECJ0EB1A104K       | T  | 32.3/31.6    |
| C222    | 4030016930 | S.CER ECJ0EB1A104K       | T  | 19.2/34      |
| C223    | 4030016930 | S.CER ECJ0EB1A104K       | B  | 29.7/9       |
| C224    | 4030016930 | S.CER ECJ0EB1A104K       | T  | 40.9/29.1    |
| C225    | 4030017460 | S.CER ECJ0EB1E102K       | B  | 83/11.6      |
| C226    | 4550005980 | S.TAN TEESVA 1A 475M8R   | B  | 81.2/13.5    |
| C227    | 4030016790 | S.CER ECJ0EB1C103K       | B  | 86.9/13      |
| C228    | 4510008540 | S.ELE EEE1CA100SR        | B  | 89.4/15.7    |
| C229    | 4030017460 | S.CER ECJ0EB1E102K       | B  | 85.8/17.8    |
| C230    | 4030016930 | S.CER ECJ0EB1A104K       | B  | 85.8/16.8    |
| C231    | 4030016790 | S.CER ECJ0EB1C103K       | T  | 74/13.3      |
| C232    | 4030017730 | S.CER ECJ0EB1E471K       | T  | 76.2/13.3    |
| C233    | 4030016790 | S.CER ECJ0EB1C103K       | T  | 24.5/23      |
| C234    | 4030017460 | S.CER ECJ0EB1E102K       | T  | 24.2/27.8    |
| C235    | 4030016790 | S.CER ECJ0EB1C103K       | T  | 69.8/15.7    |
| C236    | 4030017460 | S.CER ECJ0EB1E102K       | T  | 69.8/17.7    |
| C237    | 4510008660 | S.ELE EEE0JA220SR        | B  | 76/15.5      |
| C238    | 4030017460 | S.CER ECJ0EB1E102K       | B  | 77/18.4      |
| C241    | 4030016930 | S.CER ECJ0EB1A104K       | T  | 35.4/9.9     |
| C242    | 4030016930 | S.CER ECJ0EB1A104K       | T  | 44.7/9.9     |
| C243    | 4030016790 | S.CER ECJ0EB1C103K       | T  | 40.5/9.9     |
| C244    | 4030016930 | S.CER ECJ0EB1A104K       | B  | 46.5/15.4    |
| C251    | 4030016970 | S.CER ECJ0EB1C223K       | T  | 33.4/17.1    |
| C252    | 4030017740 | S.CER ECJ0EB1E821K       | T  | 29.9/16.1    |
| C253    | 4030017740 | S.CER ECJ0EB1E821K       | T  | 33.4/14.9    |
| C254    | 4030016930 | S.CER ECJ0EB1A104K       | T  | 33.4/10.9    |
| C255    | 4030016950 | S.CER ECJ0EB1A473K       | B  | 34.5/12.1    |
| C256    | 4030016940 | S.CER ECJ0EB1A393K       | T  | 29.9/28.1    |
| C257    | 4030016930 | S.CER ECJ0EB1A104K       | T  | 29.9/30.1    |
| C258    | 4030017790 | S.CER ECJ0EB1E682K       | T  | 26.6/30.1    |
| C259    | 4030018860 | S.CER ECJ0EB0J105K       | T  | 31.5/41.1    |
| C260    | 4030017730 | S.CER ECJ0EB1E471K       | T  | 29.8/39.1    |
| C261    | 4030016930 | S.CER ECJ0EB1A104K       | T  | 31.5/40.1    |
| C264    | 4510008540 | S.ELE EEE1CA100SR        | B  | 69.7/15.5    |
| C265    | 4030017460 | S.CER ECJ0EB1E102K       | B  | 64.4/12.3    |
| C266    | 4030016930 | S.CER ECJ0EB1A104K       | B  | 63/8.5       |
| C269    | 4030017720 | S.CER ECJ0EB1H331K       | T  | 11.6/37.9    |
| C270    | 4030016950 | S.CER ECJ0EB1A473K       | T  | 14.1/28.8    |
| C271    | 4030016950 | S.CER ECJ0EB1A473K       | T  | 14.1/26.8    |
| C272    | 4030016950 | S.CER ECJ0EB1A473K       | T  | 10.6/28.5    |
| C273    | 4030016950 | S.CER ECJ0EB1A473K       | T  | 14.1/27.8    |
| C274    | 4030016950 | S.CER ECJ0EB1A473K       | T  | 11.6/31.9    |
| C275    | 4030016970 | S.CER ECJ0EB1C223K       | T  | 11.6/34.4    |
| C276    | 4030016950 | S.CER ECJ0EB1A473K       | T  | 12.6/34.4    |
| C277    | 4030016930 | S.CER ECJ0EB1A104K       | T  | 14.6/40.1    |
| C278    | 4030017430 | S.CER ECJ0EC1H101J       | T  | 18/40.1      |
| C279    | 4030018910 | S.CER C1608 JB 0J 475K-T | T  | 36.9/23.2    |
| C280    | 4030017780 | S.CER ECJ0EB1E472K       | T  | 21.3/27.8    |
| C281    | 4030018920 | S.CER ECJ0EB1H392K       | T  | 17.7/26.8    |
| C282    | 4030017710 | S.CER ECJ0EC1H181J       | T  | 17.7/29.8    |
| C283    | 4030018900 | S.CER ECJ0EB0J474K       | T  | 19.4/31.7    |
| C284    | 4030016930 | S.CER ECJ0EB1A104K       | T  | 22.9/39.1    |
| C285    | 4030016930 | S.CER ECJ0EB1A104K       | T  | 22.9/40.1    |
| C286    | 4030017460 | S.CER ECJ0EB1E102K       | B  | 16.7/40.4    |
| C287    | 4550006250 | S.TAN TEESVA 1A 106M8R   | B  | 21.8/40.7    |
| C288    | 4030017460 | S.CER ECJ0EB1E102K       | B  | 17.2/38.1    |
| C289    | 4030016930 | S.CER ECJ0EB1A104K       | B  | 20.2/31      |
| C290    | 4030016930 | S.CER ECJ0EB1A104K       | T  | 27.5/16.2    |
| C291    | 4030016780 | S.CER ECJ0EB1C153K       | T  | 25.7/10.9    |
| C292    | 4030016930 | S.CER ECJ0EB1A104K       | T  | 25.7/13.9    |
| C293    | 4030017740 | S.CER ECJ0EB1E821K       | T  | 25.7/11.9    |
| C295    | 4030018110 | S.CER ECJ0EB1H272K       | T  | 29.1/5.1     |
| C296    | 4030018240 | S.CER ECJ0EB1E562K       | T  | 29.1/6.1     |
| C297    | 4030017710 | S.CER ECJ0EC1H181J       | T  | 27.1/7.1     |
| C298    | 4030018090 | S.CER ECJ0EB1C822K       | T  | 31/7.1       |
| C299    | 4030017510 | S.CER ECJ0EC1H680J       | T  | 31/5.1       |
| C300    | 4030017440 | S.CER ECJ0EC1H221J       | B  | 19.8/38.2    |
| C302    | 4030017620 | S.CER ECJ0EC1H100C       | T  | 66/39.3      |
| C303    | 4030017460 | S.CER ECJ0EB1E102K       | T  | 65/39.3      |
| C304    | 4030017580 | S.CER ECJ0EC1H060C       | B  | 68.5/40.2    |
| C305    | 4030017590 | S.CER ECJ0EC1H070C       | B  | 64.2/40.8    |
| C306    | 4030017460 | S.CER ECJ0EB1E102K       | B  | 61/12.3      |
| C307    | 4030017460 | S.CER ECJ0EB1E102K       | B  | 59.3/12.3    |
| C308    | 4030017460 | S.CER ECJ0EB1E102K       | T  | 75.7/9.8     |
| C309    | 4030017460 | S.CER ECJ0EB1E102K       | B  | 75.5/11.3    |
| C310    | 4030016930 | S.CER ECJ0EB1A104K       | T  | 21.3/11.9    |
| C311    | 4030017460 | S.CER ECJ0EB1E102K       | B  | 64.9/8.5     |
| C312    | 4030017420 | S.CER ECJ0EC1H470J       | B  | 75/6.1       |
| C313    | 4030017420 | S.CER ECJ0EC1H470J       | B  | 32.9/7.1     |
| C314    | 4030017460 | S.CER ECJ0EB1E102K       | T  | 86.6/3.3     |
| C315    | 4030017460 | S.CER ECJ0EB1E102K       | T  | 93.2/6       |
| C316    | 4030016930 | S.CER ECJ0EB1A104K       | T  | 91.7/2.8     |
| C317    | 4510008540 | S.ELE EEE1CA100SR        | B  | 95.9/15.2    |
| C318    | 4030016930 | S.CER ECJ0EB1A104K       | T  | 89.7/8.9     |
| C319    | 4030016930 | S.CER ECJ0EB1A104K       | T  | 89.6/2.8     |
| C320    | 4030017730 | S.CER ECJ0EB1E471K       | T  | 88.6/2.8     |
| C321    | 4030017460 | S.CER ECJ0EB1E102K       | B  | 19.3/4.2     |

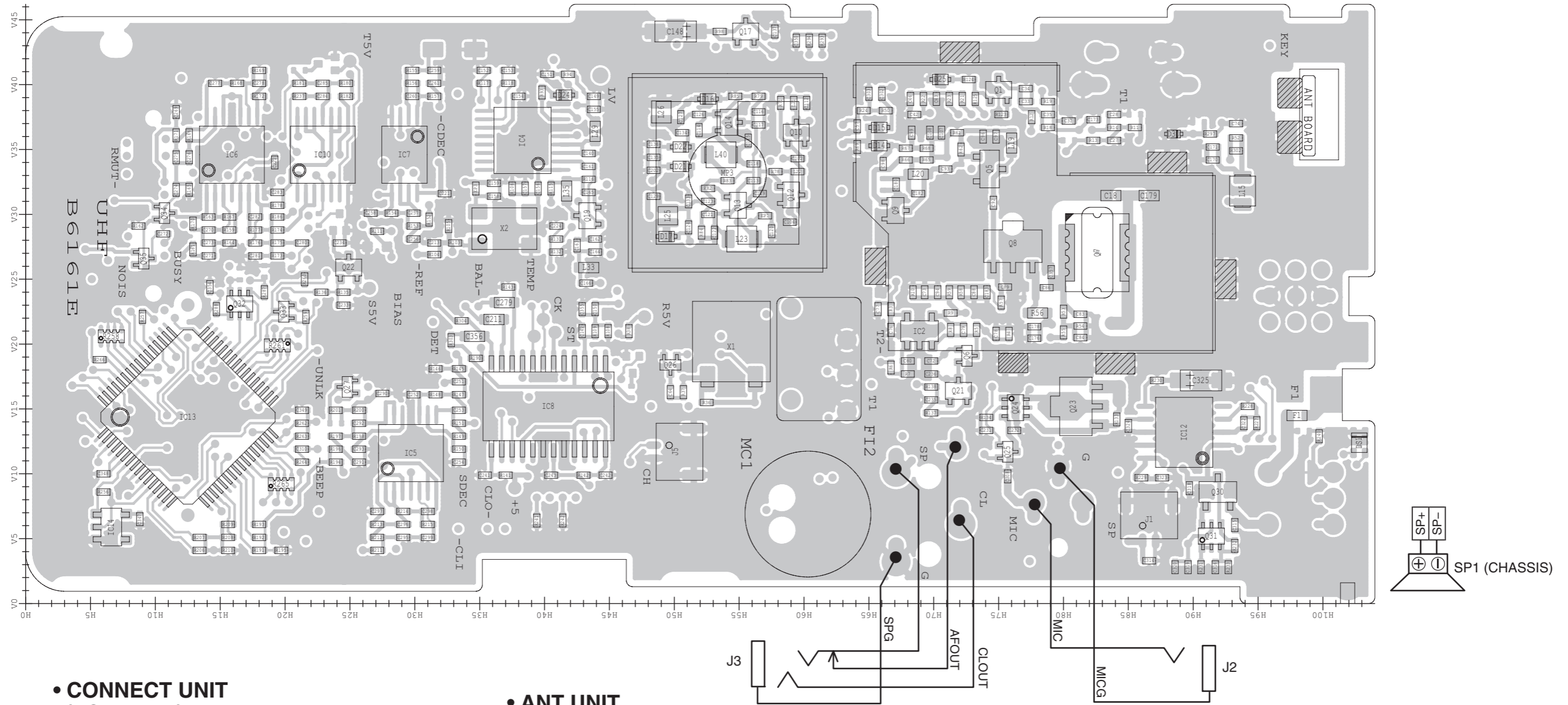
[MAIN-B UNIT]

| REF NO. | PARTS NO.  | DESCRIPTION                 | M. | H/V LOCATION |
|---------|------------|-----------------------------|----|--------------|
| C322    | 4030016950 | S.CER ECJ0EB1A473K          | T  | 93.9/13.9    |
| C323    | 4030016950 | S.CER ECJ0EB1A473K          | T  | 87.6/9.7     |
| C324    | 4030017420 | S.CER ECJ0EC1H470J          | T  | 85/13.7      |
| C325    | 4550006250 | S.TAN TEESVA 1A 106M8R      | T  | 90.6/17.2    |
| C326    | 4510008900 | S.ELE EEEFC0J101P           | B  | 87.8/8.9     |
| C333    | 4030017420 | S.CER ECJ0EC1H470J          | B  | 76.8/39.9    |
| C335    | 4030018860 | S.CER ECJ0EB0J105K          | B  | 54.6/22.6    |
| C339    | 4030016930 | S.CER ECJ0EB1A104K          | B  | 5.9/17.2     |
| C340    | 4030016930 | S.CER ECJ0EB1A104K          | B  | 9.3/12.5     |
| C341    | 4030016930 | S.CER ECJ0EB1A104K          | B  | 5.9/10.1     |
| C342    | 4030017630 | S.CER ECJ0EC1H120J          | B  | 18.3/4.2     |
| C343    | 4030017580 | S.CER ECJ0EC1H060C          | B  | 5.6/4.2      |
| C344    | 4030017640 | S.CER ECJ0EC1H150J          | B  | 7.6/9.1      |
| C345    | 4030016930 | S.CER ECJ0EB1A104K          | B  | 11/11.2      |
| C346    | 4030016930 | S.CER ECJ0EB1A104K          | B  | 11/10.1      |
| C347    | 4030016790 | S.CER ECJ0EB1C103K          | T  | 8.8/6.5      |
| C348    | 4030016930 | S.CER ECJ0EB1A104K          | T  | 6/10         |
| C349    | 4030016930 | S.CER ECJ0EB1A104K          | T  | 21.3/14.9    |
| C350    | 4030017460 | S.CER ECJ0EB1E102K          | T  | 59.4/43.4    |
| C354    | 4030017460 | S.CER ECJ0EB1E102K          | T  | 14.2/24.4    |
| C355    | 4030018080 | S.CER ECJ0EB1H182K          | T  | 42.9/22.7    |
| C356    | 4030018910 | S.CER C1608 JB 0J 475K-T    | T  | 34.6/20.6    |
| J1      | 6510021901 | S.CON BM02B-ASRS-TF(LF)(SN) | T  | 86.6/6.8     |
| J2      | 6450001680 | CON HSJ1122-010010          |    |              |
| J3      | 6450002250 | CON HSJ1456-010320          |    |              |
| J4      | 6510018430 | S.CON AXN330C038P           | B  | 11.8/30.6    |
| F1      | 5210000830 | S.FUS ERBFE3R00U            | T  | 98/14.5      |
| DS1     | 5040002670 | S.LED CL-165HR/YG           | T  | 102.8/12.4   |
| MC1     | 7700002750 | MIC EM9745P-38-G <HOR>      |    |              |
| S1      | 2260002840 | SWI SKHLLFA010              |    |              |
| S2      | 2260002800 | S.SWI SW-167 (SKQTLAE010)   | B  | 99.4/44.2    |
| S3      | 2260002800 | S.SWI SW-167 (SKQTLAE010)   | B  | 60.9/44.2    |
| S4      | 2250000490 | ENC TP70TF5163-15.9F-2775   |    |              |
| EP1     | 6910015370 | S.BEA ACZ1005Y-102-T        | T  | 57/29.9      |
| EP3     | 6910015370 | S.BEA ACZ1005Y-102-T        | T  | 34.7/32      |
| MP1     | 8410002531 | S.HEA 2681 PA HEATSINK-1    | B  | 79/28.2      |
| MP3     | 8510016470 | S.SCAS 2775 VCO CASE        | T  | 54.1/33.2    |

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

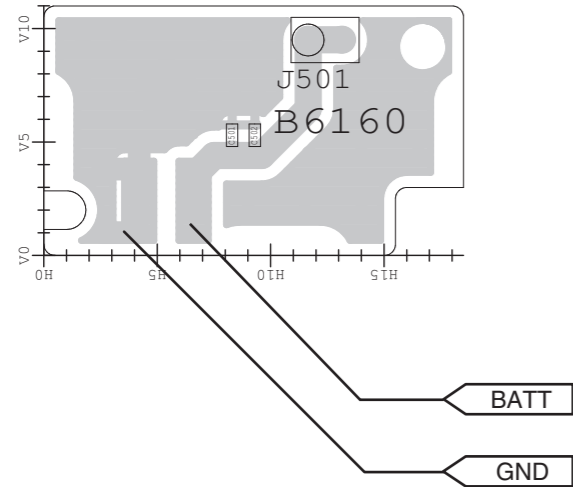
# BOARD LAYOUTS

## • MAIN/MAIN-B UNIT (TOP VIEW)

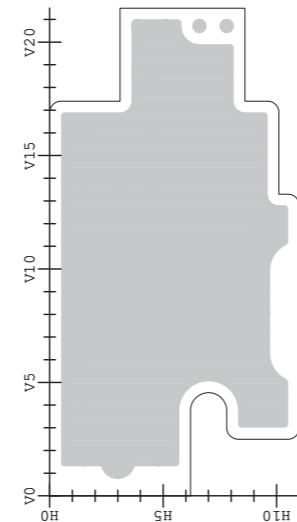


The combination of this side and the bottom side shows the board layout in the same configuration as the actual P.C.Board.

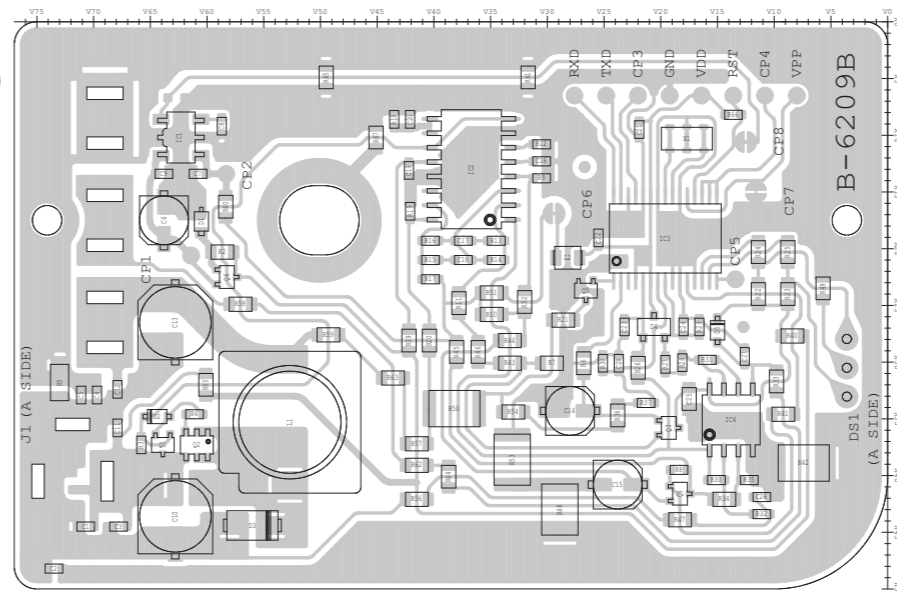
## • CONNECT UNIT (TOP VIEW)



## • ANT UNIT (TOP VIEW)

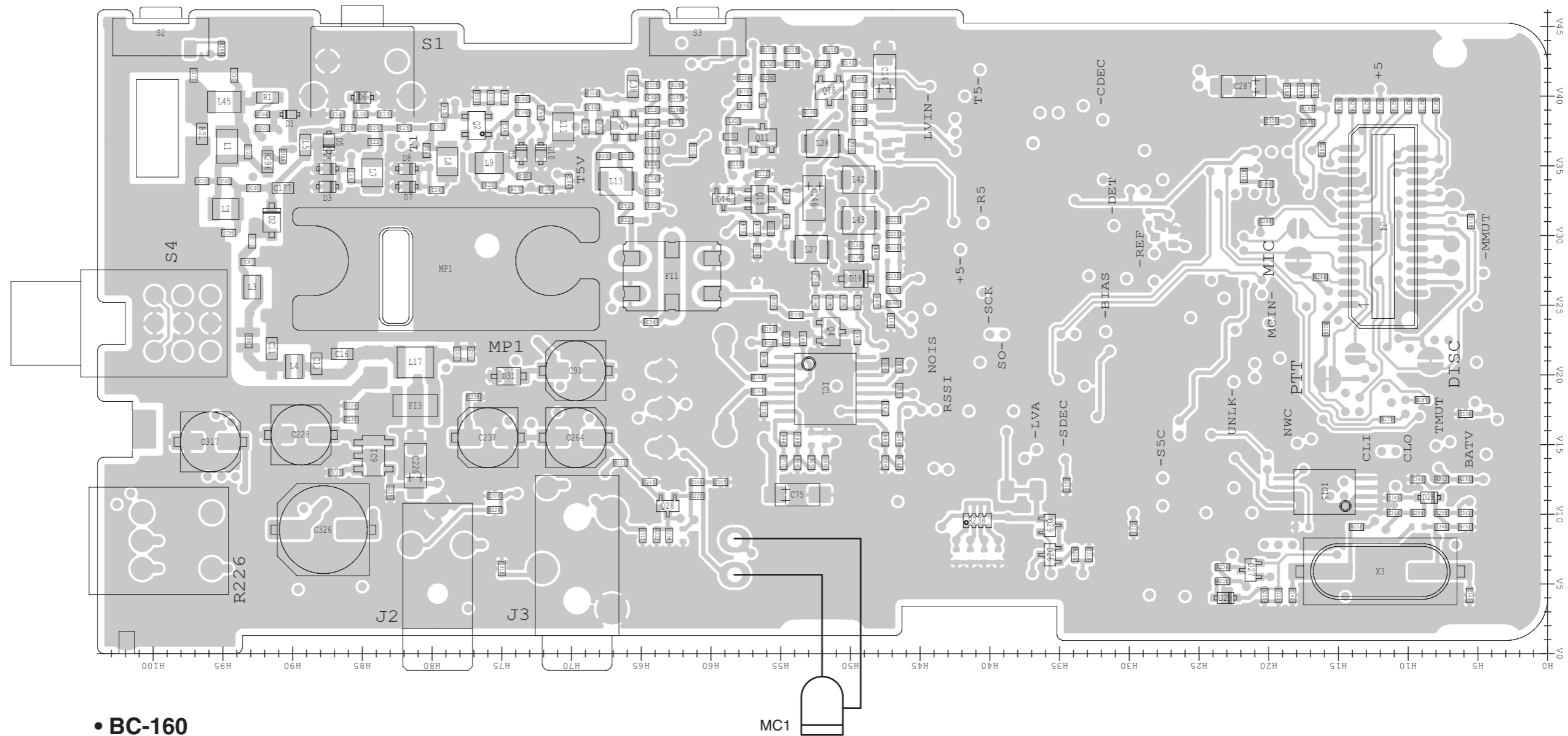


## • BC-160 (TOP VIEW)

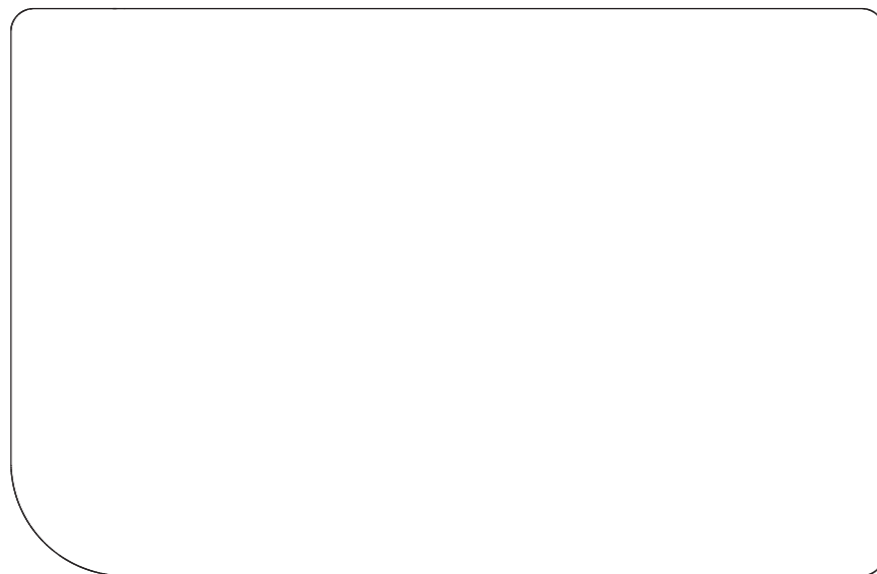


The combination of this side and the bottom side shows the board layout in the same configuration as the actual P.C.Board.

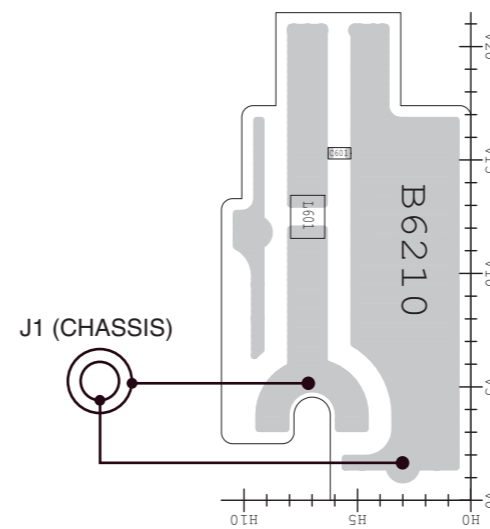
• MAIN/MAIN-B UNIT  
(BOTTOM VIEW)



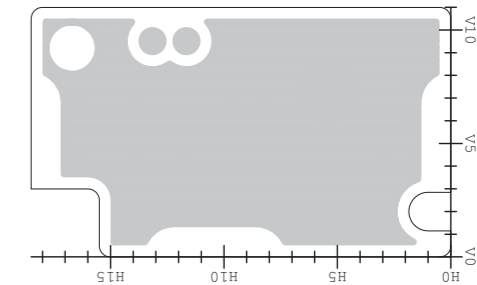
• BC-160  
(BOTTOM VIEW)



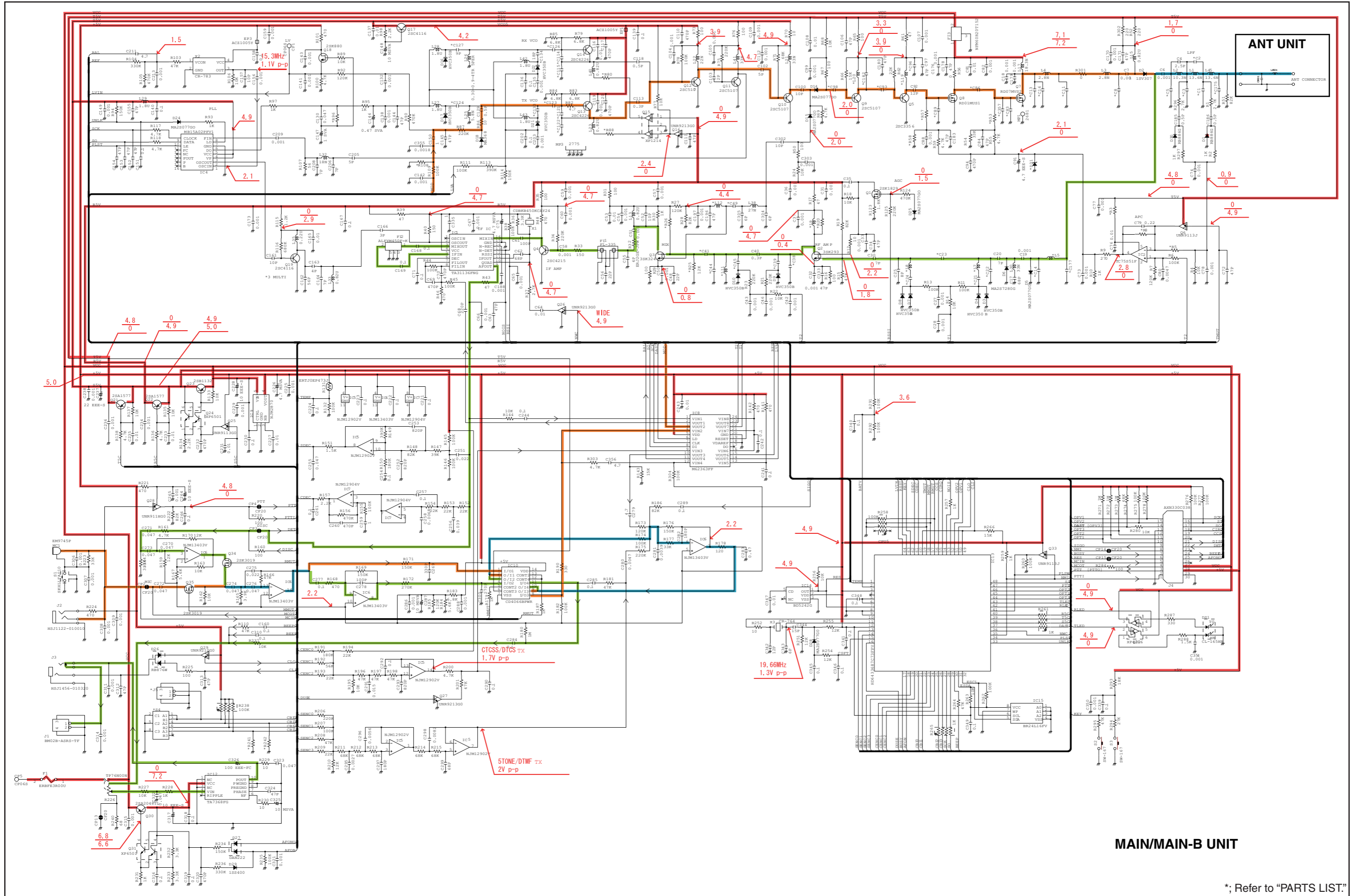
• ANT UNIT  
(BOTTOM VIEW)



• CONNECT UNIT  
(BOTTOM VIEW)



# VOLTAGE DIAGRAM



\*; Refer to "PARTS LIST."



# SERVICE MANUAL

UHF TRANSCEIVER

**IC-F24/S**

**IC-F25/S**

**IC-F26/S**

**IC-F26-L**

**IC-F4018**

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S-14116IZ-C1-②  
Mar. 2008

## INTRODUCTION

This service manual describes the latest service information for the **IC-F24/S IC-F25/S IC-F26/S IC-F26-L IC-F4018** UHF TRANSCEIVER at the time of publication.

| MODEL | VERSION | FREQ. (MHz) | CHANNEL SPACING (kHz) | CHANNELS |     |
|-------|---------|-------------|-----------------------|----------|-----|
| F24   | USA-02  | 400-470     | 12.5/25.0             | 16CH     |     |
|       | USA-03  | 450-512     |                       |          |     |
|       | USA-04  | 400-470     |                       |          |     |
|       | USA-05  | 450-512     |                       |          |     |
|       | GEN-02  | 400-470     |                       |          |     |
|       | GEN-03  | 450-520     |                       |          |     |
| F25   | EUR-02  | 400-470     | 12.5/20.0/25.0        |          |     |
| F26   | RUS-02  |             | 12.5/25.0             |          |     |
|       | RUS-05  |             |                       |          |     |
|       | CHN-02  |             |                       |          |     |
| F26-L | EXP-01  | 350-390     |                       |          | 2CH |
|       | CHN-01  |             |                       |          |     |
| F24S  | USA-02  | 400-470     |                       |          |     |
|       | USA-03  | 450-512     |                       |          |     |
|       | USA-04  | 400-470     |                       |          |     |
|       | GEN-02  | 450-520     |                       |          |     |
|       | GEN-03  |             |                       |          |     |
| F25S  | EUR-02  | 400-470     | 12.5/20.0/25.0        |          |     |
| F26S  | RUS-02  |             | 12.5/25.0             |          |     |
|       | RUS-05  |             |                       |          |     |
| F4018 | CHN-01  |             |                       |          |     |

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

## CAUTION

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

**DO NOT** expose the transceiver to rain, snow or any liquids.

**DO NOT** reverse the polarities of the power supply when connecting the transceiver.

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

## ORDERING PARTS

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

- 10-digit Icom parts numbers
- Component name
- Equipment model name and unit name
- Quantity required

### <ORDER EXAMPLE>

1110003491 S.IC TA31136FNG IC-F24 MAIN UNIT 5 pieces  
8820001210 Screw 2438 screw IC-F24 Top cover 10 pieces

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

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(IC-F24)

## REPAIR NOTES

1. Make sure that the problem is internal before disassembling the transceiver.
2. **DO NOT** open the transceiver until the transceiver 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. An insulated tuning tool **MUST** be used for all adjustments.
5. **DO NOT** keep power ON for a long time when the transceiver is defective.
6. **DO NOT** transmit power into a Standard Signal Generator or a Sweep Generator.
7. **ALWAYS** connect a 50 dB to 60 dB attenuator between the transceiver and a Deviation Meter or Spectrum Analyzer when using such test equipment.
8. **READ** the instructions of test equipment thoroughly before connecting a test equipment to the transceiver.



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## TABLE OF CONTENTS

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**SECTION 1 SPECIFICATIONS**

**SECTION 2 INSIDE VIEWS**

**SECTION 3 DISASSEMBLY INSTRUCTION**

**SECTION 4 CIRCUIT DESCRIPITON**

|     |                            |     |
|-----|----------------------------|-----|
| 4-1 | RECEIVER CIRCUITS.....     | 4-1 |
| 4-2 | TRANSMITTER CIRCUITS.....  | 4-2 |
| 4-3 | PLL CIRCUITS.....          | 4-4 |
| 4-4 | OTHER CIRCUITS.....        | 4-5 |
| 4-5 | POWER SUPPLY CIRCUITS..... | 4-5 |
| 4-6 | PORT ALLOCATIONS.....      | 4-5 |

**SECTION 5 ADJUSTMENT PROCEDURES**

|     |                            |      |
|-----|----------------------------|------|
| 5-1 | PREPARATION.....           | 5-1  |
| 5-2 | FREQUENCY ADJUSTMENTS..... | 5-6  |
| 5-3 | TRANSMIT ADJUSTMENTS.....  | 5-8  |
| 5-4 | RECEIVERY ADJUSTMENTS..... | 5-10 |

**SECTION 6 PARTS LIST**

**SECTION 7 MECHANICAL PARTS**

**SECTION 8 BOARD LAYOUTS**

**SECTION 9 BLOCK DIAGRAM**

**SECTION 10 VOLTAGE DIAGRAM**

**SECTION 11 BC-160 (Optional)**

# SECTION 1

# SPECIFICATIONS

## ■ GENERAL

- Frequency coverage : (Refer to the "INTRODUCTION")
- Mode : FM
- Channel spacing : (Refer to the "INTRODUCTION")
- Number of conventional channels : 16 ch/2 ch (Refer to the "INTRODUCTION")
- Antenna impedance : 50 Ω
- Operating temperature range : -30°C to +60°C (-22°F to +140°F) Other than [F25/S]  
-25°C to +55°C [F25/S]
- Power supply requirement : Specified Icom's battery pack only (7.2 V DC nominal; negative ground)
- Current drain (at 7.2 V DC ; approx.) :

| RECEIVING |            | TRANSMITTING  |              |
|-----------|------------|---------------|--------------|
| Stand-by  | Max. audio | High (at 4 W) | Low (at 1 W) |
| 75 mA     | 300 mA     | 1.6 A         | 0.8 A        |

- Dimensions (projections not included) : 53.0 (W)×120.0 (H)×38.0 (D) mm; 2<sup>3</sup>/<sub>32</sub>(W)×4<sup>23</sup>/<sub>32</sub>(H)×1<sup>1</sup>/<sub>2</sub>(D) in
- Weight (Including BP-231) : Approx. 260 g (9<sup>3</sup>/<sub>16</sub> oz)

## ■ TRANSMITTER

- Output power (at 7.2 V DC) : 4 W (Hi)/2 W (L2)/1 W (L1)
- Modulation : Variable reactance frequency modulation
- Maximum permissible deviation : ±5.0 kHz (Wide), ±4.0 kHz (Middle), ±2.5 kHz (Narrow)
- Frequency error : ±2.5 ppm
- Spurious emissions : 70 dB (min.) Other than [F25/S]  
0.25 μW (≤ 1 GHz), 1.0 μW (> 1 GHz) [F25/S]
- Adjacent channel power : 70 dB min. (75dB typ.) for Wide  
70 dB min. (73dB typ.) for Middle  
60 dB min. (68dB typ.) for Narrow
- Audio harmonic distortion : 3% typ. (1 kHz, 40% deviation)
- FM Hum and Noise (without CCITT filter) : 40 dB min. (46 dB typ.) for Wide  
(Other than [F25/S]) 34 dB min. (40 dB typ.) for Narrow
- Residual modulation (with CCITT filter) : 45 dB min. (55 dB typ.) for Wide  
([F25/S] only) 43 dB min. (53 dB typ.) for Middle  
40 dB min. (50 dB typ.) for Narrow
- Limiting charact of modulator : 60–100% of maximum deviation
- Microphone impedance : 2.2 kΩ

## ■ RECEIVER

- Receive system : Double conversion superheterodyne system
- Intermediate frequencies : 1st IF: 46.35 MHz, 2nd IF: 450 kHz
- Sensitivity : 0.25 μV (-119 dBm) typ. at 12 dB SINAD Other than [F25/S]  
-4 dBμV (-111 dBm) emf typ. at 20 dB SINAD [F25/S]
- Adjacent channel selectivity : 70 dB min. (75 dB typ.) for Wide  
70 dB min. (73 dB typ.) for Middle  
60 dB min. (65 dB typ.) for Narrow
- Spurious response : 70 dB min.
- Intermodulation rejection ratio : 70 dB min. (74 dB typ.) Other than [F25/S]  
65 dB min. (67 dB typ.) [F25/S]
- Hum and Noise (without CCITT filter) : 40 dB min. (45 dB typ.) for Wide  
(except [EUR] and [CHN]) 34 dB min. (40 dB typ.) for Narrow
- Hum and Noise (with CCITT filter) : 45 dB min. (55 dB typ.) for Wide  
([EUR] and [CHN] only) 43 dB min. (53 dB typ.) for Middle  
40 dB min. (50 dB typ.) for Narrow
- Audio output power : 0.5 W typ. at 5% distortion with an 8 Ω load
- Squelch sensitivity (at threshold) : 0.25 μV typ. Other than [F25/S]  
-4 dBμV emf typ. [F25/S]
- Output impedance (Audio) : 8 Ω

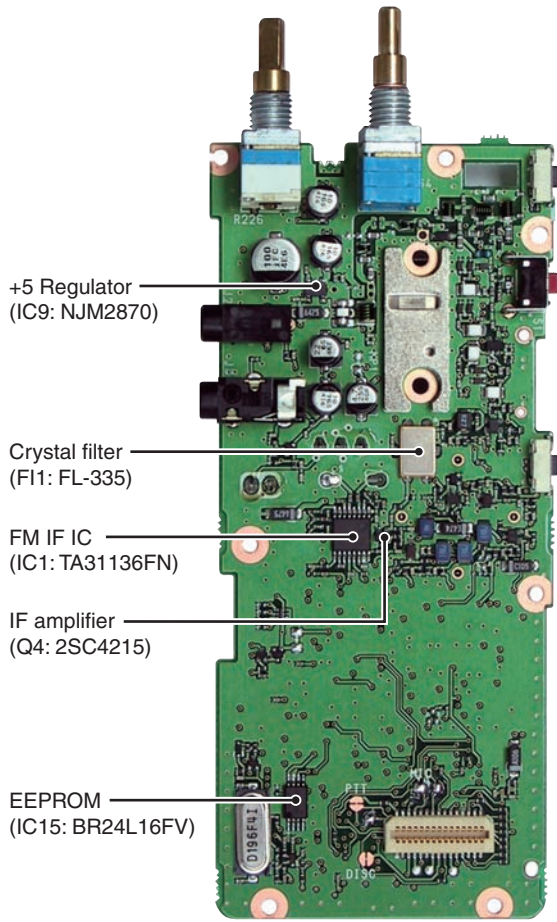
Specifications are measured in accordance with EIA-152-C/204D, TIA-603, EN 300 086 or GB/T 15844. 1-1995.

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

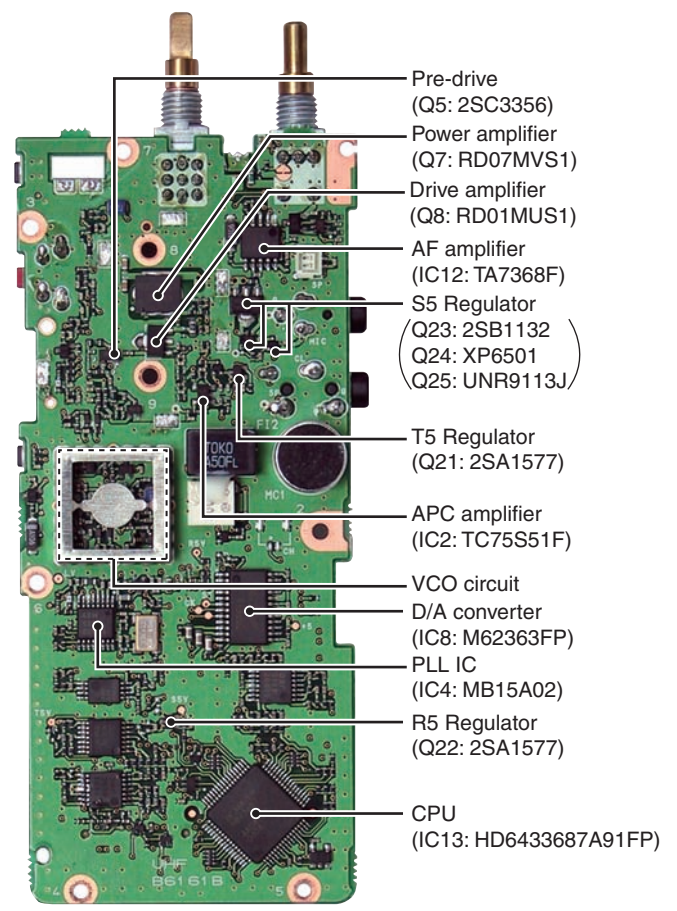
# SECTION 2

# INSIDE VIEWS

TOP VIEW



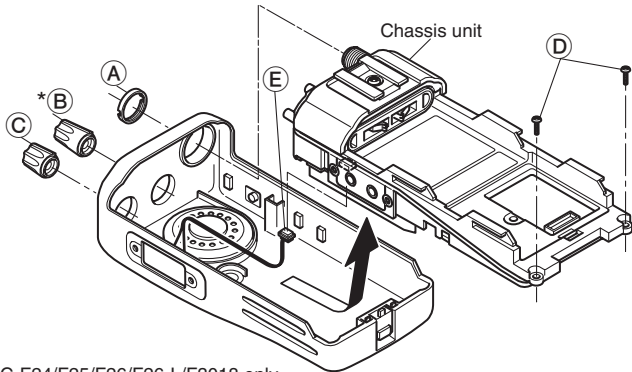
BOTTOM VIEW



# SECTION 3 DISASSEMBLY INSTRUCTION

## 1. REMOVING THE CHASSIS UNIT

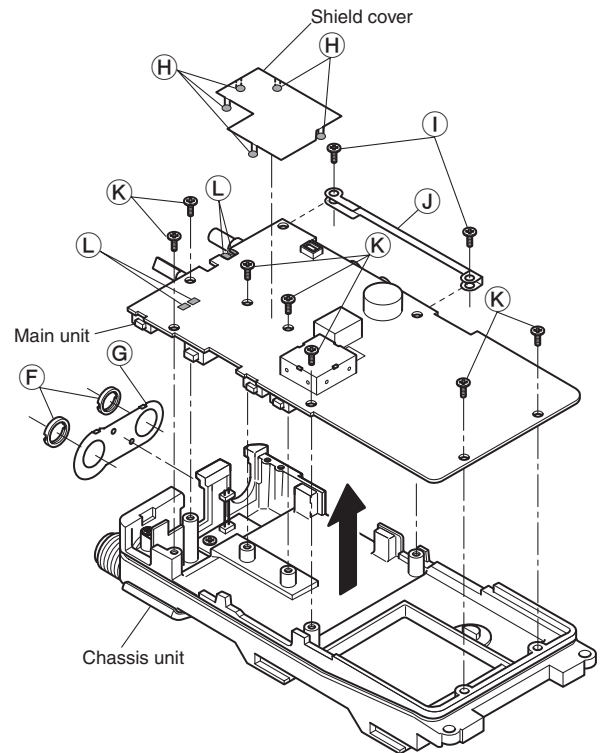
- ① Unscrew 1 nut (A), and remove 2 knobs (B), (C).
- ② Unscrew 2 screws (D).
- ③ Take off the chassis unit in the direction of the arrow.
- ④ Unplug the connector (E) from the chassis unit.



\*: IC-F24/F25/F26/F26-L/F3018 only

## 2. REMOVING THE MAIN UNIT

- ① Unscrew 2 nuts (F), and remove the top plate (G).
- ② Unsolder 5 points (H), and remove the shield cover.
- ③ Unscrew 2 screws (I), and remove the side plate (J).
- ④ Unscrew 7 screws (K).
- ⑤ Unsolder 4 points (L), and take off the main unit in the direction of the arrow.



## 4-1 RECEIVER CIRCUITS

### 4-1-1 ANTENNA SWITCHING CIRCUIT

The antenna switching circuit functions as a low-pass filter while receiving and a resonator circuit while transmitting. This circuit does not allow transmit signals to enter the receiver circuits.

Received signals enter the antenna connector (CHASSIS; J1) and pass through the low-pass filter (L1, L2, L45, C1-C6, C175). The filtered signals are passed through the  $\frac{1}{4}\lambda$  type antenna switching circuit (D2, D5, L5) and then applied to the RF circuit.

### 4-1-2 RF CIRCUIT

The RF circuit amplifies signals within the range of frequency coverage and filters out-of-band signals.

The signals from the antenna switching circuit pass through the bandpass filter (D3, D4, D7, D8, L7, L8, C21, C23, C24). The filtered signals are amplified at the RF amplifier (Q2) and then passed through the another bandpass filter (D9, D10, C39, C40, C45) to suppress unwanted signals. The filtered signals are applied to the 1st mixer circuit.

D3, D4, D7-D10 employ varactor diodes, that are controlled by the CPU via the D/A converter (IC8), to track the bandpass filter. These varactor diodes tune the center frequency of an RF passband for wide bandwidth receiving and good image response rejection.

### 4-1-3 1ST MIXER AND 1ST IF CIRCUITS

The 1st mixer circuit converts the received signal into fixed frequency of the 1st IF signal with the PLL output frequency. By changing the PLL frequency, only the desired frequency passes through a crystal filter at the next stage of the 1st mixer.

The RF signals from the bandpass filter are mixed with the 1st LO signals, where come from the RX VCO circuit via the BPF (L12, L38, C49, C304, C305), at the 1st mixer circuit (Q3) to produce a 46.35 MHz 1st IF signal. The 1st IF signal is passed through a monolithic filter (FI1) in order to obtain selection capability and to pass only the desired signal. The filtered signal is applied to the 2nd IF circuit after being amplified at the 1st IF amplifier (Q4).

### 4-1-4 2ND IF AND DEMODULATOR CIRCUITS

The 2nd mixer circuit converts the 1st IF signal into a 2nd IF signal. The double-conversion superheterodyne system (which converts receive signals twice) improves the image rejection ratio and obtains stable receiver gain.

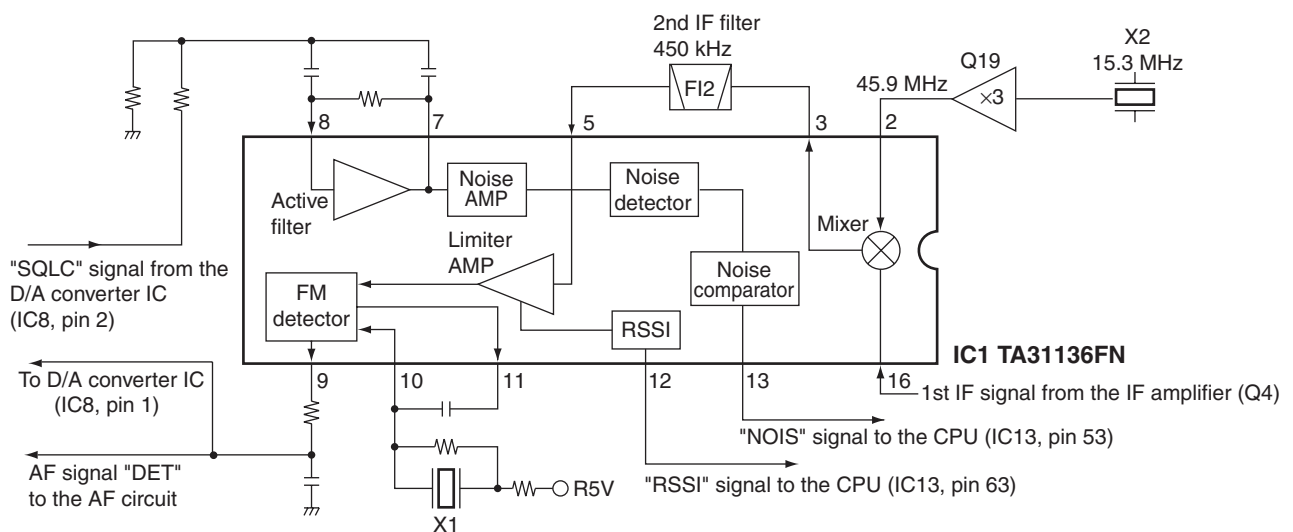
The 1st IF signal from the IF amplifier (Q4) is applied to the 2nd mixer section of the FM IF IC (IC1, pin 16), and is mixed with the 2nd LO signal to be converted into a 450 kHz 2nd IF signal.

The FM IF IC (IC1) contains the 2nd mixer, 2nd local oscillator, limiter amplifier, quadrature detector, active filter and noise amplifier circuits. The 2nd LO signal (45.9 MHz) is produced at the PLL circuit by tripling it's reference frequency (15.3 MHz).

The 2nd IF signal from the 2nd mixer (IC1, pin 3) passes through the ceramic filter (FI2) to remove unwanted heterodyned frequencies. It is then amplified at the limiter amplifier section (IC1, pin 5) and applied to the quadrature detector section (IC1, pins 10, 11) to demodulate the 2nd IF signal into AF signals.

The demodulated AF signals are output from pin 9 (IC1) as "DET" signal, and are then applied to the AF circuit.

## • 2ND IF AND DEMODULATOR CIRCUITS



#### 4-1-5 AF AMPLIFIER CIRCUIT

The AF amplifier circuit amplifies the demodulated AF signals to drive a speaker.

The AF signals from the FM IF IC (IC1, pin 9) pass through the high-pass filter (IC6, pins 3 and 1) to suppress unwanted harmonic components. The signals pass through the RX mute switch (Q34) which is controlled by "RMUT" signal from the CPU (IC13, pin 56), and are then applied to another high-pass filter (IC6, pins 13 and 14). The filtered signals pass through the low-pass filter (IC6, pins 6 and 7) via the analog switch (IC10, pins 1 and 2). The signals are applied to the analog switch (IC10, pin 10) again, and are then applied to the AF power amplifier (IC12, pin 4) via the AF volume (R226). The amplified AF signals are output from pin 10, and are then applied to the internal speaker which is connected to J1 via the [SP] jack (J3).

#### 4-1-6 RECEIVE MUTE CIRCUITS

##### • NOISE SQUELCH

A squelch circuit cuts out AF signals when no RF signals are received. By detecting noise components in the AF signals, the squelch circuit switches the AF mute switch.

Some noise components in the AF signals from the FM IF IC (IC1, pin 9) are applied to the D/A converter (IC8, pin 1) as "DET" signal, and are then output from pin 2. The signals are applied to the active filter section in the FM IF IC (IC1, pin 8). The active filter section filters and amplifies noise components. The amplified signals are converted into the pulse-type signals at the noise detector section and output from pin 13 as "NOIS" signal.

The "NOIS" signal from the FM IF IC is applied to the CPU (IC13, pin 53). Then the CPU analyzes the noise condition and outputs the AF mute control signal from the CPU (pin 56) as "RMUT" signal from pin 56. The signal is applied to the RX mute switch (Q34) to control the AF signal muting.

##### • CTCSS AND DTCS

The tone squelch circuit detects tone signals and opens the squelch only when the receiving signal contains matched subaudible tone (CTCSS or DTCS). When tone squelch is in use, and a signal with a mismatched or no subaudible tone is received, the tone squelch circuit mutes the AF signals even when noise squelch is open.

A portion of the "DET" signals from the FM IF IC (IC1, pin 9) passes through the low-pass filter (IC7, pins 5 and 7) to remove AF (voice) signals, and are then applied to the amplifier (IC7, pin 3). The amplified signals are applied to the CTCSS or DTCS decoder inside of the CPU (IC13, pin 60) as the "CDEC" signal. The CPU outputs AF mute control signal from pin 56, and is then applied to the RX mute switch (Q34) and analog switch (IC10, pins 12 and 13) to control AF signals muting as "RMUT" signal.

#### 4-2 TRANSMITTER CIRCUITS

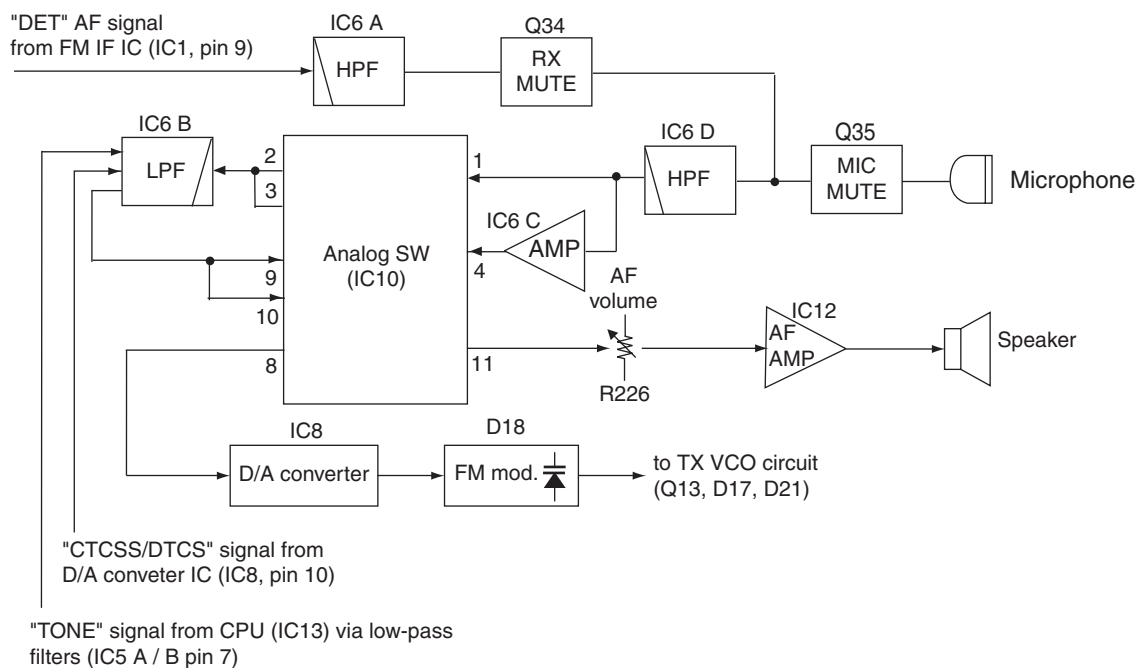
##### 4-2-1 MICROPHONE AMPLIFIER CIRCUIT

The microphone amplifier circuit amplifies audio signals within +6 dB/octave pre-emphasis characteristics from the microphone to a level needed for the modulation circuit.

The AF signals from the microphone are passed through the microphone mute switch (Q35), and are then applied to the amplifier (IC6, pins 9 and 8) via the high-pass filter (IC6, pins 13 and 14). The amplified signals are applied to the analog switch (IC10, pin 4), and outputs from pin 3. The signals pass through the low-pass filter (IC6, pins 6 and 7), then applied to the analog switch (IC10, pin 9) again and output from pin 8.

The signals are applied to the D/A converter (IC8, pin 4). The converted signals output from pin 3, and applied to the modulation circuit (D18) as "MOD" signal.

#### • ANALOG SWITCHING CIRCUITS



### 4-2-2 MODULATION CIRCUITS

The modulation circuit modulates the VCO oscillating signal (RF signal) using the audio signals from the microphone.

The AF signals from the D/A converter (IC8, pin 3) change the reactance of varactor diode (D18) to modulate the oscillated signal at the TX VCO circuit (Q13, D17, D21). The modulated VCO signal is amplified at the buffer amplifiers (Q10, Q12) and then applied to the drive amplifier circuit via the T/R switch (D14).

The CTCSS/DTCS signals ("CENC0," "CENC1," "CENC2") from the CPU (IC13, pins 23–25) pass through the low-pass filter (IC5, pins 12 and 14) via 3 registers (R191–R193) to change its waveform. Then the signals are applied to the D/A converter (IC8, pin 9). The output signals from the D/A converter (IC8, pin 10) pass through the low-pass filter (IC6, pins 6 and 7) to be mixed with "MOD" signal, and then applied to the D/A converter again (IC8, pin 4) after passing through the analog switch (IC10, pins 8 and 9).

### 4-2-3 TRANSMIT AMPLIFIER CIRCUITS

Transmit amplifiers amplify the TX VCO oscillating signal to transmit power level.

The modulated RF signal from the TX VCO circuit passes through the T/R switch (D14) and is amplified at the YGR (Q9), pre-drive (Q5), drive (Q8), and power (Q7) amplifiers to obtain 4 W (max.) of RF power (at 7.2 V DC).

The amplified signal passes through the low-pass filter (L4, C11, C13, C16), antenna switch (D2), the low-pass filter (L1–L3, C2–C5, C175, C176) and power detector (D1, D30), then applied to the antenna connector (CHASSIS unit; J1).

### 4-2-4 APC CIRCUITS

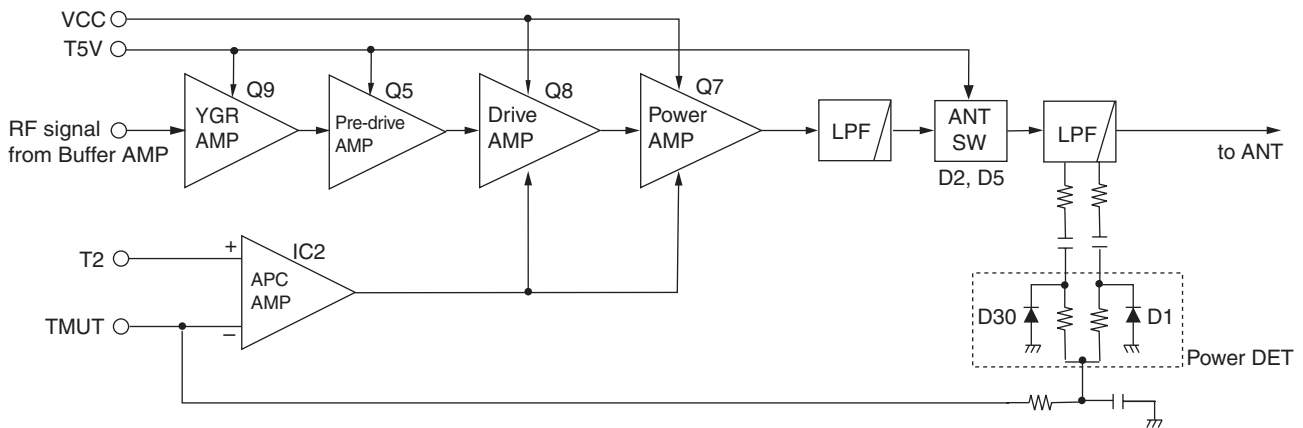
The bias current of the drive (Q8) and power (Q7) amplifiers are controlled by the APC circuit.

The APC circuit (IC2, D1, D30) protects drive and power amplifiers from the reflected signal, and selects output power of HIGH, LOW2 or LOW1.

The power detector (D1, D30) detects transmit output power and converts it into DC voltage. The DC voltage is at a minimum level when the antenna impedance is matched to 50 Ω, and increased when mismatched.

The detected voltage is applied to the differential amplifier (IC2, pin 3), and the "T2" signal from the D/A converter (IC8, pin 23), controlled by the CPU (IC13), is applied to pin 1 for reference. When antenna impedance is mismatched, the detected voltage exceeds the power setting voltage. Then the output voltage of the differential amplifier (IC2, pin 4) controls the input current of the drive (Q8), and power (Q7) amplifiers to reduce the output power.

### • APC CIRCUITS



## 4-3 PLL CIRCUITS

### 4-3-1 PLL CIRCUIT

A PLL circuit provides stable oscillation for the transmit frequency and the receive 1st LO frequency. The PLL output compares the phase of the divided VCO frequency to the reference frequency. The PLL output frequency is controlled by the divided ratio (N-data) of a programmable divider.

The PLL circuit contains the TX/RX VCO circuits (TX: Q13, D17, D21; RX: Q14, D16, D22). The oscillated signal is amplified at the buffer amplifiers (Q11, Q12) and then applied to the PLL IC (IC4, pin 8) after being passed through the low-pass filter (L32, C206, C208).

The PLL IC (IC4) contains a prescaler, programmable counter, programmable divider and phase detector, charge pump, etc. The entered signal is divided at the prescaler and programmable counter section by the N-data ratio from the CPU. The divided signal is detected on phase at the phase detector using the reference frequency. The phase detected signal is applied to the charge pump to be converted into the DC voltage, and output from pin 5. After passes through the loop filter (C130, C138, C146, C147, R95–R97), the DC voltage is applied to the TX/RX VCO as the lock voltage.

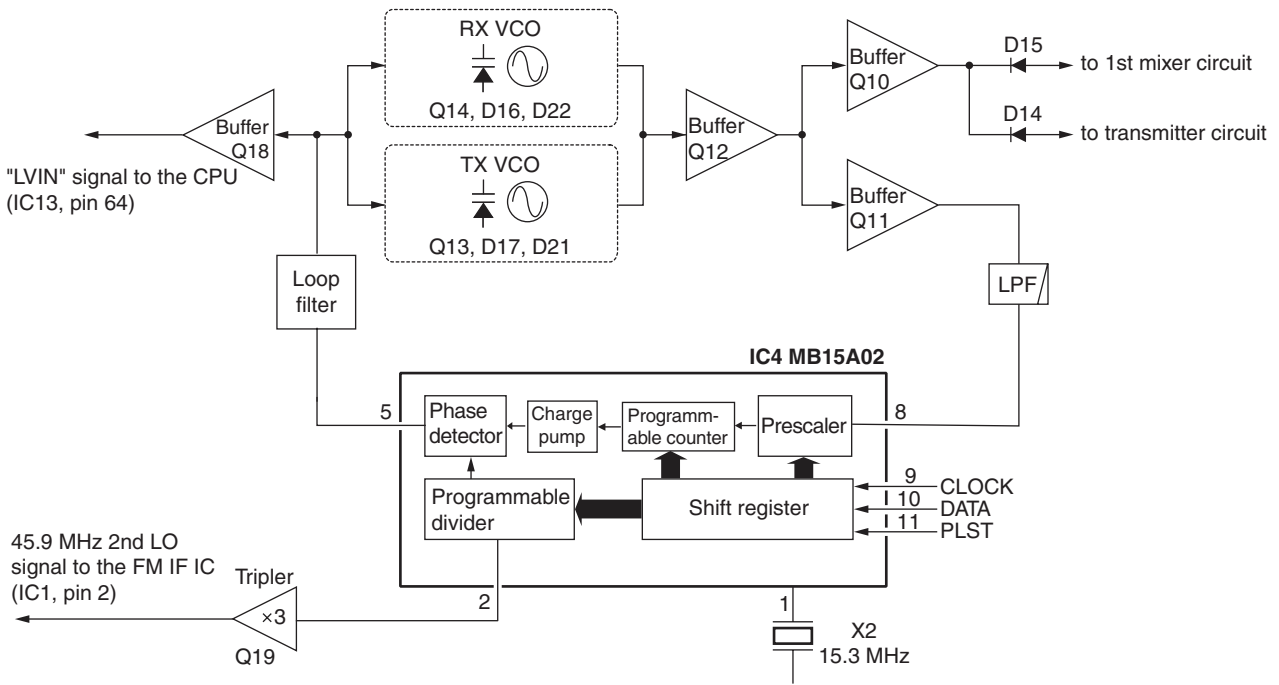
If the oscillated signal drifts, its phase changes from that of the reference frequency, causing a lock voltage change to compensate for the drift in the oscillated frequency.

### 4-3-2 VCO CIRCUITS

The VCO circuit contains a separate RX VCO (Q14, D16, D22) and TX VCO (Q13, D17, D21). The oscillated signal is amplified at the buffer amplifiers (Q10, Q12) and is then applied to the T/R switch (D14 for TX, D15 for RX). Then the receive 1st LO (RX) signal is applied to the 1st mixer circuit (Q3) and the transmit (TX) signal to the pre-drive amplifier (Q9).

A portion of the signal from the buffer amplifier (Q12) is fed back to the PLL IC (IC4, pin 8) via the buffer amplifier (Q11) and low-pass filter (L32, C206, C208) as the comparison signal.

### • PLL CIRCUITS





## 4-4 OTHER CIRCUITS

### LED CONTROL CIRCUITS

The LED control circuit is composed of the CPU (IC13), LED driver (Q32) and LED (DS1).

The CPU outputs “RLED” and “TLED” signals from the pins 42 and 43. The signals are applied to the LED driver (Q32, pins 2 and 5). The driver outputs LED control signals to the LEDs (DS1).

| CONDITION                      | COLOR               |
|--------------------------------|---------------------|
| RECEIVING (2/5-TONE CODE)      | ORANGE (Lighting)   |
| LOW BATTERY (Nearly exhausted) | RED (Blinks Slowly) |
| LOW BATTERY (Almost exhausted) | RED (Blinks Fast)   |
| CLONING                        | ORANGE (Blinking)   |
| RECEIVING/SQUELCH OPEN         | GREEN (Lighting)    |
| TRANSMITTING                   | RED (Lighting)      |

## 4-5 POWER SUPPLY CIRCUIT

### VOLTAGE LINE

| LINE | DESCRIPTION  |
|------|--|
| VCC  | The voltage from the connected battery pack.   |
| +5V  | Common 5 V converted from the VCC line at the +5 regulator circuit (IC9). The output voltage is supplied to the D/A converter (IC8), analog SW (IC10), etc.  |
| S5V  | Common 5 V converted from the VCC line at the S5 regulator circuit (Q23–Q25). The output voltage is supplied to the ripple filter (Q17), PLL IC (IC4), etc.  |
| R5V  | Receive 5 V converted from the S5V line at the R5 regulator circuit (Q22). The output voltage is supplied to the tripler (Q19), FM IF IC (IC1), IF amplifier (Q4), VCO switch (Q15, Q16), 1st mixer (Q3), etc. |
| T5V  | Transmit 5 V converted from the S5V line at the T5 regulator circuit (Q21). The output voltage is supplied to the YGR (Q9), pre-drive (Q5), APC amplifier (IC2), etc.  |

## 4-6 PORT ALLOCATION

### 4-6-1 D/A CONVERTER IC (IC8)

| Pin number | Port name | Description   |
|------------|-----------|---|
| 11         | BAL       | Outputs the modulation balance level control signal. The signal is applied to the reference frequency crystal oscillator (X2, pin 1).   |
| 14         | LVA       | Outputs the PLL lock voltage control signal. The output signal is applied to the RX VCO (Q14, D16, D22) and TX VCO (Q13, D17, D21).   |
| 15         | REF       | Outputs the reference oscillator correcting voltage. The voltage is applied to the reference frequency crystal oscillator (X2, pin 1).  |
| 22         | T1        | Outputs the bandpass filter tuning signal. The output signal is applied to the bandpass filters (D3, D4, D7, D8).   |
| 23         | T2        | <ul style="list-style-type: none"> <li>• Outputs the bandpass filter tuning signal during receive. The output signal is applied to the bandpass filters (D9, D10).</li> <li>• Outputs the TX power control signal during transmit. The output signal is applied to the APC amplifier (IC2, pin 1).</li> </ul> |

#### 4-6-2 CPU (IC13)

| Pin number | Port name | Description  |
|------------|-----------|--|
| 1          | TEMP      | Input port for the transceiver's internal temperature detecting signal.  |
| 2          | BATV      | Input port for the detect signal for connecting battery pack's voltage.  |
| 7          | RES       | Input port for power reset signal.   |
| 13         | SENC0     | Output single tone encoder signal.   |
| 14         | SENC1     |  |
| 16         | DUSE      | Outputs DTSC LPF control signal.   |
| 18         | AFON      | Outputs AF power amplifier control signal.   |
| 19         | SENC2     | Output single tone encoder signal.   |
| 20         | SENC3     |  |
| 21         | CBI0      | Input ports for rotary selector.   |
| 22         | CBI1      |  |
| 23         | CENC0     | Output CTCSS/DTCS signals.   |
| 24         | CENC1     |  |
| 25         | CENC2     |  |
| 26         | CBI2      | Input ports for rotary selector.   |
| 27         | CBI3      |  |
| 28         | SCK       | Outputs serial clock signal to the PLL IC (IC4, pin 9), D/A convertor (IC6, pin 7), etc.   |
| 29         | SO        | Outputs serial data to the PLL IC (IC6, pin 8) and D/A convertor (IC6, pin 8).   |
| 30         | BEEP      | Outputs beep audio signals.  |
| 31         | ESDA      | I/O port for data signals from/to the EEPROM (IC15, pin 5).  |
| 32         | ESCL      | Outputs clock signal to the EEPROM (IC15, pin 6).  |
| 33         | UNLK      | Input port for unlock signal from PLL IC.  |
| 34         | PLST      | Outputs strobe signals to the PLL IC (IC4, pin 11).  |
| 36         | NWC       | Output/input port for wide/narrow control signal.  |
| 37         | DAST      | <ul style="list-style-type: none"> <li>• Outputs strobe signals to the D/A convertor (IC8, pin 6).</li> <li>• Input port for the connecting battery type detect signal.</li> </ul> |
| 38         | S5C       | Outputs power save control signal.   |
| 39         | T5C       | Outputs T5 regulator control signal.<br>Low: While transmitting  |
| 40         | R5C       | Outputs R5 regulator control signal.<br>Low: While receiving   |

| Pin number | Port name | Description  |
|------------|-----------|--|
| 42         | RLED      | Outputs receiving LED control signal.  |
| 43         | TLED      | Outputs transmitting LED control signal.   |
| 44         | OPT3      | I/O ports for option unit.   |
| 45         | OPT1      |  |
| 46         | OPT2      |  |
| 47         | PTT       | Input port for the PTT switch detection signal.<br>Low : While the PTT switch is pushed. |
| 48         | SI        | Serial Bus inputport.  |
| 49         | CLI       | Input port for the cloning data signal.  |
| 50         | CLO       | Outputs the cloning data signal.   |
| 53         | NOIS      | Input port for the noise signal from the FM IF IC (MAIN unit; IC1, pin 13).              |
| 54         | CIRQ      | Input port for option unit detection.  |
| 55         | CCS       | Outputs chip select signal.  |
| 56         | TMUT      | Outputs transmit mute signal.  |
| 57         | RMUT      | Input port for AF mute signal from the RX circuit.                                       |
| 58         | MMUT      | Outputs MIC mute signal.   |
| 59         | REMO      | Inputs key signal from remote mic.   |
| 60         | CDEC      | Input port for CTCSS/DTCS signal from the amplifier (IC5, pin 8).                        |
| 61         | SDEC      | Input port for single tone decode signal from the LPF (IC5, pin 8).                      |
| 62         | KEY       | Inputs key input signal.   |
| 63         | RSSI      | Input port for the S-meter signal from the FM IF IC (IC1, pin 12).                       |
| 64         | LVIN      | Input port for the PLL lock voltage.   |

# SECTION 5 ADJUSTMENT PROCEDURE

## 5-1 PREPARATION

### ■ REQUIRED EQUIPMENTS

| EQUIPMENT                        | SPECIFICATION   | EQUIPMENT                       | SPECIFICATION  |
|----------------------------------|---|---------------------------------|--|
| Adjustment Software              | "CS-F14 ADJ" (Revision 1.0 or later)  | JIG cable (see the page 5-3)    | Modified OPC-478U/UC (USB type) or OPC-478 (RS-232 type)                             |
| Audio Generator                  | Frequency range : 300–3000 Hz<br>Output level : 1–500 mV  | Attenuator                      | Power attenuation : 30 dB<br>Capacity : More than 6 W                                |
| RF Power Meter (terminated type) | Measuring range : 1–6 W<br>Frequency range : 100–600 MHz<br>Impedance : 50 Ω<br>SWR : Less than 1.2 : 1 | Standard Signal Generator (SSG) | Frequency range : 0.1–600 MHz<br>Output level : 0.1 mV to 32 mV<br>(–127 to –17 dBm) |
| Frequency Counter                | Frequency range : 0.1–600 MHz<br>Frequency accuracy : ±1 ppm or better<br>Input level : Less than 1 mW  | AC Millivoltmeter               | Measuring range : 10 mV to 10 V  |
|                                  |   | Oscilloscope                    | Frequency range : DC–20 MHz<br>Measuring range : 0.01–20 V                           |
| Modulation Analyzer              | Frequency range : 30–600 MHz<br>Measuring range : 0 to ±10 kHz  | External Speaker                | Input impedance : 8 Ω<br>Capacity : More than 5 W                                    |

### ■ SYSTEM REQUIREMENTS

- Microsoft® Windows® 98/SE/ME/2000/XP
- RS232C/USB port

### ■ BEFORE STARTING SOFTWARE ADJUSTMENT

Clone adjustment frequencies, TX power, CTCSS frequency, DTCS code and IF bandwidth into the transceiver using with the CS-F14 CLONING SOFTWARE before starting adjustment. See the next page for detail.

**CAUTION!** BACK UP the originally programmed memory data in the transceiver before programming the adjustment frequencies. When program the adjustment frequencies into the transceiver, the transceiver's memory data will be overwritten and lose original memory data at the same time.

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## ADJUSTMENT CHANNELS

Create "icf" file/files for adjustment as below, then clone it into the transceiver before starting adjustment.

**<IC-F24/F25/F26/F4018>  
(16CH version)**

**<IC-F26-L>**

**(For [Low band])**

- ① Create the icf file "F24 ADJ CH.icf."

**"F24Lowband ADJ CH.icf"**

| CH | Atr | Inh | Frequency (MHz) |    |        | C.Tone |    |        | TOT | RF PWR | S |
|----|-----|-----|-----------------|----|--------|--------|----|--------|-----|--------|---|
|    |     |     | RX              | TX | TX Inh | W/N    | RX | TX     |     |        |   |
| 1  | AB  |     | 400.100000      | <- |        | W      |    |        |     | L1     | C |
| 2  |     |     | 489.900000      | <- |        | W      |    |        |     | L1     | C |
| 3  |     |     | 400.100000      | <- |        | W      |    |        |     | H      | C |
| 4  |     |     | 400.100000      | <- |        | W      |    |        |     | L2     | C |
| 5  |     |     | 400.100000      | <- |        | W      |    |        |     | L1     | C |
| 6  |     |     | 435.000000      | <- |        | N      |    |        |     | L1     | C |
| 7  |     |     | 435.000000      | <- |        | W      |    |        |     | L1     | C |
| 8  |     |     | 435.000000      | <- |        | N      |    |        |     | L1     | C |
| 9  |     |     | 435.000000      | <- |        | N      |    | .007N  |     | L1     | C |
| 10 |     |     | 435.000000      | <- |        | W      |    | .007N  |     | L1     | C |
| 11 |     |     | 435.000000      | <- |        | W      |    | .151.4 |     | L1     | C |
| 12 |     |     | 400.000000      | <- |        | i      | W  |        |     | L1     | C |
| 13 |     |     |                 |    |        |        |    |        |     |        |   |
| 14 |     |     |                 |    |        |        |    |        |     |        |   |

- ② Clone the icf file into the transceiver.

**(For [High band])**

- ① Create the icf file "F24 ADJ CH.icf."

**"F24Highband ADJ CH.icf"**

| CH | Atr | Inh | Frequency (MHz) |    |        | C.Tone |    |        | TOT | RF PWR | S |
|----|-----|-----|-----------------|----|--------|--------|----|--------|-----|--------|---|
|    |     |     | RX              | TX | TX Inh | W/N    | RX | TX     |     |        |   |
| 1  | AB  |     | 450.100000      | <- |        | W      |    |        |     | L1     | C |
| 2  |     |     | 511.900000      | <- |        | W      |    |        |     | L1     | C |
| 3  |     |     | 450.100000      | <- |        | W      |    |        |     | H      | C |
| 4  |     |     | 450.100000      | <- |        | W      |    |        |     | L2     | C |
| 5  |     |     | 450.100000      | <- |        | W      |    |        |     | L1     | C |
| 6  |     |     | 485.000000      | <- |        | N      |    |        |     | L1     | C |
| 7  |     |     | 485.000000      | <- |        | W      |    |        |     | L1     | C |
| 8  |     |     | 485.000000      | <- |        | N      |    |        |     | L1     | C |
| 9  |     |     | 485.000000      | <- |        | N      |    | .007N  |     | H      | C |
| 10 |     |     | 485.000000      | <- |        | W      |    | .007N  |     | L1     | C |
| 11 |     |     | 485.000000      | <- |        | W      |    | .151.4 |     | L1     | C |
| 12 |     |     | 450.100000      | <- |        | i      | W  |        |     | L1     | C |
| 13 |     |     |                 |    |        |        |    |        |     |        |   |
| 14 |     |     |                 |    |        |        |    |        |     |        |   |

- ② Clone the icf file into the transceiver.

- ① Create the icf file "F26-L ADJ CH.icf."

**"F26-L ADJ CH.icf"**

| CH | Atr | Inh | Frequency (MHz) |    |        | C.Tone |    |        | TOT | RF PWR | S |
|----|-----|-----|-----------------|----|--------|--------|----|--------|-----|--------|---|
|    |     |     | RX              | TX | TX Inh | W/N    | RX | TX     |     |        |   |
| 1  | AB  |     | 350.100000      | <- |        | W      |    |        |     | L1     | C |
| 2  |     |     | 389.900000      | <- |        | W      |    |        |     | L1     | C |
| 3  |     |     | 350.100000      | <- |        | W      |    |        |     | H      | C |
| 4  |     |     | 350.100000      | <- |        | W      |    |        |     | L2     | C |
| 5  |     |     | 350.100000      | <- |        | W      |    |        |     | L1     | C |
| 6  |     |     | 365.000000      | <- |        | N      |    |        |     | L1     | C |
| 7  |     |     | 365.000000      | <- |        | W      |    |        |     | L1     | C |
| 8  |     |     | 365.000000      | <- |        | N      |    | .007N  |     | L1     | C |
| 9  |     |     | 365.000000      | <- |        | W      |    | .007N  |     | L1     | C |
| 10 |     |     | 365.000000      | <- |        | W      |    | .151.4 |     | L1     | C |
| 11 |     |     | 350.100000      | <- |        | i      | W  |        |     | L1     | C |
| 12 |     |     | 389.900000      | <- |        | i      | W  |        |     | L1     | C |
| 13 |     |     |                 |    |        |        |    |        |     |        |   |
| 14 |     |     |                 |    |        |        |    |        |     |        |   |

- ② Clone the icf file into the transceiver.

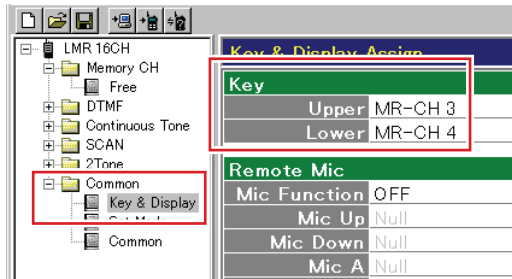
## ADJUSTMENT CHANNELS (continued)

Create "icf" file/files for adjustment as below, then clone it into the transceiver before starting adjustment.

### <IC-F24S/F25S/F26S> (2CH version)

#### (For [Low band])

- Assigne MR-CH3/MR-CH4 to the [Upper]/[Lower] keys.



- Create four icf files as below.

#### “Lowband ADJ CH FREQ\_TXPWR.icf”

| Memory CH |     |     |                 |    |        |     |        |    |     |  |        |          |         |
|-----------|-----|-----|-----------------|----|--------|-----|--------|----|-----|--|--------|----------|---------|
| CH        | Atr | Inh | Frequency (MHz) |    |        |     | C.Tone |    |     |  | RF PWR | PWR Save | Loc -ou |
|           |     |     | RX              | TX | TX Inh | W/N | RX     | TX | TOT |  |        |          |         |
| 1         | AB  |     | 400.100000      | <- |        |     | W      |    |     |  |        | L1       |         |
| 2         |     |     | 469.900000      | <- |        |     | W      |    |     |  |        | L1       |         |
| 3         |     |     | 400.100000      | <- |        |     | W      |    |     |  |        | L2       |         |
| 4         |     |     | 400.100000      | <- |        |     | W      |    |     |  |        | H        |         |

#### “Lowband ADJ CH AudioMOD.icf”

| Memory CH |     |     |                 |    |        |     |        |    |     |  |        |          |         |
|-----------|-----|-----|-----------------|----|--------|-----|--------|----|-----|--|--------|----------|---------|
| CH        | Atr | Inh | Frequency (MHz) |    |        |     | C.Tone |    |     |  | RF PWR | PWR Save | Loc -ou |
|           |     |     | RX              | TX | TX Inh | W/N | RX     | TX | TOT |  |        |          |         |
| 1         | AB  |     | 435.000000      | <- |        |     | N      |    |     |  |        | L1       |         |
| 2         |     |     | 435.000000      | <- |        |     | N      |    |     |  |        | L1       |         |
| 3         |     |     | 435.000000      | <- |        |     | W      |    |     |  |        | L1       |         |
| 4         |     |     |                 |    |        |     |        |    |     |  |        |          |         |

#### “Lowband ADJ CH ToneMOD.icf”

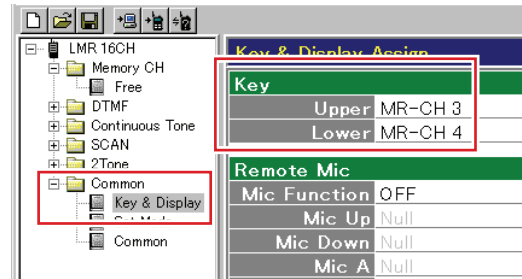
| Memory CH |     |     |                 |    |        |     |        |    |     |        |        |          |         |
|-----------|-----|-----|-----------------|----|--------|-----|--------|----|-----|--------|--------|----------|---------|
| CH        | Atr | Inh | Frequency (MHz) |    |        |     | C.Tone |    |     |        | RF PWR | PWR Save | Loc -ou |
|           |     |     | RX              | TX | TX Inh | W/N | RX     | TX | TOT |        |        |          |         |
| 1         | AB  |     | 435.000000      | <- |        |     | N      |    |     | .007N  |        | L1       |         |
| 2         |     |     | 435.000000      | <- |        |     | W      |    |     | .007N  |        | L1       |         |
| 3         |     |     | 435.000000      | <- |        |     | W      |    |     | .151.4 |        | L1       |         |
| 4         |     |     |                 |    |        |     |        |    |     |        |        |          |         |

#### “Lowband ADJ CH RX.icf”

| Memory CH |     |     |                 |    |        |     |        |    |     |  |        |          |         |
|-----------|-----|-----|-----------------|----|--------|-----|--------|----|-----|--|--------|----------|---------|
| CH        | Atr | Inh | Frequency (MHz) |    |        |     | C.Tone |    |     |  | RF PWR | PWR Save | Loc -ou |
|           |     |     | RX              | TX | TX Inh | W/N | RX     | TX | TOT |  |        |          |         |
| 1         | AB  |     | 400.100000      | <- |        |     | i      | W  |     |  |        | L1       |         |
| 2         |     |     |                 |    |        |     |        |    |     |  |        |          |         |
| 3         |     |     |                 |    |        |     |        |    |     |  |        |          |         |
| 4         |     |     |                 |    |        |     |        |    |     |  |        |          |         |

#### (For [High band])

- Assigne MR-CH3/MR-CH4 to the [Upper]/[Lower] keys.



- Create four icf files as below.

#### “Highband ADJ CH FREQ\_TXPWR.icf”

| Memory CH |     |     |                 |    |        |     |        |    |     |  |        |          |         |
|-----------|-----|-----|-----------------|----|--------|-----|--------|----|-----|--|--------|----------|---------|
| CH        | Atr | Inh | Frequency (MHz) |    |        |     | C.Tone |    |     |  | RF PWR | PWR Save | Loc -ou |
|           |     |     | RX              | TX | TX Inh | W/N | RX     | TX | TOT |  |        |          |         |
| 1         | AB  |     | 450.100000      | <- |        |     | W      |    |     |  |        | L1       |         |
| 2         |     |     | 511.900000      | <- |        |     | W      |    |     |  |        | L1       |         |
| 3         |     |     | 450.100000      | <- |        |     | W      |    |     |  |        | L2       |         |
| 4         |     |     | 450.100000      | <- |        |     | W      |    |     |  |        | H        |         |

#### “Highband ADJ CH AudioMOD.icf”

| Memory CH |     |     |                 |    |        |     |        |    |     |  |        |          |         |
|-----------|-----|-----|-----------------|----|--------|-----|--------|----|-----|--|--------|----------|---------|
| CH        | Atr | Inh | Frequency (MHz) |    |        |     | C.Tone |    |     |  | RF PWR | PWR Save | Loc -ou |
|           |     |     | RX              | TX | TX Inh | W/N | RX     | TX | TOT |  |        |          |         |
| 1         | AB  |     | 485.000000      | <- |        |     | N      |    |     |  |        | L1       |         |
| 2         |     |     | 485.000000      | <- |        |     | N      |    |     |  |        | L1       |         |
| 3         |     |     | 485.000000      | <- |        |     | W      |    |     |  |        | L1       |         |
| 4         |     |     |                 |    |        |     |        |    |     |  |        |          |         |

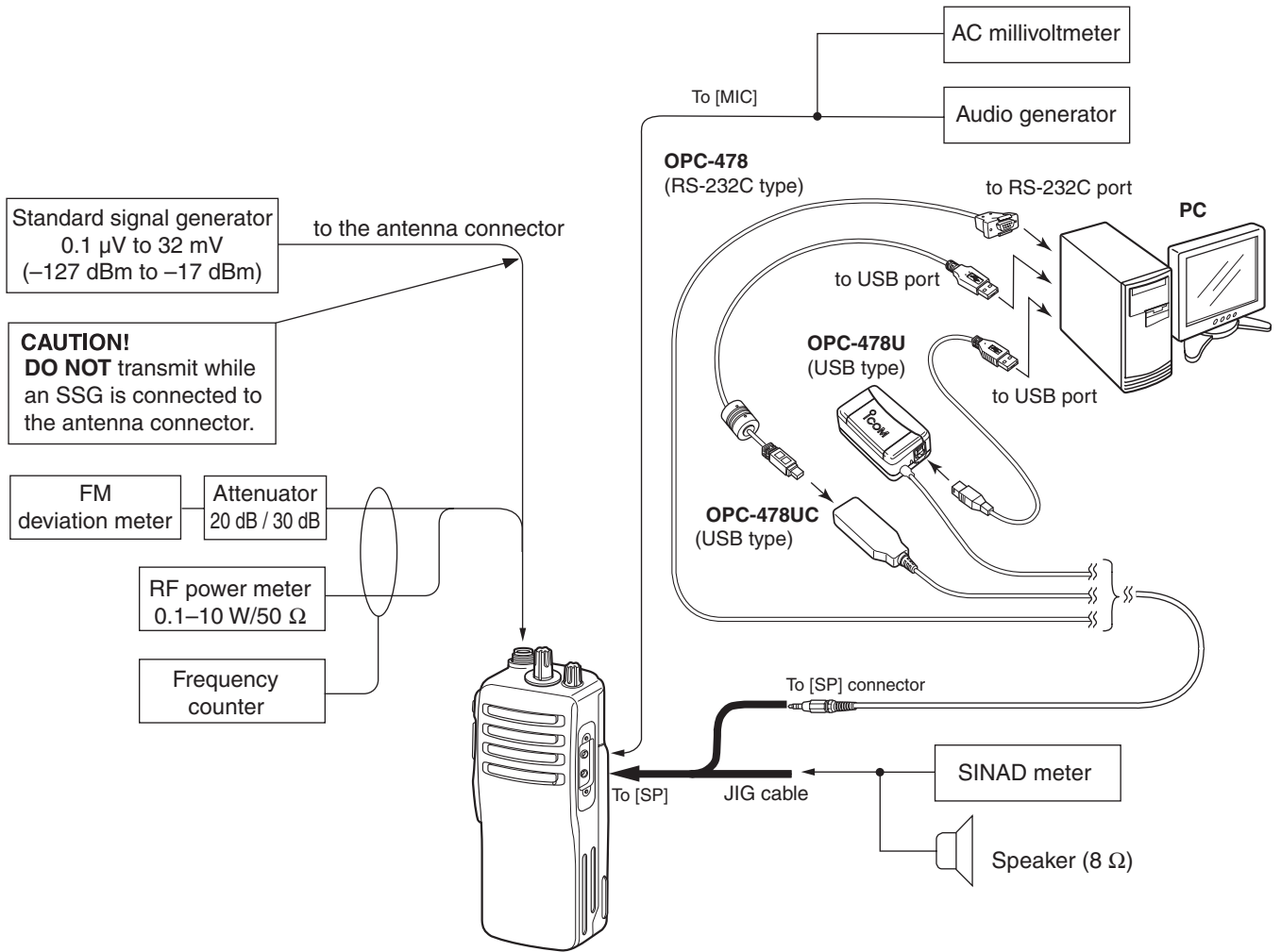
#### “Highband ADJ CH ToneMOD.icf”

| Memory CH |     |     |                 |    |        |     |        |    |     |        |        |          |         |
|-----------|-----|-----|-----------------|----|--------|-----|--------|----|-----|--------|--------|----------|---------|
| CH        | Atr | Inh | Frequency (MHz) |    |        |     | C.Tone |    |     |        | RF PWR | PWR Save | Loc -ou |
|           |     |     | RX              | TX | TX Inh | W/N | RX     | TX | TOT |        |        |          |         |
| 1         | AB  |     | 485.000000      | <- |        |     | N      |    |     | .007N  |        | L1       |         |
| 2         |     |     | 485.000000      | <- |        |     | W      |    |     | .007N  |        | L1       |         |
| 3         |     |     | 485.000000      | <- |        |     | W      |    |     | .151.4 |        | L1       |         |
| 4         |     |     |                 |    |        |     |        |    |     |        |        |          |         |

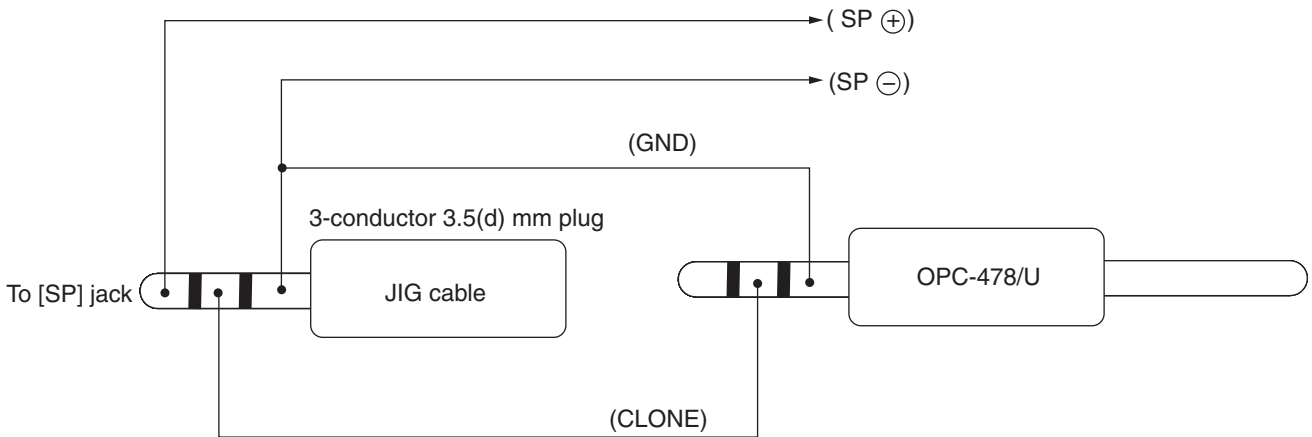
#### “Highband ADJ CH RX.icf”

| Memory CH |     |     |                 |    |        |     |        |    |     |  |        |          |         |
|-----------|-----|-----|-----------------|----|--------|-----|--------|----|-----|--|--------|----------|---------|
| CH        | Atr | Inh | Frequency (MHz) |    |        |     | C.Tone |    |     |  | RF PWR | PWR Save | Loc -ou |
|           |     |     | RX              | TX | TX Inh | W/N | RX     | TX | TOT |  |        |          |         |
| 1         | AB  |     | 450.100000      | <- |        |     | i      | W  |     |  |        | L1       |         |
| 2         |     |     |                 |    |        |     |        |    |     |  |        |          |         |
| 3         |     |     |                 |    |        |     |        |    |     |  |        |          |         |
| 4         |     |     |                 |    |        |     |        |    |     |  |        |          |         |

• CONNECTION



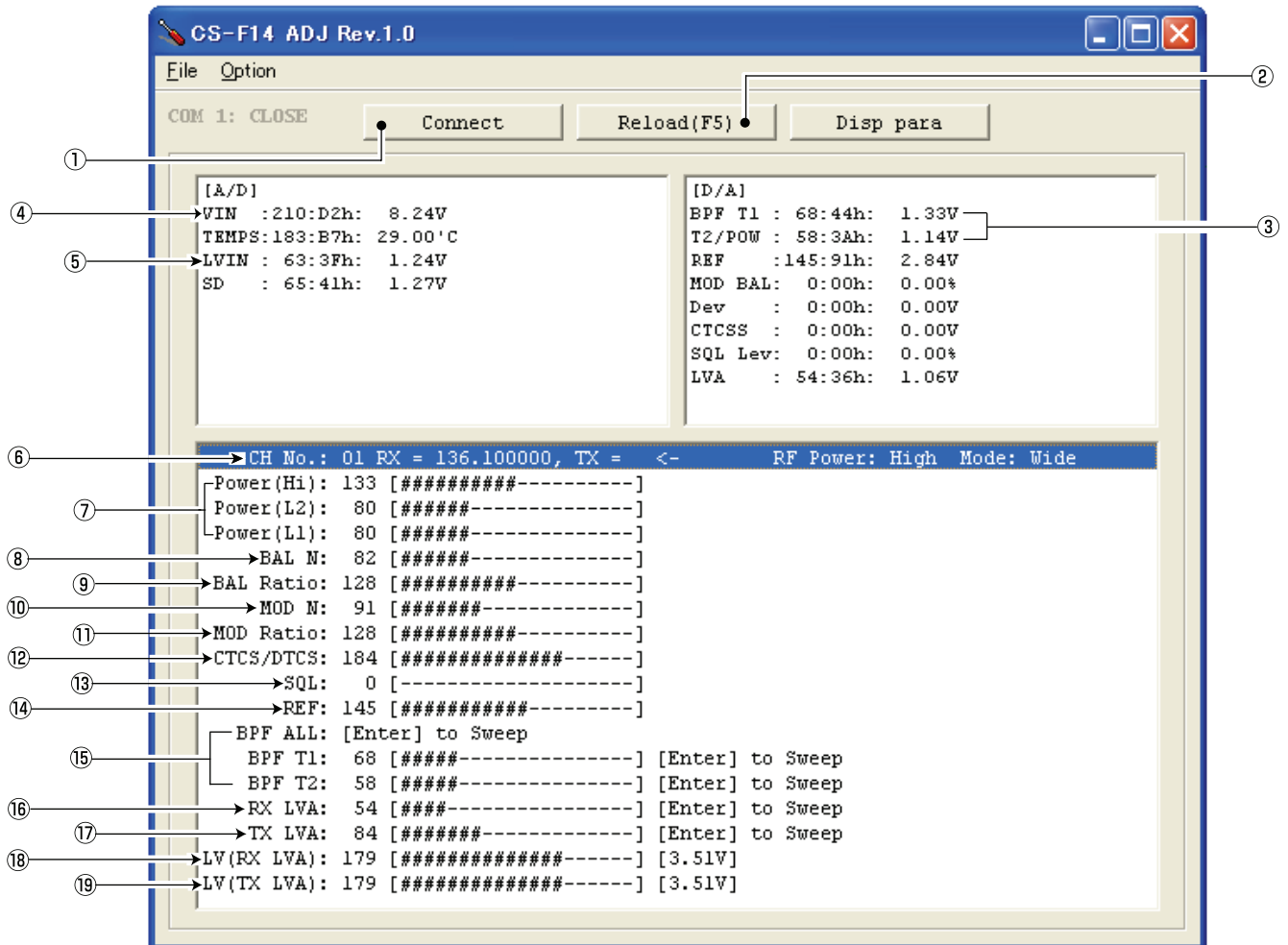
• JIG CABLE



## ■ STARTING SOFTWARE ADJUSTMENT

- (1) Connect the transceiver and PC with OPC-478/U/UC and JIG CABLE (see the previous page).
- (2) Turn the transceiver power ON.
- (3) Boot up Windows, and click the program group 'CS-F14 ADJ' in the 'Programs' folder of the [Start] menu, then CS-F14 ADJ's window appears.
- (4) Click 'Connect' on the CS-F14's window, then IC-F14's up-to-date condition appears as below.
- (5) Set or modify adjustment value as specified in following guidances.

## • PC SCREEN EXAMPLE



**NOTE:** The above screen is an example.

Each transceiver has its own specific values for each setting.

- |                                     |  |
|-------------------------------------|--|
| ①: Transceiver's connection state   | ⑫: CTCSS/DTCS deviation                    |
| ②: Reload adjustment data           | ⑬: Squelch level                           |
| ③: Receive sensitivity measurement  | ⑭: Reference frequency                     |
| ④: Connected DC voltage measurement | ⑮: Receive sensitivity (automatically)     |
| ⑤: PLL lock voltage measurement     | ⑯: PLL lock voltage for RX (automatically) |
| ⑥: Operating channel select         | ⑰: PLL lock voltage for TX (automatically) |
| ⑦: RF output power                  | ⑱: PLL lock voltage for RX (manually)      |
| ⑧: FM deviation balance (Narrow)    |  |
| ⑨: FM deviation balance (Wide)      |  |
| ⑩: FM deviation (Narrow)            |  |
| ⑪: FM deviation (Wide)              |  |

## 5-2 FREQUENCY ADJUSTMENT

### 5-2-1 FREQUENCY ADJUSTMENT FOR OTHER THAN IC-F26-L

1) Select an adjustment item using cursor or [↑] / [↓] keys of the PC's keyboard.

2) Set or modify the adjustment value as specified using [←] / [→] keys of the PC's keyboard, then push the [ENTER] key.

| ADJUSTMENT                        | ADJUSTMENT CONDITION | OPERATION   | ADJUSTMENT ITEM  | VALUE   |
|-----------------------------------|----------------------|---|--|---|
| PLL LOCK VOLTAGE<br>-Preparation- | 1                    | <For IC-F24S/F25S/F26S only><br>Clone the "ADJ CH FREQ_TXPWR.icf" into the transceiver. |  |   |
|                                   |                      | • Connect an RF Power Meter to the antenna.   | –  | –   |
| -Adjust-<br>RX                    | 2                    | • CH. (16CH/2CH) : CH.1/CH.1<br>• Receiving   | • Monitoring lock voltage at the "LVIN" in the "ADJUSTMENT WINDOW" (see the previous page), adjust the [RX LVA] using [←] / [→] keys on the PC's keyboard.<br>or<br>• Set the [RX LVA] to "51", then push the [ENTER] key. | [RX LVA]  |
| TX                                | 3                    | • CH. (16CH/2CH) : CH.1/CH.1<br>• Transmitting  | • Monitoring lock voltage at the "LVIN" in the "ADJUSTMENT WINDOW" (see the previous page), adjust the [TX LVA] using [←] / [→] keys on the PC's keyboard.<br>or<br>• Set the [TX LVA] to "51", then push the [ENTER] key. | [TX LVA]  |
| LOCK VOLTAGE VERIFICATION<br>RX   | 1                    | <For IC-F24S/F25S/F26S only><br>Clone the "ADJ CH FREQ_TXPWR.icf" into the transceiver. |  |   |
|                                   |                      | • CH. (16CH/2CH) : CH.2/CH.2<br>• Receiving   | • Verify the lock voltage at the "LVIN" in the "ADJUSTMENT WINDOW" (see the previous page).  | [LVIN]  |
| TX                                | 2                    | • CH. (16CH/2CH) : CH.2/CH.2<br>• Transmitting  |  | 3.3–4.5 V (Verify)                                  |
| REFERENCE FREQUENCY               | 1                    | • Connect an RF Power Meter to the antenna.   | –  | –   |
|                                   | 2                    | • CH. (16CH/2CH) : CH.2/CH.2<br>• Transmitting  | 1) Adjust the frequency using [←] / [→] keys on the PC's keyboard.<br>2) Push the [ENTER] key to store the adjust value.   | [REF]   |
|                                   |                      |   |  | 469.9000 MHz [Low band]<br>511.9000 MHz [High band] |



### 5-2-2 FREQUENCY ADJUSTMENT FOR IC-F26-L

- 1) Select an adjustment item using cursor or [↑] / [↓] keys of the PC's keyboard.
- 2) Set or modify the adjustment value as specified using [←] / [→] keys of the PC's keyboard, then push the [ENTER] key.


| ADJUSTMENT                                    | ADJUSTMENT CONDITION                          | OPERATION  | ADJUSTMENT ITEM | VALUE   |
|---|---|--|-----------------|---|
| <b>PLL LOCK VOLTAGE</b><br>-Preparation-      | 1 • Connect an RF Power Meter to the antenna. | –  | –               | –   |
| -Adjust-<br><b>RX</b>                         | 2 • CH. : CH.1<br>• Receiving                 | • Monitoring lock voltage at the "LVIN" in the "ADJUSTMENT WINDOW" (see the previous page), adjust the [RX LVA] using [←] / [→] keys on the PC's keyboard.<br>or<br>• Set the [RX LVA] to "51", then push the [ENTER] key. | [RX LVA]        | 1.4 V<br>(at the "LVIN" item)<br>or<br>"72"<br>(at the [RX/TX LVA]) |
| <b>TX</b>                                     | 3 • CH. : CH.1<br>• Transmitting              | • Monitoring lock voltage at the "LVIN" in the "ADJUSTMENT WINDOW" (see the previous page), adjust the [TX LVA] using [←] / [→] keys on the PC's keyboard.<br>or<br>• Set the [TX LVA] to "51", then push the [ENTER] key. | [TX LVA]        |   |
| <b>LOCK VOLTAGE VERIFICATION</b><br><b>RX</b> | 1 • CH. : CH.2<br>• Receiving                 | • Verify the lock voltage at the "LVIN" in the "ADJUSTMENT WINDOW" (see the previous page).  | [LVIN]          | 3.3–4.5 V<br>(Verify)   |
| <b>TX</b>                                     | 2 • CH. : CH.2<br>• Transmitting              |  |                 |   |
| <b>REFERENCE FREQUENCY</b>                    | 1 • Connect an RF Power Meter to the antenna. | –  | –               | –   |
|   | 2 • CH. (16CH/2CH) : CH.2<br>• Transmitting   | 1) Adjust the frequency using [←] / [→] keys on the PC's keyboard.<br>2) Push the [ENTER] key to store the adjust value.   | [REF]           | 389.9000 MHz  |

## 5-3 TRANSMIT ADJUSTMENT

### 5-3-1 TRANSMIT ADJUSTMENT FOR OTHER THAN IC-F26-L

1) Select an adjustment item using cursor or [↑] / [↓] keys of the PC's keyboard.

2) Set or modify the adjustment value as specified using [←] / [→] keys of the PC's keyboard, then push the [ENTER] key.


| ADJUSTMENT                             | ADJUSTMENT CONDITION | OPERATION  | ADJUSTMENT ITEM  | VALUE   |
|--|----------------------|--|--|---|
| TRANSMIT OUTPUT POWER<br>-Preparation- | 1                    | <b>&lt;For IC-F24S/F25S/F26S only&gt;</b><br>Clone the "ADJ CH FREQ_TXPWR.icf" into the transceiver. |  |   |
|  |                      | –  | • Connect an RF Power Meter to the antenna connector.  | –   |
| -Adjustment-Hi                         | 2                    | • CH. (16CH/2CH) : CH.3/CH.4<br>• Transmitting   | 1) Adjust the transmit output power using [←] / [→] keys on the PC's keyboard.<br>2) Push the [ENTER] key to store the adjust value. | [Power (Hi)] 4.0 W  |
| L2                                     | 3                    | • CH. (16CH/2CH) : CH.4/CH.3<br>• Transmitting   |  | [Power (L2)] 2.0 W  |
| L1                                     | 4                    | • CH. (16CH/2CH) : CH.5/CH.1<br>• Transmitting   |  | [Power (L1)] 1.0 W  |
| DEVIATION<br>-Preparation-             | 1                    | <b>&lt;For IC-F24S/F25S/F26S only&gt;</b><br>Clone the "ADJ CH AudioMOD.icf" into the transceiver.   |  |   |
|  |                      | • Connect a Modulation Analyzer to the antenna connector through an Attenuator.                      | • Set the Modulation Analyzer as;<br>HPF : OFF<br>LPF : 20 kHz<br>De-emphasis : OFF<br>Detector : (P-P)/2                            | –   |
|  | 2                    | • Connect an Audio Generator to the MIC line through the JIG cable.                                  | • Set the Audio Generator as;<br>Modulation : 1 kHz<br>Level : 40 mV rms<br>Wave form : Sine wave                                    | –   |
| -Adjustment-NARROW                     | 3                    | • CH. (16CH/2CH) : CH.6/CH.1<br>• Transmitting   | 1) Adjust the deviation using [←] / [→] keys on the PC's keyboard.<br>2) Push the [ENTER] key to store the adjust value.             | [MOD N] ±2.05–2.15 kHz  |
| WIDE                                   | 4                    | • CH. (16CH/2CH) : CH.7/CH.3<br>• Transmitting   |  | [MOD Ratio] ±4.05–4.15 kHz  |
| MIDDLE*                                | 5                    | • CH. (16CH/2CH) : CH.8/CH.2<br>• Transmitting   |  | [MOD Ratio] ±3.15–3.25 kHz  |
| MODULATION BALANCE<br>-Preparation-    | 1                    | <b>&lt;For IC-F24S/F25S/F26S only&gt;</b><br>Clone the "ADJ CH ToneMOD.icf" into the transceiver.    |  |   |
|  |                      | • Connect a Modulation Analyzer to the antenna connector through an attenuator.                      | • Set the Modulation Analyzer as;<br>HPF : OFF<br>LPF : 20 kHz<br>De-emphasis : OFF<br>Detector : (P-P)/2                            | –   |
|  |                      | • Connect an Oscilloscope to the Detect terminal of the Modulation Analyzer.                         | –  | –   |
| -Adjustment-NARROW                     | 2                    | • CH. (16CH/2CH) : CH.9/CH.1<br>• Transmitting   | 1) Adjust the waveform using [←] / [→] keys on the PC's keyboard.<br>2) Push the [ENTER] key to store the adjust value.              | [BAL N] Square waveform   |
| MIDDLE*                                | 3                    | • CH. (16CH/2CH) : CH.9/CH.1<br>• Transmitting   |  | [BAL Ratio] Flat  |
| WIDE                                   | 4                    | • CH. (16CH/2CH) : CH.10/CH.2<br>• Transmitting  |  | [BAL Ratio]  |
| CTCSS/DTCS DEVIATION<br>-Preparation-  | 1                    | <b>&lt;For IC-F24S/F25S/F26S only&gt;</b><br>Clone the "ADJ CH ToneMOD.icf" into the transceiver.    |  |   |
|  |                      | • Connect a Modulation Analyzer to the antenna connector through an attenuator.                      | • Set the Modulation Analyzer as;<br>HPF : OFF<br>LPF : 20 kHz<br>De-emphasis : OFF<br>Detector : (P-P)/2                            | –   |
| -Adjustment-                           | 2                    | • CH. (16CH/2CH) : CH.11/CH.3<br>• Transmitting  | 1) Adjust the deviation using [←] / [→] keys on the PC's keyboard.<br>2) Push the [ENTER] key to store the adjust value.             | [CTCSS/DTCS] ±0.66–0.70 kHz   |

\*: F25/S only

### 5-3-2 TRANSMIT ADJUSTMENT FOR IC-F26-L

1) Select an adjustment item using cursor or [↑] / [↓] keys of the PC's keyboard.

2) Set or modify the adjustment value as specified using [←] / [→] keys of the PC's keyboard, then push the [ENTER] key.

| ADJUSTMENT  |   | ADJUSTMENT CONDITION  | OPERATION  | ADJUSTMENT ITEM     | VALUE   |
|---|---|---|--|---------------------|---|
| <b>TRANSMIT OUTPUT POWER</b><br><b>-Preparation-</b>          | 1 | -   | • Connect an RF Power Meter to the antenna connector.  | -                   | -   |
| <b>-Adjustment-Hi</b>   | 2 | • CH. : CH.3<br>• Transmitting  | 1) Adjust the transmit output power using [←] / [→] keys on the PC's keyboard.<br>2) Push the [ENTER] key to store the adjust value. | <b>[Power (Hi)]</b> | 4.0 W   |
| <b>L2</b>   | 3 | • CH. : CH.4<br>• Transmitting  |  | <b>[Power (L2)]</b> | 2.0 W   |
| <b>L1</b>   | 4 | • CH. : CH.5<br>• Transmitting  |  | <b>[Power (L1)]</b> | 1.0 W   |
| <b>DEVIATION</b><br><b>-Preparation-</b>                      | 1 | • Connect a Modulation Analyzer to the antenna connector through an Attenuator. | • Set the Modulation Analyzer as;<br>HPF : OFF<br>LPF : 20 kHz<br>De-emphasis : OFF<br>Detector : (P-P)/2                            | -                   | -   |
|   | 2 | • Connect an Audio Generator to the MIC line through the JIG cable.             | • Set the Audio Generator as;<br>Modulation : 1 kHz<br>Level : 40 mV rms<br>Wave form : Sine wave                                    | -                   | -   |
| <b>-Adjustment-NARROW</b>                                     | 3 | • CH. : CH.6<br>• Transmitting  | 1) Adjust the deviation using [←] / [→] keys on the PC's keyboard.<br>2) Push the [ENTER] key to store the adjust value.             | <b>[MOD N]</b>      | ±2.05–2.15 kHz  |
| <b>WIDE</b>   | 4 | • CH. : CH.7<br>• Transmitting  |  | <b>[MOD Ratio]</b>  | ±4.05–4.15 kHz  |
| <b>MODULATION BALANCE</b><br><b>-Preparation-</b>             | 1 | • Connect a Modulation Analyzer to the antenna connector through an attenuator. | • Set the Modulation Analyzer as;<br>HPF : OFF<br>LPF : 20 kHz<br>De-emphasis : OFF<br>Detector : (P-P)/2                            | -                   | -   |
|   |   | • Connect an Oscilloscope to the Detect terminal of the Modulation Analyzer.    | -  | -                   | -   |
| <b>-Adjustment-NARROW</b>                                     | 2 | • CH. : CH.8<br>• Transmitting  | 1) Adjust the waveform using [←] / [→] keys on the PC's keyboard.<br>2) Push the [ENTER] key to store the adjust value.              | <b>[BAL N]</b>      | Square waveform<br>Flat   |
| <b>WIDE</b>   | 3 | • CH. : CH.9<br>• Transmitting  |  | <b>[BAL Ratio]</b>  |  |
| <b>CTCSS/DTCS</b><br><b>DEVIATION</b><br><b>-Preparation-</b> | 1 | • Connect a Modulation Analyzer to the antenna connector through an attenuator. | • Set the Modulation Analyzer as;<br>HPF : OFF<br>LPF : 20 kHz<br>De-emphasis : OFF<br>Detector : (P-P)/2                            | -                   | -   |
| <b>-Adjustment-</b>   | 2 | • CH. : CH.10<br>• Transmitting   | 1) Adjust the deviation using [←] / [→] keys on the PC's keyboard.<br>2) Push the [ENTER] key to store the adjust value.             | <b>[CTCSS/DTCS]</b> | ±0.66–0.70 kHz  |

## 5-4 RECEIVE ADJUSTMENT

### 5-4-1 RECEIVE ADJUSTMENT FOR OTHER THAN IC-F26-L

1) Select an adjustment item using cursor or [↑] / [↓] keys of the PC's keyboard.

2) Set or modify the adjustment value as specified using [←] / [→] keys of the PC's keyboard, then push the [ENTER] key.

| ADJUSTMENT                           | ADJUSTMENT CONDITION  | OPERATION  | ADJUSTMENT ITEM   | VALUE                                  |                        |
|--------------------------------------|---|--|---|--|------------------------|
| RECEIVE SENSITIVITY<br>-Preparation- | 1   | <For IC-F24S/F25S/F26S only><br>Clone the "ADJ CH RX.icf" into the transceiver.                  |   |  |                        |
|                                      |   | <ul style="list-style-type: none"> <li>Connect an SSG to the antenna connector.</li> </ul>       | <ul style="list-style-type: none"> <li>Set the SSG as;                             <ul style="list-style-type: none"> <li>Frequency : 400.1000 MHz [Low band]</li> <li>450.1000 MHz [High band]</li> <li>Level : +20 dB<sub>μ</sub></li> <li>Modulation : 1 kHz</li> <li>Deviation : 3.5 kHz</li> </ul> </li> </ul> | -                                      | -                      |
| -Adjustment-                         | 2   | <ul style="list-style-type: none"> <li>CH. (16CH/2CH) : CH.12/CH.1</li> <li>Receiving</li> </ul> | 1) Select the item <b>[BPF (T1)]</b> , then push the [ENTER] key.<br>2) Select the item <b>[BPF (T2)]</b> , then push the [ENTER] key.  | <b>[BPF (T1)]</b><br><b>[BPF (T2)]</b> | (Automatic adjustment) |
|                                      | <b>CONVINIENT: [BPF (T1)] and [BPF (T2)] can be adjusted at same time as below.</b> |  |   |  |                        |
|                                      | 2   | <ul style="list-style-type: none"> <li>CH. (16CH/2CH) : CH.11/CH.1</li> <li>Receiving</li> </ul> | <ul style="list-style-type: none"> <li>Select the item <b>[BPF ALL]</b>, then push the [ENTER] key.</li> </ul>  | <b>[BPF ALL]</b>                       | (Automatic adjustment) |
| SQUELCH<br>-Preparation-             | 1   | <For IC-F24S/F25S/F26S only><br>Clone the "ADJ CH RX.icf" into the transceiver.                  |   |  |                        |
|                                      |   | <ul style="list-style-type: none"> <li>Connect an SSG to the antenna connector.</li> </ul>       | <ul style="list-style-type: none"> <li>Set the SSG as;                             <ul style="list-style-type: none"> <li>Frequency : 400.1000 MHz [Low band]</li> <li>450.1000 MHz [High band]</li> <li>Level : -14 dB<sub>μ</sub></li> <li>Modulation : 1 kHz</li> <li>Deviation : 3.5 kHz</li> </ul> </li> </ul> | -                                      | -                      |
| -Adjustment-                         | 2   | <ul style="list-style-type: none"> <li>CH. (16CH/2CH) : CH.12/CH.1</li> <li>Receiving</li> </ul> | 1) Decrease the adjustment value <b>[SQL]</b> to close the squelch once, then increase the value to open the squelch.<br>2) Select the item <b>[SQL]</b> , then push the [ENTER] key to store the adjust value.   | <b>[SQL]</b>                           | (Automatic adjustment) |

### 5-4-2 RECEIVE ADJUSTMENT FOR IC-F26-L

1) Select an adjustment item using cursor or [↑] / [↓] keys of the PC's keyboard.

2) Set or modify the adjustment value as specified using [←] / [→] keys of the PC's keyboard, then push the [ENTER] key.

| ADJUSTMENT  | ADJUSTMENT CONDITION                            | OPERATION   | ADJUSTMENT ITEM                        | VALUE                  |
|---|---|---|--|------------------------|
| RECEIVE SENSITIVITY<br>-Preparation-  | 1<br>• Connect an SSG to the antenna connector. | • Set the SSG as;<br>Frequency : 350.1000 MHz<br>Level : +20 dBμ<br>Modulation : 1 kHz<br>Deviation : 3.5 kHz   | -                                      | -                      |
| -Adjustment-  | 2<br>• CH. : CH.11<br>• Receiving               | 1) Select the item <b>[BPF (T1)]</b> , then push the [ENTER] key.<br>2) Select the item <b>[BPF (T2)]</b> , then push the [ENTER] key.  | <b>[BPF (T1)]</b><br><b>[BPF (T2)]</b> | (Automatic adjustment) |
| <b>CONVINIENT: [BPF (T1)] and [BPF (T2)] can be adjusted at same time as below.</b> |   |   |  |                        |
|   | 2<br>• CH. : CH.11<br>• Receiving               | • Select the item <b>[BPF ALL]</b> , then push the [ENTER] key.   | <b>[BPF ALL]</b>                       | (Automatic adjustment) |
| SQUELCH<br>-Preparation-  | 1<br>• Connect an SSG to the antenna connector. | • Set the SSG as;<br>Frequency : 389.9000 MHz<br>Level : -14 dBμ<br>Modulation : 1 kHz<br>Deviation : 3.5 kHz   | -                                      | -                      |
| -Adjustment-  | 2<br>• CH. : CH.12<br>• Receiving               | 1) Decrease the adjustment value <b>[SQL]</b> to close the squelch once, then increase the value to open the squelch.<br>2) Select the item <b>[SQL]</b> , then push the [ENTER] key to store the adjust value. | <b>[SQL]</b>                           | (Automatic adjustment) |









[MAIN UNIT] (For other than F26-L)

| REF NO. | PARTS NO.  | DESCRIPTION                   | M. | H/V LOCATION |
|---------|------------|-------------------------------|----|--------------|
| C230    | 4030016930 | S.CER ECJ0EB1A104K            | B  | 85.8/16.8    |
| C231    | 4030016790 | S.CER ECJ0EB1C103K            | T  | 74/13.3      |
| C232    | 4030016930 | S.CER ECJ0EB1A104K            | T  | 76.2/13.3    |
| C232    | 4030017730 | S.CER ECJ0EB1E471K            | T  | 76.2/13.3    |
| C233    | 4030016790 | S.CER ECJ0EB1C103K            | T  | 24.5/23      |
| C234    | 4030017460 | S.CER ECJ0EB1E102K            | T  | 24.2/27.8    |
| C235    | 4030016790 | S.CER ECJ0EB1C103K            | T  | 69.8/15.7    |
| C236    | 4030017460 | S.CER ECJ0EB1E102K            | T  | 69.8/17.7    |
| C237    | 4510005430 | S.ELE ECEV0JA220SR            | B  | 76/15.5      |
| C238    | 4030017460 | S.CER ECJ0EB1E102K            | B  | 77/18.4      |
| C241    | 4030016930 | S.CER ECJ0EB1A104K            | T  | 35.4/9.9     |
| C242    | 4030016930 | S.CER ECJ0EB1A104K            | T  | 44.7/9.9     |
| C243    | 4030016790 | S.CER ECJ0EB1C103K            | T  | 40.5/9.9     |
| C244    | 4030016930 | S.CER ECJ0EB1A104K            | B  | 46.5/15.4    |
| C251    | 4030016970 | S.CER ECJ0EB1C223K            | T  | 33.4/17.1    |
| C252    | 4030017740 | S.CER ECJ0EB1E821K            | T  | 29.9/16.1    |
| C253    | 4030017740 | S.CER ECJ0EB1E821K            | T  | 33.4/14.9    |
| C254    | 4030016930 | S.CER ECJ0EB1A104K            | T  | 33.4/10.9    |
| C255    | 4030016950 | S.CER ECJ0EB1A473K            | B  | 34.5/12.1    |
| C256    | 4030016940 | S.CER ECJ0EB1A393K            | T  | 29.9/28.1    |
| C257    | 4030016930 | S.CER ECJ0EB1A104K            | T  | 29.9/30.1    |
| C258    | 4030017790 | S.CER ECJ0EB1E682K            | T  | 26.6/30.1    |
| C259    | 4030018860 | S.CER ECJ0EB0J105K            | T  | 31.5/41.1    |
| C260    | 4030017730 | S.CER ECJ0EB1E471K            | T  | 29.8/39.1    |
| C261    | 4030016930 | S.CER ECJ0EB1A104K            | T  | 31.5/40.1    |
| C264    | 4510004630 | S.ELE ECEV1CA100SR            | B  | 69.7/15.5    |
| C265    | 4030017460 | S.CER ECJ0EB1E102K            | B  | 64.4/12.3    |
| C266    | 4030016930 | S.CER ECJ0EB1A104K            | B  | 63/8.5       |
| C269    | 4030017720 | S.CER ECJ0EB1H331K            | T  | 11.6/37.9    |
| C270    | 4030016950 | S.CER ECJ0EB1A473K            | T  | 14.1/28.8    |
| C271    | 4030016950 | S.CER ECJ0EB1A473K            | T  | 14.1/26.8    |
| C272    | 4030016950 | S.CER ECJ0EB1A473K            | T  | 10.6/28.5    |
| C273    | 4030016950 | S.CER ECJ0EB1A473K            | T  | 14.1/27.8    |
| C274    | 4030016950 | S.CER ECJ0EB1A473K            | T  | 11.6/31.9    |
| C275    | 4030016970 | S.CER ECJ0EB1C223K            | T  | 11.6/34.4    |
| C276    | 4030016950 | S.CER ECJ0EB1A473K            | T  | 12.6/34.4    |
| C277    | 4030016930 | S.CER ECJ0EB1A104K            | T  | 14.6/40.1    |
| C278    | 4030017430 | S.CER ECJ0EC1H101J            | T  | 18/40.1      |
| C279    | 4030018910 | S.CER C1608 JB OJ 475K-T      | T  | 36.9/23.2    |
| C280    | 4030017780 | S.CER ECJ0EB1E472K            | T  | 21.3/27.8    |
| C281    | 4030018920 | S.CER ECJ0EB1H392K            | T  | 17.7/26.8    |
| C282    | 4030017710 | S.CER ECJ0EC1H181J            | T  | 17.7/29.8    |
| C283    | 4030018900 | S.CER ECJ0EB0J474K            | T  | 19.4/31.7    |
| C284    | 4030016930 | S.CER ECJ0EB1A104K            | T  | 22.9/39.1    |
| C285    | 4030016930 | S.CER ECJ0EB1A104K            | T  | 22.9/40.1    |
| C286    | 4030017460 | S.CER ECJ0EB1E102K            | B  | 16.7/40.4    |
| C287    | 4550006250 | S.TAN TEESVA 1A 106M8R        | B  | 21.8/40.7    |
| C288    | 4030017460 | S.CER ECJ0EB1E102K            | B  | 17.2/38.1    |
| C289    | 4030016930 | S.CER ECJ0EB1A104K            | B  | 20.2/31      |
| C290    | 4030016930 | S.CER ECJ0EB1A104K            | T  | 27.5/16.2    |
| C291    | 4030016780 | S.CER ECJ0EB1C153K            | T  | 25.7/10.9    |
| C292    | 4030016930 | S.CER ECJ0EB1A104K            | T  | 25.7/13.9    |
| C293    | 4030017740 | S.CER ECJ0EB1E821K            | T  | 25.7/11.9    |
| C295    | 4030018110 | S.CER ECJ0EB1H272K            | T  | 29.1/5.1     |
| C296    | 4030018240 | S.CER ECJ0EB1E562K            | T  | 29.1/6.1     |
| C297    | 4030017710 | S.CER ECJ0EC1H181J            | T  | 27.1/7.1     |
| C298    | 4030018090 | S.CER ECJ0EB1C822K            | T  | 31/7.1       |
| C299    | 4030017510 | S.CER ECJ0EC1H680J            | T  | 31/5.1       |
| C300    | 4030017450 | S.CER ECJ0EB1E271K            | B  | 19.8/38.2    |
| C302    | 4030017620 | S.CER ECJ0EC1H100C            | T  | 66/39.3      |
| C303    | 4030017460 | S.CER ECJ0EB1E102K            | T  | 65/39.3      |
| C304    | 4030017580 | S.CER ECJ0EC1H060C            | B  | 68.5/40.2    |
| C305    | 4030017580 | S.CER ECJ0EC1H060C            | B  | 64.2/40.8    |
| C306    | 4030017460 | S.CER ECJ0EB1E102K            | B  | 61/12.3      |
| C307    | 4030017460 | S.CER ECJ0EB1E102K            | B  | 59.3/12.3    |
| C308    | 4030017460 | S.CER ECJ0EB1E102K            | T  | 75.7/9.8     |
| C309    | 4030017460 | S.CER ECJ0EB1E102K            | B  | 75.5/11.3    |
| C310    | 4030016930 | S.CER ECJ0EB1A104K            | T  | 21.3/11.9    |
| C311    | 4030017460 | S.CER ECJ0EB1E102K            | B  | 64.9/8.5     |
| C312    | 4030017420 | S.CER ECJ0EC1H470J            | B  | 75/6.1       |
| C313    | 4030017420 | S.CER ECJ0EC1H470J            | B  | 32.9/7.1     |
| C314    | 4030017460 | S.CER ECJ0EB1E102K            | T  | 86.6/3.3     |
| C315    | 4030017460 | S.CER ECJ0EB1E102K            | T  | 93.2/6       |
| C316    | 4030016930 | S.CER ECJ0EB1A104K            | T  | 91.7/2.8     |
| C317    | 4510004630 | S.ELE ECEV1CA100SR            | B  | 95.9/15.2    |
| C318    | 4030016930 | S.CER ECJ0EB1A104K            | T  | 89.7/8.9     |
| C319    | 4030016930 | S.CER ECJ0EB1A104K            | T  | 89.6/2.8     |
| C320    | 4030017730 | S.CER ECJ0EB1E471K            | T  | 88.6/2.8     |
| C321    | 4030017460 | S.CER ECJ0EB1E102K            | B  | 19.3/4.2     |
| C322    | 4030016950 | S.CER ECJ0EB1A473K            | T  | 93.9/13.9    |
| C323    | 4030016950 | S.CER ECJ0EB1A473K            | T  | 87.6/9.7     |
| C324    | 4030017420 | S.CER ECJ0EC1H470J            | T  | 85/13.7      |
| C325    | 4550006250 | S.TAN TEESVA 1A 106M8R        | T  | 90.6/17.2    |
| C326    | 4510008900 | S.ELE EEEFC0J101P             | B  | 87.8/8.9     |
| C333    | 4030017420 | S.CER ECJ0EC1H470J            | B  | 76.8/39.9    |
| C335    | 4030018860 | S.CER ECJ0EB0J105K            | B  | 54.6/22.6    |
| C339    | 4030016930 | S.CER ECJ0EB1A104K            | B  | 5.9/17.2     |
| C340    | 4030016930 | S.CER ECJ0EB1A104K            | B  | 9.3/12.5     |
| C341    | 4030016930 | S.CER ECJ0EB1A104K            | B  | 5.9/10.1     |
| C342    | 4030017630 | S.CER ECJ0EC1H120J            | B  | 18.3/4.2     |
| C343    | 4030017580 | S.CER ECJ0EC1H060C            | B  | 5.6/4.2      |
| C344    | 4030017640 | S.CER ECJ0EC1H150J            | B  | 7.6/9.1      |
| C345    | 4030016930 | S.CER ECJ0EB1A104K            | B  | 11/11.2      |
| C346    | 4030016930 | S.CER ECJ0EB1A104K            | B  | 11/10.1      |
| C347    | 4030016790 | S.CER ECJ0EB1C103K            | T  | 8.8/6.5      |
| C348    | 4030016930 | S.CER ECJ0EB1A104K            | T  | 6/10         |
| C349    | 4030016930 | S.CER ECJ0EB1A104K            | T  | 21.3/14.9    |
| C350    | 4030017460 | S.CER ECJ0EB1E102K            | T  | 59.4/43.4    |
| C354    | 4030017460 | S.CER ECJ0EB1E102K            | T  | 14.2/24.4    |
| C355    | 4030018080 | S.CER ECJ0EB1H182K            | T  | 42.9/22.7    |
| C356    | 4030018910 | S.CER C1608 JB OJ 475K-T      | T  | 34.6/20.6    |
| C357    | 4030017400 | S.CER ECJ0EC1H220J [Low band] | T  | 79/25.5      |

[MAIN UNIT] (For other than F26-L)

| REF NO. | PARTS NO.  | DESCRIPTION                           | M. | H/V LOCATION |
|---------|------------|---------------------------------------|----|--------------|
| J1      | 6510021901 | S.CNR BM02B-ASRS-TF (LF) (SN)         | T  | 86.6/6.8     |
| J2      | 6450001680 | CNR HSJ1122-010010                    |    |              |
| J3      | 6450002250 | CNR HSJ1456-010320                    |    |              |
| J4      | 6510018430 | S.CNR AXN330C038P                     | B  | 11.8/30.6    |
| J5      | 6510021901 | S.CNR BM02B-ASRS-TF (LF) (SN)         | T  | 50.4/11.7    |
| F1      | 5210000830 | S.FUS ERBFE3R00U                      | T  | 98/14.5      |
| DS1     | 5040002670 | S.LED CL-165HR/YG                     | T  | 102.8/12.4   |
| MC1     | 7700002750 | MIC EM9745P-38-G <HOR>                |    |              |
| S1      | 2260002840 | SW SKHLLFA010                         |    |              |
| S2      | 2260002800 | S.SW SW-167 (SKQTLAE010)              | B  | 99.4/44.2    |
| S3      | 2260002800 | S.SW SW-167 (SKQTLAE010)              | B  | 60.9/44.2    |
| S4      | 2250000490 | ECR TP70TF5163-15.9F-2775 [16CH] only |    |              |
| EP1     | 6910015370 | S.BEA ACZ1005Y-102-T                  | T  | 57/29.9      |
| EP3     | 6910015370 | S.BEA ACZ1005Y-102-T                  | T  | 34.7/32      |

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

[MAIN-B UNIT] (For IC-F26-L)

Table with 6 columns: REF NO., PARTS NO., DESCRIPTION, M., H/V LOCATION. Rows include components like TA31136FNG (EL), 2SK1829 (TE85R,F), and RB886G T2R.

[MAIN-B UNIT] (For IC-F26-L)

Table with 6 columns: REF NO., PARTS NO., DESCRIPTION, M., H/V LOCATION. Rows include components like ELJRF 33NJFB, ERJ2G05120 S, and ERJ2G04970 S.

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





**[MAIN-B UNIT] (For IC-F26-L)**

| REF NO. | PARTS NO.  | DESCRIPTION                   | M. | H/V LOCATION |
|---------|------------|-------------------------------|----|--------------|
| C333    | 4030017420 | S.CER ECJ0EC1H470J            | B  | 76.8/39.9    |
| C335    | 4030018860 | S.CER ECJ0EB0J105K            | B  | 54.6/22.6    |
| C339    | 4030016930 | S.CER ECJ0EB1A104K            | B  | 5.9/17.2     |
| C340    | 4030016930 | S.CER ECJ0EB1A104K            | B  | 9.3/12.5     |
| C341    | 4030016930 | S.CER ECJ0EB1A104K            | B  | 5.9/10.1     |
| C342    | 4030017630 | S.CER ECJ0EC1H120J            | B  | 18.3/4.2     |
| C343    | 4030017580 | S.CER ECJ0EC1H060C            | B  | 5.6/4.2      |
| C344    | 4030017640 | S.CER ECJ0EC1H150J            | B  | 7.6/9.1      |
| C345    | 4030016930 | S.CER ECJ0EB1A104K            | B  | 11/11.2      |
| C346    | 4030016930 | S.CER ECJ0EB1A104K            | B  | 11/10.1      |
| C347    | 4030016790 | S.CER ECJ0EB1C103K            | T  | 8.8/6.5      |
| C348    | 4030016930 | S.CER ECJ0EB1A104K            | T  | 6/10         |
| C349    | 4030016930 | S.CER ECJ0EB1A104K            | T  | 21.3/14.9    |
| C350    | 4030017460 | S.CER ECJ0EB1E102K            | T  | 59.4/43.4    |
| C354    | 4030017460 | S.CER ECJ0EB1E102K            | T  | 14.2/24.4    |
| C355    | 4030018080 | S.CER ECJ0EB1H182K            | T  | 42.9/22.7    |
| C356    | 4030018910 | S.CER C1608 JB 0J 475K-T      | T  | 34.6/20.6    |
| J1      | 6510021901 | S.CNR BM02B-ASRS-TF (LF) (SN) | T  | 86.6/6.8     |
| J2      | 6450001680 | CNR HSJ1122-010010            |    |              |
| J3      | 6450002250 | CNR HSJ1456-010320            |    |              |
| J4      | 6510018430 | S.CNR AXN330C038P             | B  | 11.8/30.6    |
| F1      | 5210000830 | S.FUS ERBFE3R00U              | T  | 98/14.5      |
| DS1     | 5040002670 | S.LED CL-165HR/YG             | T  | 102.8/12.4   |
| MC1     | 7700002750 | MIC EM9745P-38-G <HOR>        |    |              |
| S1      | 2260002840 | SW SKHLLFA010                 |    |              |
| S2      | 2260002800 | S.SW SW-167 (SKQTLAE010)      | B  | 99.4/44.2    |
| S3      | 2260002800 | S.SW SW-167 (SKQTLAE010)      | B  | 60.9/44.2    |
| S4      | 2250000490 | ECR TP70TF5163-15.9F-2775     |    |              |
| EP1     | 6910015370 | S.BEA ACZ1005Y-102-T          | T  | 57/29.9      |
| EP3     | 6910015370 | S.BEA ACZ1005Y-102-T          | T  | 34.7/32      |

**[ANT UNIT]**

| REF NO. | PARTS NO.  | DESCRIPTION            | M. | H/V LOCATION |
|---------|------------|------------------------|----|--------------|
| L601    | 6200008240 | S.COL 0.30-0.9-5TL 14N | B  | 7.2/12.5     |
| C601    | 4030017600 | S.CER ECJ0EC1H080C     | B  | 5.8/15.3     |

**[CONNECT UNIT]**

| REF NO. | PARTS NO.  | DESCRIPTION                 | M. | H/V LOCATION |
|---------|------------|-----------------------------|----|--------------|
| C501    | 4030017460 | S.CER ECJ0EB1E102K          | T  | 8.3/5.3      |
| C502    | 4030016930 | S.CER ECJ0EB1A104K          | T  | 9.3/5.3      |
| J501    | 6910016390 | CNR IMSA-9230B-1-02Z145-PT1 |    |              |

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

• BC-160 (Optional)

[MAIN UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION                  | M. | H/V LOCATION |
|---------|------------|------------------------------|----|--------------|
| IC1     | 1110006480 | S.IC NJM2801U1-0543-TE1      | B  | 10.2/62.3    |
| IC2     | 1110003071 | S.IC uPC494GS-E1-A           | B  | 13/36.7      |
| IC3     | 1140012301 | S.IC uPD789112AMC-534-5A4-A  | B  | 19.1/19.6    |
| IC4     | 1110002700 | S.IC NJM2904M-TE1            | B  | 35.1/13.8    |
| Q1      | 1530002060 | S.TR 2SC4081 T106 R          | B  | 37.3/63.9    |
| Q2      | 1550000090 | S.FET RSQ035P03TR            | B  | 37.3/60.9    |
| Q3      | 1530002060 | S.TR 2SC4081 T106 R          | B  | 35.8/19.3    |
| Q4      | 1530002060 | S.TR 2SC4081 T106 R          | B  | 41.6/18.3    |
| Q5      | 1590000430 | S.TR DTC144EUA T106          | B  | 23.7/26.6    |
| Q6      | 1530002060 | S.TR 2SC4081 T106 R          | B  | 22.5/58.2    |
| D1      | 1730002350 | S.ZEN MA8110-M (TX)          | B  | 17.6/60.5    |
| D2      | 1750000550 | S.DIO 1SS355 TE-17           | B  | 34.8/64.4    |
| D3      | 1750001110 | S.DIO SM240A-T               | B  | 44.4/56      |
| D4      | 1160000070 | S.DIO DAN202K T146           | B  | 26.9/20.6    |
| D5      | 1750000550 | S.DIO 1SS355 TE-17           | B  | 27.2/15      |
| X1      | 6060000790 | S.CER CSTCR4M91G             | B  | 10.3/17.7    |
| L1      | 6190001640 | S.COL SLF12555T-101M1R1      | B  | 35.3/52.7    |
| L2      | 6200002611 | S.COL NLV25T-R47J            | B  | 20.8/28.2    |
| R2      | 7030000460 | S.RES MCR10EZHJ 4.7 k        | B  | 20.3/58.6    |
| R3      | 7030003410 | S.RES ERJ3GEYJ 561 V (560)   | B  | 37.3/65.8    |
| R4      | 7030003200 | S.RES ERJ3GEYJ 100 V (10)    | B  | 34.6/61.1    |
| R5      | 7030009580 | S.RES ERJ8RSJ R12V           | B  | 31.8/73      |
| R6      | 7030000540 | S.RES MCR10EZHJ 22 k         | B  | 30.1/26.8    |
| R7      | 7030000380 | S.RES MCR10EZHJ 1 k          | B  | 30.1/29.6    |
| R8      | 7030003520 | S.RES ERJ3GEYJ 472 V (4.7 k) | B  | 39.5/18.4    |
| R9      | 7030003600 | S.RES ERJ3GEYJ 223 V (22 k)  | B  | 13.8/30.5    |
| R10     | 7030000740 | S.RES MCR10EZHJ 1 M          | B  | 25.8/34.9    |
| R11     | 7030000540 | S.RES MCR10EZHJ 22 k         | B  | 24.8/37.8    |
| R12     | 7030003560 | S.RES ERJ3GEYJ 103 V (10 k)  | B  | 10.8/30.5    |
| R13     | 7030003600 | S.RES ERJ3GEYJ 223 V (22 k)  | B  | 19.3/34.5    |
| R14     | 7030003770 | S.RES ERJ3GEYJ 564 V (560 k) | B  | 21/34.5      |
| R15     | 7030003650 | S.RES ERJ3GEYJ 563 V (56 k)  | B  | 21/40.3      |
| R16     | 7030003770 | S.RES ERJ3GEYJ 564 V (560 k) | B  | 19.3/40.3    |
| R17     | 7030003560 | S.RES ERJ3GEYJ 103 V (10 k)  | B  | 22.7/40.3    |
| R18     | 7030003410 | S.RES ERJ3GEYJ 561 V (560)   | B  | 8.6/43.5     |
| R19     | 7030003620 | S.RES ERJ3GEYJ 333 V (33 k)  | B  | 16.7/42.1    |
| R20     | 7030000560 | S.RES MCR10EZHJ 33 k         | B  | 28.1/40.4    |
| R21     | 7030000380 | S.RES MCR10EZHJ 1 k          | B  | 26.3/28.6    |
| R22     | 7030000440 | S.RES MCR10EZHJ 3.3 k        | B  | 24/11.4      |
| R23     | 7030000460 | S.RES MCR10EZHJ 4.7 k        | B  | 24/8.8       |
| R24     | 7030000260 | S.RES MCR10EZHJ 100 (101)    | B  | 20.3/11.4    |
| R25     | 7030000260 | S.RES MCR10EZHJ 100 (101)    | B  | 20.3/8.8     |
| R26     | 7030000500 | S.RES MCR10EZHJ 10 k         | B  | 30.5/22      |
| R27     | 7030007220 | S.RES ERA3YED 202V (2 k)     | B  | 30.2/19.6    |
| R28     | 7030011200 | S.RES ERA3YEB 303V (30 k)    | B  | 30/18.1      |
| R29     | 7030011190 | S.RES ERA3YEB 103V (10 k)    | B  | 26.9/16.6    |
| R30     | 7030005871 | S.RES ERA3YKD 104V (100 k)   | B  | 40.4/15.1    |
| R31     | 7030003560 | S.RES ERJ3GEYJ 103 V (10 k)  | B  | 29.8/15.9    |
| R32     | 7030005341 | S.RES ERA3YED 332V (3.3 k)   | B  | 43.4/11.1    |
| R33     | 7030000500 | S.RES MCR10EZHJ 10 k         | B  | 31.7/9.8     |
| R34     | 7030000740 | S.RES MCR10EZHJ 1 M          | B  | 42.1/14.4    |
| R35     | 7030003440 | S.RES ERJ3GEYJ 102 V (1 k)   | B  | 40.4/12.2    |
| R36     | 7030000460 | S.RES MCR10EZHJ 4.7 k        | B  | 34.7/23.8    |
| R37     | 7030005501 | S.RES ERA3YKD 124V (120 k)   | B  | 33.6/21.3    |
| R38     | 7030005671 | S.RES ERA3YKD 393V (39 k)    | B  | 30.1/25.1    |
| R39     | 7030000010 | S.RES MCR10EZHJ JPW          | B  | 28.1/42.2    |
| R40     | 7030000010 | S.RES MCR10EZHJ JPW          | B  | 27.7/8.4     |
| R41     | 7030000010 | S.RES MCR10EZHJ JPW          | B  | 34.6/9.2     |
| R42     | 7030008240 | S.RES ERJ12YJ0R00U           | B  | 38.9/7.4     |
| R43     | 7030000010 | S.RES MCR10EZHJ JPW          | B  | 30.1/33.3    |
| R44     | 7030000010 | S.RES MCR10EZHJ JPW          | B  | 28.1/33.3    |
| R45     | 7030000010 | S.RES MCR10EZHJ JPW          | B  | 29.1/38      |
| R46     | 7030000010 | S.RES MCR10EZHJ JPW          | B  | 29.1/36.1    |
| R47     | 7030000010 | S.RES MCR10EZHJ JPW          | B  | 43.9/18.3    |
| R48     | 7030008240 | S.RES ERJ12YJ0R00U           | B  | 43/28.9      |
| R49     | 7030000010 | S.RES MCR10EZHJ JPW          | B  | 23.5/5.7     |
| R50     | 7030008240 | S.RES ERJ12YJ0R00U           | B  | 34.1/38.2    |
| R51     | 7030000010 | S.RES MCR10EZHJ JPW          | B  | 23.9/34.9    |
| R52     | 7030000010 | S.RES MCR10EZHJ JPW          | B  | 24.7/32      |
| R53     | 7030008240 | S.RES ERJ12YJ0R00U           | B  | 38.6/33.1    |
| R54     | 7030000010 | S.RES MCR10EZHJ JPW          | B  | 34.4/33      |
| R55     | 7030000010 | S.RES MCR10EZHJ JPW          | B  | 32/60.1      |
| R56     | 7030000010 | S.RES MCR10EZHJ JPW          | B  | 42.1/41.5    |
| R57     | 7030000010 | S.RES MCR10EZHJ JPW          | B  | 37.2/41.5    |
| R58     | 7030000010 | S.RES MCR10EZHJ JPW          | B  | 24.9/57      |
| R59     | 7030000010 | S.RES MCR10EZHJ JPW          | B  | 27.6/49.3    |
| R60     | 7030000010 | S.RES MCR10EZHJ JPW          | B  | 16.3/58.3    |
| R61     | 7030000010 | S.RES MCR10EZHJ JPW          | B  | 4.9/31.7     |
| R62     | 7030000010 | S.RES MCR10EZHJ JPW          | B  | 39.1/41.5    |
| R63     | 7030000010 | S.RES MCR10EZHJ JPW          | B  | 31.4/43.6    |
| R64     | 7030000010 | S.RES MCR10EZHJ JPW          | B  | 40.1/38.7    |
| R65     | 7030000010 | S.RES MCR10EZHJ JPW          | B  | 4.9/49.5     |
| R66     | 7030003560 | S.RES ERJ3GEYJ 103 V (10 k)  | B  | 8.2/13.6     |
| R67     | 7030000100 | S.RES MCR10EZHJ 4R7 (4.7)    | B  | 10.2/45.1    |
| C1      | 4030006900 | S.CER C1608 JB 1H 103K-T     | B  | 44.5/70.7    |
| C2      | 4030006900 | S.CER C1608 JB 1H 103K-T     | B  | 48.2/73.5    |
| C3      | 4030006860 | S.CER C1608 JB 1H 102K-T     | B  | 44.5/67.8    |

[MAIN UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION              | M. | H/V LOCATION |
|---------|------------|--------------------------|----|--------------|
| C4      | 4030006900 | S.CER C1608 JB 1H 103K-T | B  | 32.9/69.7    |
| C5      | 4030006900 | S.CER C1608 JB 1H 103K-T | B  | 32.9/71.1    |
| C6      | 4510008540 | S.ELE EEE1CA100SR        | B  | 17.5/63.8    |
| C7      | 4030011600 | S.CER C1608 JB 1E 104K-T | B  | 13.4/60.8    |
| C8      | 4030006900 | S.CER C1608 JB 1H 103K-T | B  | 9.2/58.7     |
| C9      | 4030011600 | S.CER C1608 JB 1E 104K-T | B  | 13.4/63.8    |
| C10     | 4510009150 | S.ELE EEE1EA470WP        | B  | 43.6/62.8    |
| C11     | 4030006900 | S.CER C1608 JB 1H 103K-T | B  | 35.8/67.9    |
| C12     | 4030006900 | S.CER C1608 JB 1H 103K-T | B  | 32.4/67.9    |
| C13     | 4510009150 | S.ELE EEE1EA470WP        | B  | 26.5/62.8    |
| C14     | 4510008660 | S.ELE EEE0JA220SR        | B  | 34.3/28      |
| C15     | 4510008660 | S.ELE EEE0JA220SR        | B  | 40.8/23.8    |
| C16     | 4030006860 | S.CER C1608 JB 1H 102K-T | B  | 12.3/30.5    |
| C17     | 4030011600 | S.CER C1608 JB 1E 104K-T | B  | 19.3/37.4    |
| C18     | 4030006900 | S.CER C1608 JB 1H 103K-T | B  | 21/37.4      |
| C19     | 4030006900 | S.CER C1608 JB 1H 103K-T | B  | 13.1/42.2    |
| C20     | 4030009980 | S.CER C1608 JB 1H 152K-T | B  | 8.6/42.1     |
| C21     | 4030011600 | S.CER C1608 JB 1E 104K-T | B  | 9.5/21.9     |
| C22     | 4030006900 | S.CER C1608 JB 1H 103K-T | B  | 19/25.5      |
| C23     | 4030006900 | S.CER C1608 JB 1H 103K-T | B  | 26.9/23.2    |
| C24     | 4030006900 | S.CER C1608 JB 1H 103K-T | B  | 26.9/18      |
| C25     | 4030004760 | S.CER C2012 JF 1H 104Z-T | B  | 33.2/17.5    |
| C26     | 4030006900 | S.CER C1608 JB 1H 103K-T | B  | 41.9/11.1    |
| C27     | 4030006900 | S.CER C1608 JB 1H 103K-T | B  | 29.5/12.6    |
| C28     | 4030006900 | S.CER C1608 JB 1H 103K-T | B  | 30.1/23.7    |
| J1      | 6510024940 | CNR HEC2305-016250       |    |              |
| DS1     | 5040002740 | LED RT3-03HRYG           |    |              |

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

# SECTION 7

# MECHANICAL PARTS

## [CHASSIS PARTS]

| REF NO. | ORDER NO.  | DESCRIPTION  | QTY.        |
|---------|------------|--|-------------|
| J1      | 6910015910 | ANT CONNECTOR 104                                  | 1           |
| J2      | 6910015860 | IMSA-6277S-O2A-G                                   | 1           |
| S1      | 2260002870 | AS-243-A13 [2CH] only                              | 1           |
| SP1     | 2510001061 | K036NA500-67                                       | 1           |
| W1      | 8900009640 | OPC-963  | 1           |
| W2      | 8900009640 | OPC-963 [2CH] only                                 | 1           |
| MP1     | 8010019695 | 2775 CHASSIS-5                                     | 1           |
| MP2     | 8210020920 | 2775 FRONT PANEL (Inc. MP4, 5, 6, 7) [16CH]        | 1           |
|         | 8210020930 | 2775 FRONT PANEL (A) (Inc. MP4, 5, 6, 7) [2CH]     | 1           |
|         | 8210024600 | 2775 A-FRONT PANEL (Inc. MP4, 5, 6, 7, 43) [F4018] | 1           |
| MP3     | 8210020820 | 2775 PTT PANEL [Others]                            | 1           |
|         | 8210024560 | 2775 A-PTT PANEL [F4018]                           | 1           |
| MP4     | 8930063360 | 2775 PTT BUTTON                                    | 1           |
| MP5     | 8930063370 | 2775 PTT RUBBER                                    | 1           |
| MP6     | 8930040390 | SPEAKER NET (B)                                    | 1           |
| MP7     | 8930046050 | SPEAKER NET (C)                                    | 1           |
| MP8     | 8210020550 | 2721 REAR PANEL                                    | 1           |
| MP9     | 8930063351 | 2775 LENS-1  | 1           |
| MP10    | 8610011930 | KNOB N-318 (Incl. MP23)                            | 1           |
| MP11    | 8610012130 | KNOB N-323 (Incl. MP24)                            | [16CH] only |
| MP13    | 8930075190 | 2775 C-MAIN SEAL [16CH]                            | 1           |
|         | 8930063340 | 2775 A-MAIN SEAL [2CH]                             | 1           |
| MP14    | 8930063060 | 2721 T-RUBBER                                      | 1           |
| MP16    | 8930063400 | 2775 SIDE PLATE                                    | 1           |
| MP17    | 8930063411 | 2775 B-TOP PLATE-1 [16CH]                          | 1           |
|         | 8930063420 | 2775 A-TOP PLATE [2CH]                             | 1           |
| MP20    | 8930043760 | 1923 MIC SEAL                                      | 1           |
| MP21    | 8930059360 | 2600 RELEASE BUTTON                                | 1           |
| MP22    | 8930070362 | 2775 RELEASE PLATE (A)-2                           | 1           |
| MP23    | 8610007510 | KNOB SPRING NO.7800                                | 1           |
| MP24    | 8610007920 | KNOB SPRING NO.1500 [16CH] only                    | 1           |
| MP25    | 8830001720 | 2721 ANT NUT                                       | 1           |
| MP26    | 8810009221 | SCREW BT B0 2X8 NI-ZK3 (BT)                        | 2           |
| MP27    | 8810009561 | SCREW BT B0 2X6 NI-ZK3 (BT)                        | 2           |
| MP28    | 8810009511 | SCREW BT B0 2X4 NI-ZC3 (BT)                        | 9           |
| MP29    | 8810009511 | SCREW BT B0 2X4 NI-ZC3 (BT)                        | 1           |
| MP30    | 8810009511 | SCREW BT B0 2X4 NI-ZC3 (BT)                        | 1           |
| MP31    | 8810010430 | SCREW TRUSS M3X5 SUS SSBC                          | 1           |
| MP32    | 8930051290 | 2251 OPT SHEET                                     | 1           |
| MP33    | 8930042350 | 1922 MIC SHEET                                     | 1           |
| MP34    | 8930056540 | PUSH SPRING (AH)                                   | 2           |
| MP35    | 8830001701 | VR NUT (Q)-1                                       | 1           |
| MP36    | 8830001701 | VR NUT (Q)-1 [16CH] only                           | 1           |
| MP37    | 8830001741 | VR NUT (S)-1 [2CH] only                            | 1           |
| MP42    | 8930074580 | 2775 NAME SHEET [F4018] only                       | 1           |
| MP43    | 8930074610 | SP NET (E) [F4018] only                            | 1           |

## [MAIN/MAIN-B UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION                       | QTY. |
|---------|------------|-----------------------------------|------|
| J2      | 6450001680 | HSJ1122-010010                    | 1    |
| J3      | 6450002250 | HSJ1456-010320                    | 1    |
| MC1     | 7700002750 | EM9745P-38-G                      | 1    |
| S1      | 2260002840 | SKHLLFA010                        | 1    |
| S4      | 2250000490 | TP70TF5163 15.9F-2775 [16CH] only | 1    |
| MP1*    | 8410002531 | 2681 PA HEATSINK-1                | 1    |
| MP2     | 8510016460 | 2775 VCO COVER                    | 1    |
| MP3*    | 8510016470 | 2775 VCO CASE                     | 1    |
| MP4*    | 8510016580 | 2775 SHIELD PLATE                 | 1    |
| MP5     | 8510016770 | 2776 EARTH PLATE                  | 1    |

## [ANT UNIT]

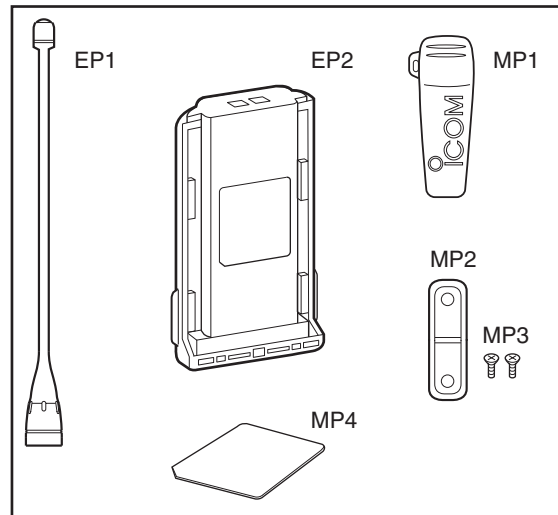
| REF NO. | ORDER NO.  | DESCRIPTION    | QTY. |
|---------|------------|----------------|------|
| MP601   | 8510016350 | 2721 ANT PLATE | 1    |

## [CONNECT UNIT]

| REF NO. | ORDER NO.  | DESCRIPTION             | QTY. |
|---------|------------|-------------------------|------|
| J501    | 6910016390 | IMSA-9230B-1-02Z145-PT1 | 1    |

## [ACCESSORIES]

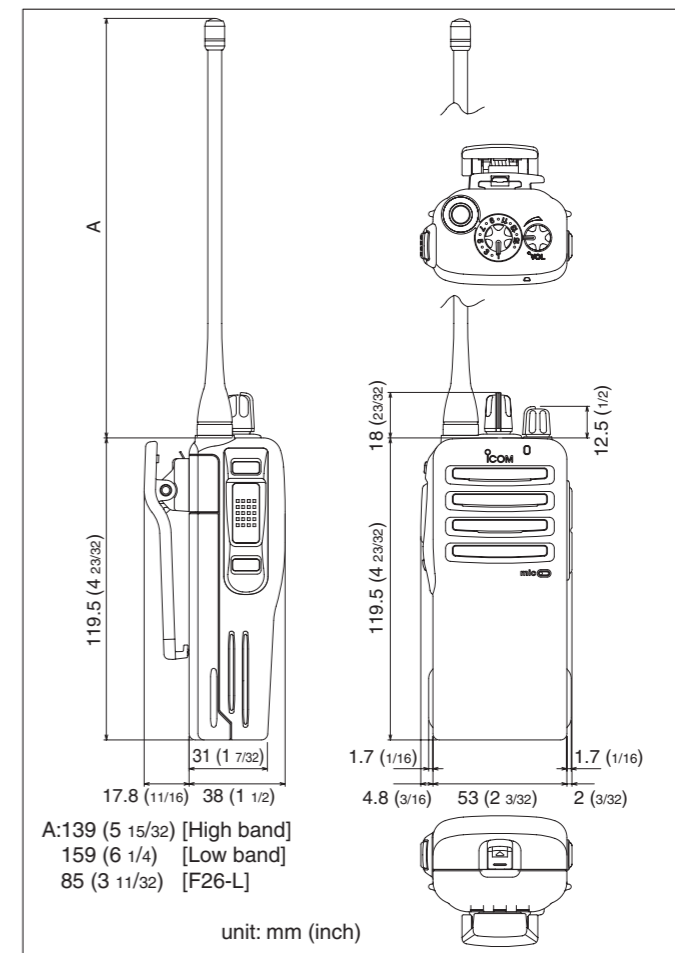
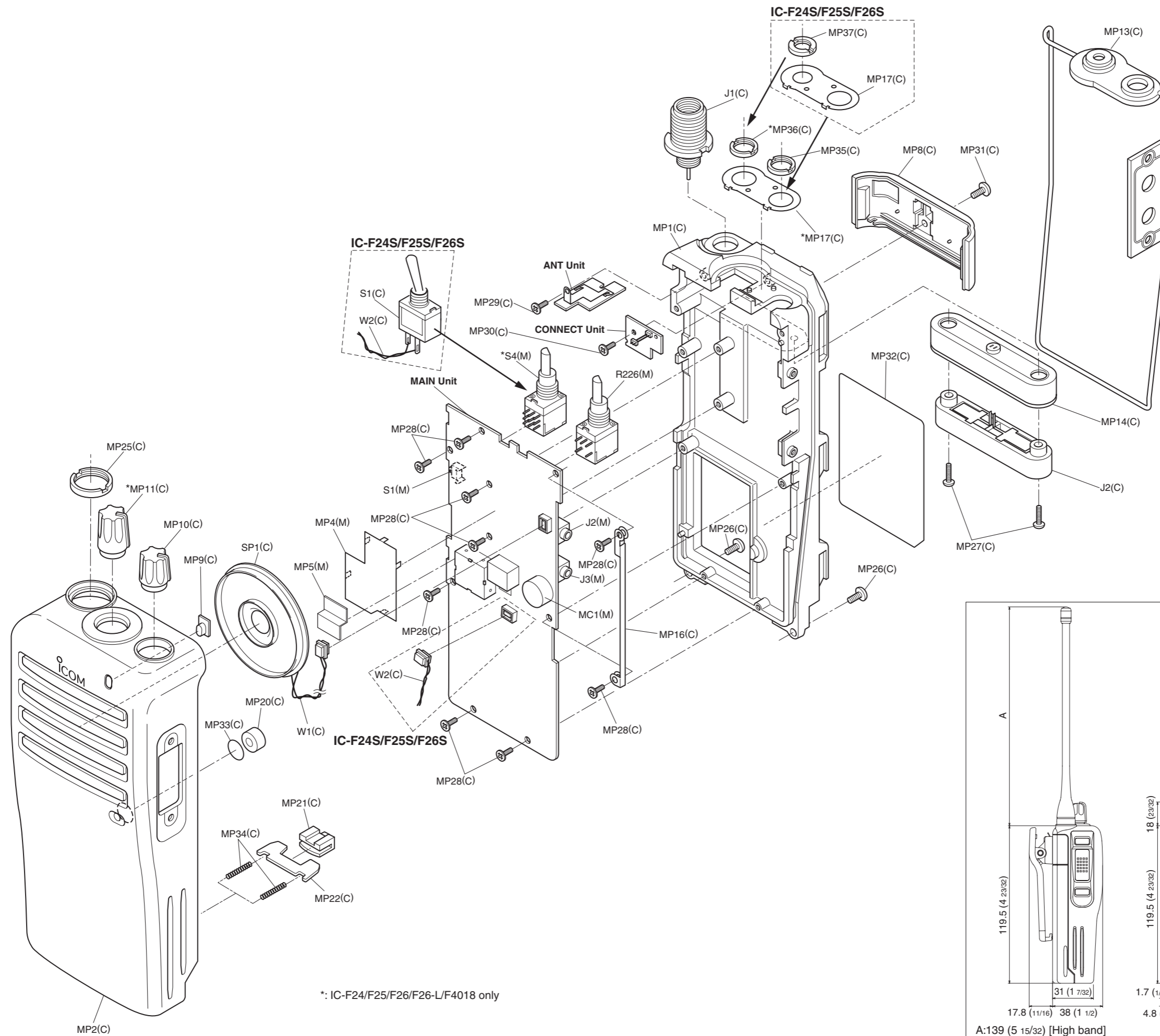
| REF NO. | ORDER NO.  | DESCRIPTION                     | QTY. |
|---------|------------|---------------------------------|------|
| EP1**   | -          | FA-SC57U-1 [Low band]           | 1    |
|         | -          | FA-SC72U-1 [High band]          | 1    |
|         | -          | FA-SC01U-2 [F26-L]              | 1    |
| EP2**   | -          | BP-232N                         | 1    |
| EP3**   | -          | BC-160 [USA-04], [USA-05] only  | 1    |
| EP4**   | -          | BC-145A [USA-04], [USA-05] only | 1    |
| MP1     | 8010019540 | MB-94 ACC                       | 1    |
| MP2     | 8210020560 | 2721 JACK PANEL [Others]        | 1    |
|         | 8210022780 | 2927 JACK PANEL [F4018]         | 1    |
| MP3     | 8810004861 | SCREW PH M2X6 ZK3               | 2    |
| MP4     | 8930051290 | 2251 OPT SHEET                  | 1    |



\*: Refer to "BOARD LAYOUTS."

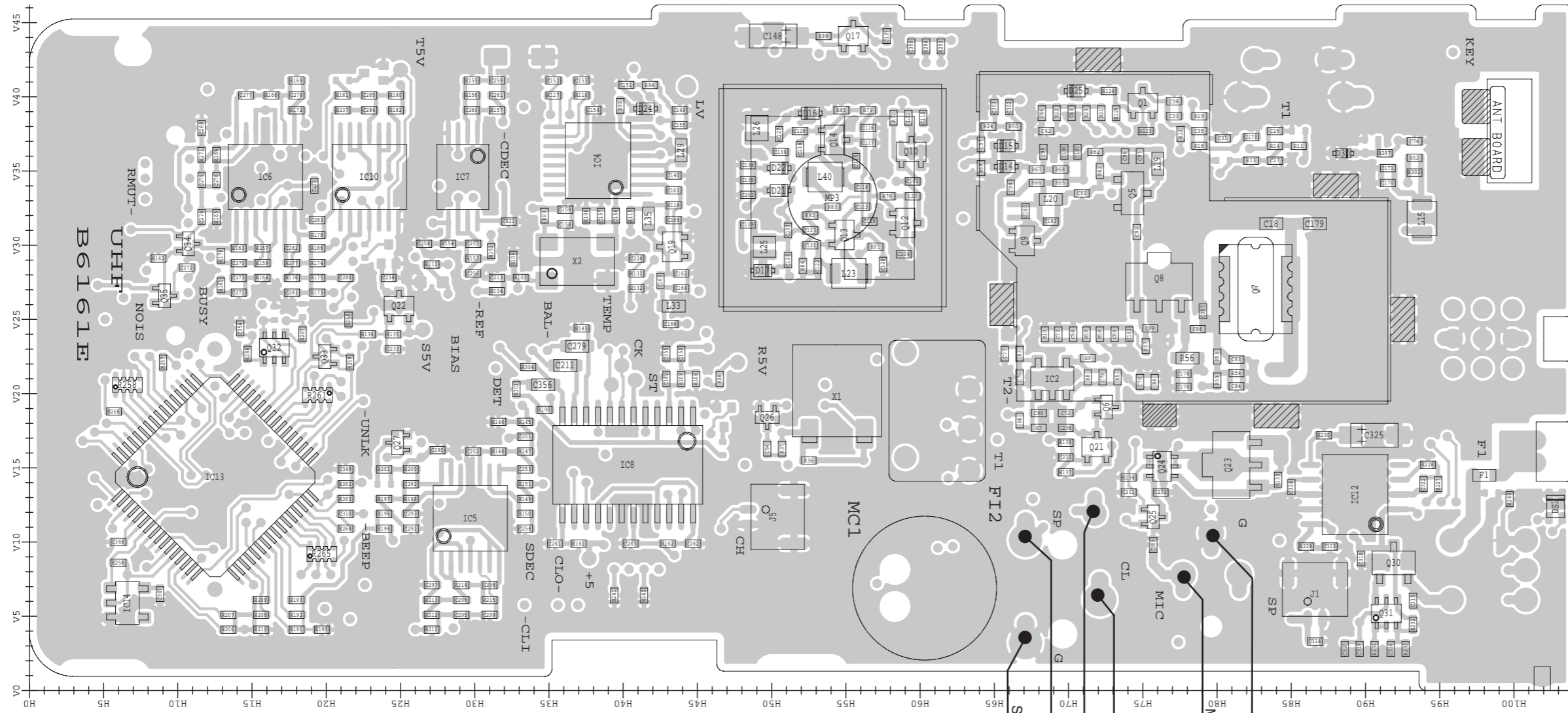
\*\* : Optional product.

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



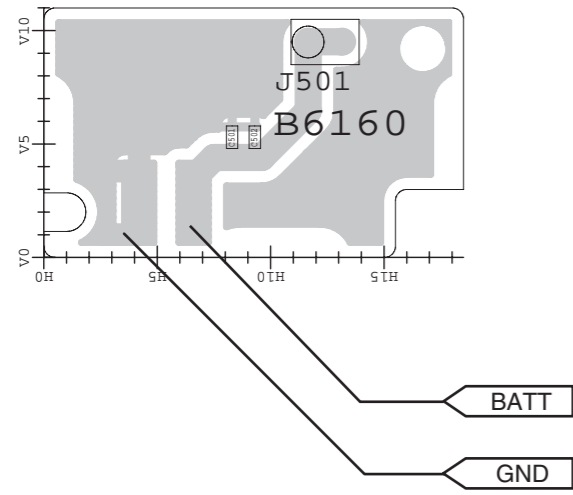


• MAIN/MAIN-B UNIT  
(TOP VIEW)

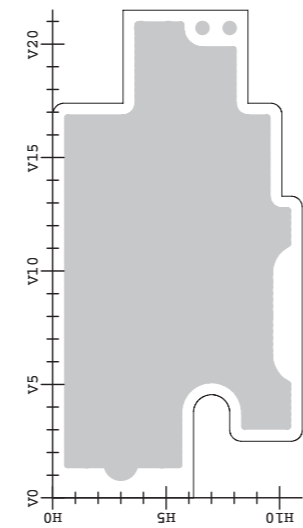


The combination of this side and the bottom side shows the board layout in the same configuration as the actual P.C.Board.

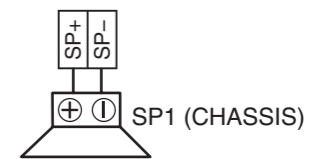
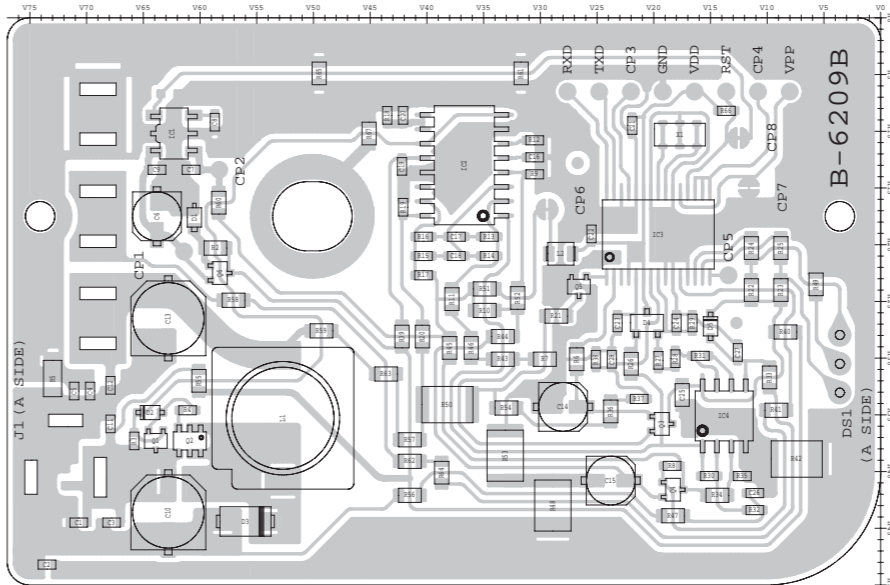
• CONNECT UNIT  
(TOP VIEW)



• ANT UNIT  
(TOP VIEW)

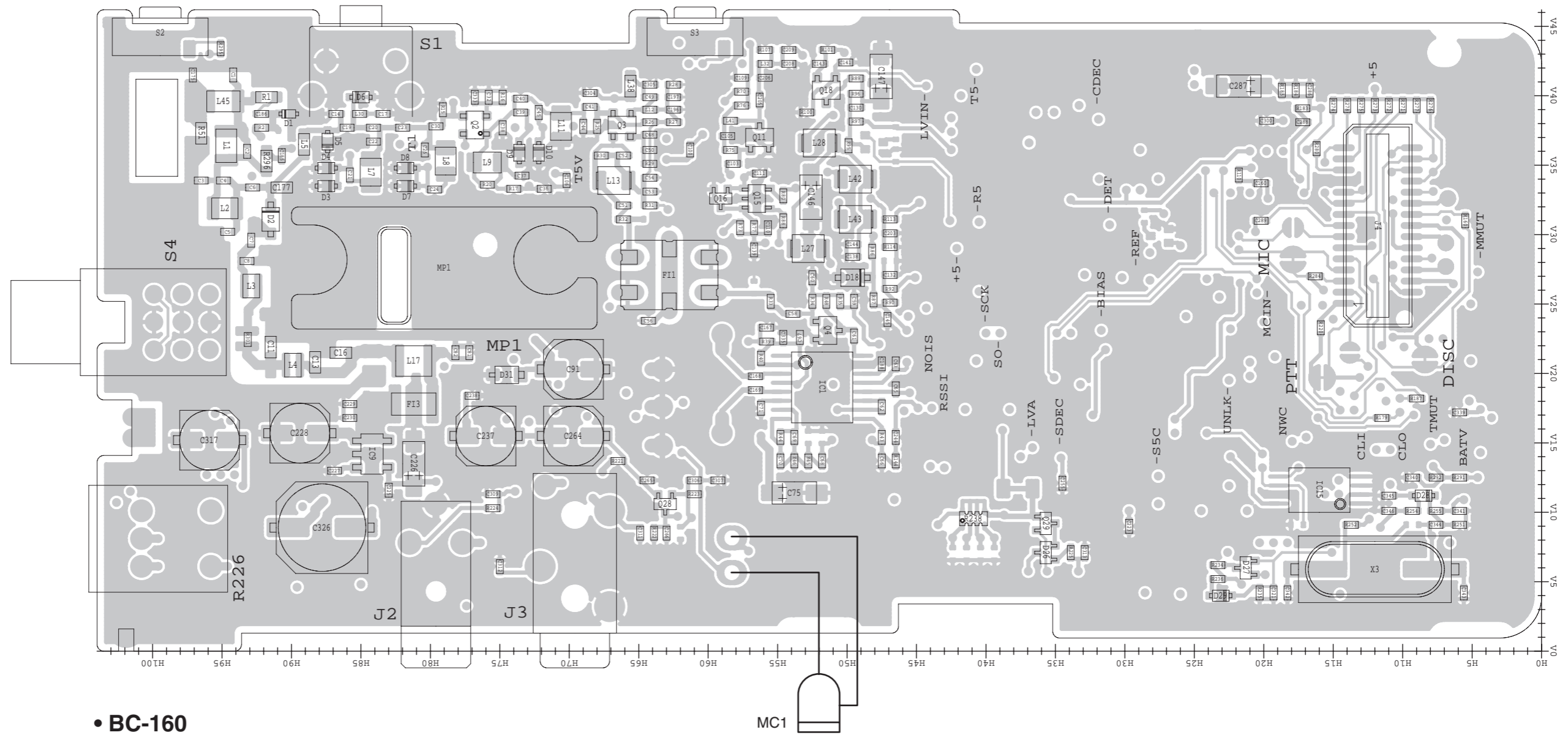


• BC-160  
(TOP VIEW)

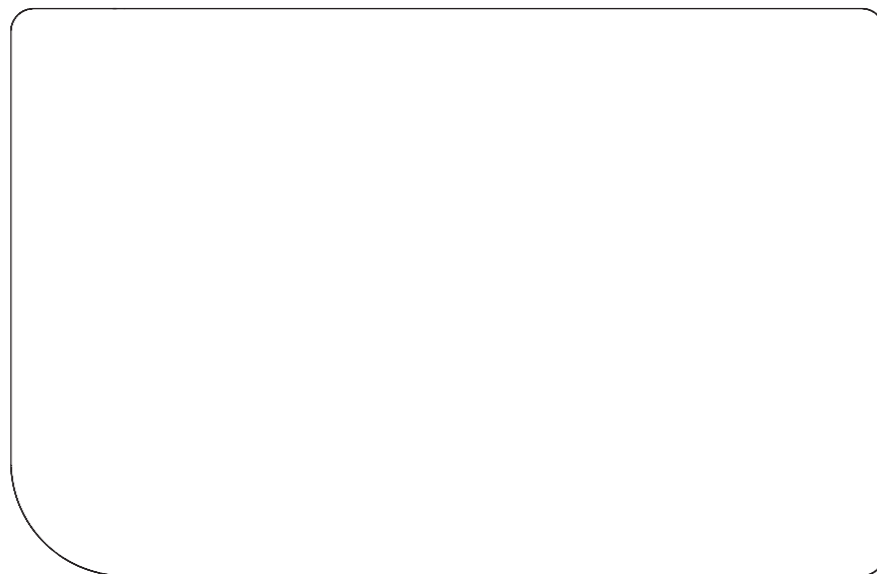


The combination of this side and the bottom side shows the board layout in the same configuration as the actual P.C.Board.

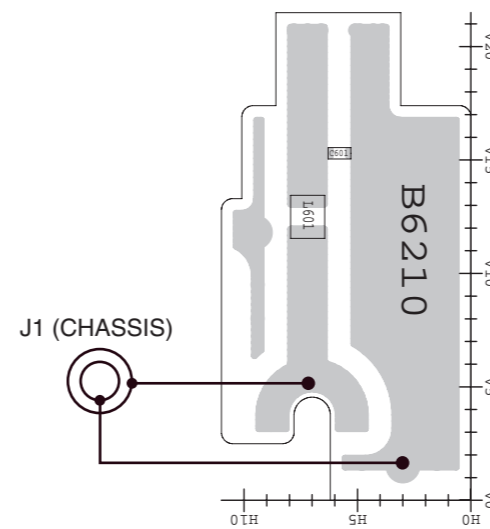
• MAIN/MAIN-B UNIT  
(BOTTOM VIEW)



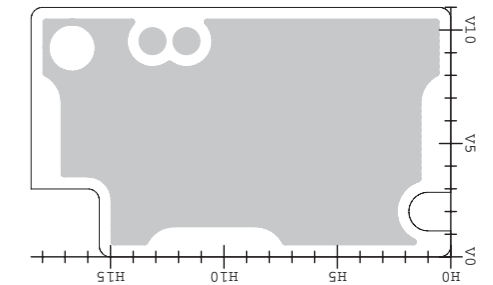
• BC-160  
(BOTTOM VIEW)



• ANT UNIT  
(BOTTOM VIEW)

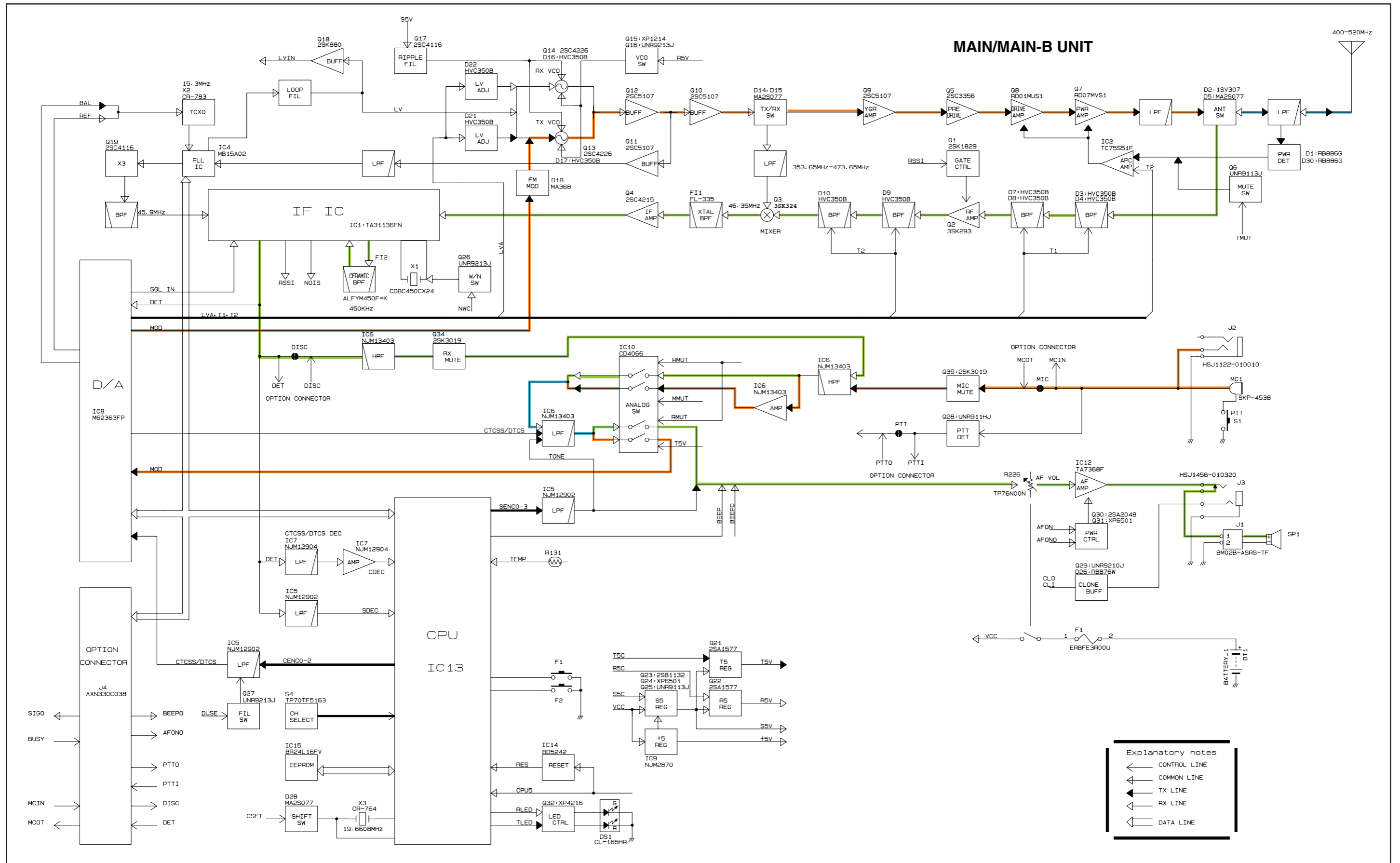


• CONNECT UNIT  
(BOTTOM VIEW)



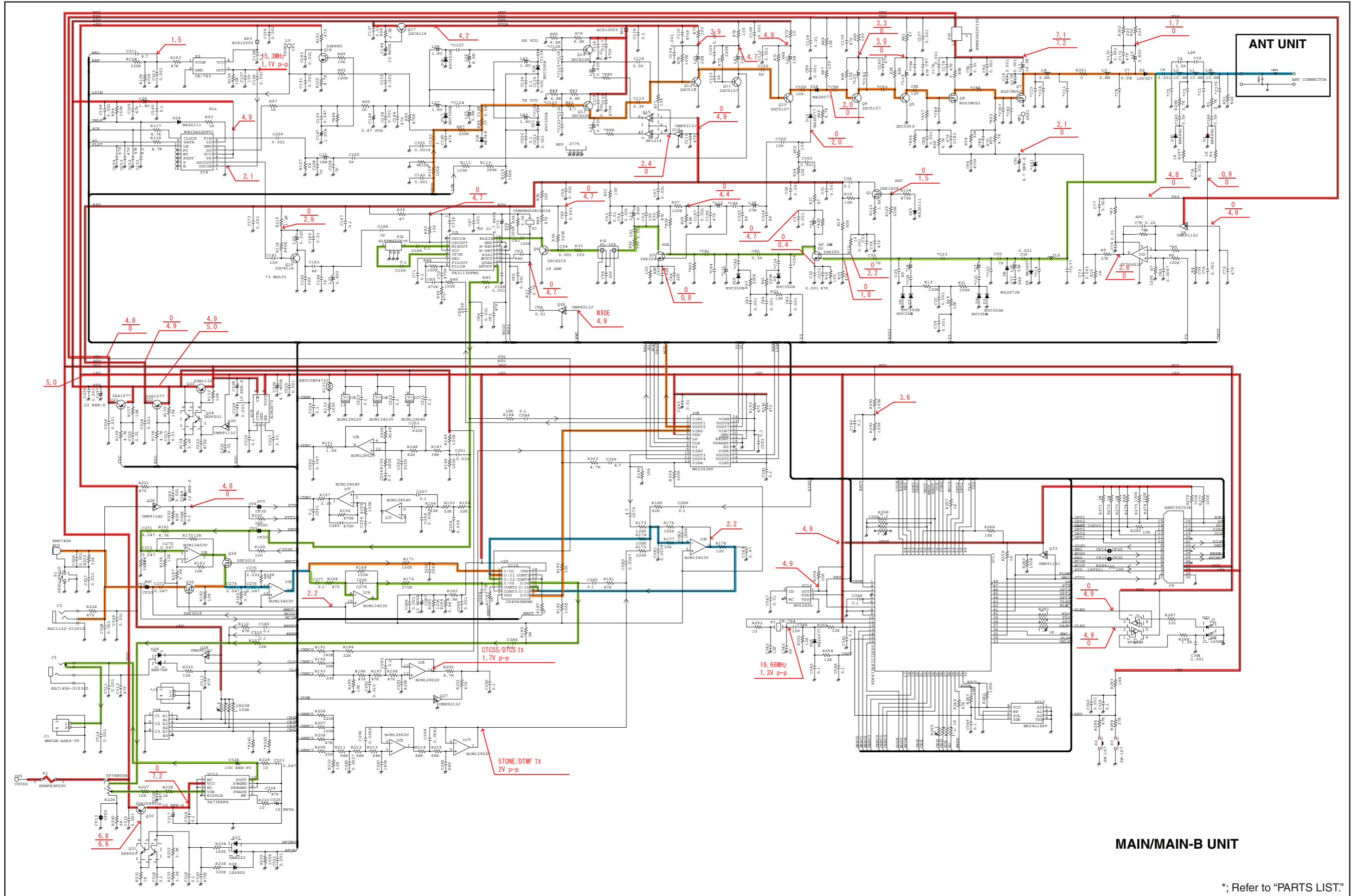
# SECTION 9

# BLOCK DIAGRAM



**SECTION 10**

**VOLTAGE DIAGRAM**



\*; Refer to "PARTS LIST"

# SECTION 11

# BC-160 (Optional)

### [CHASSIS PARTS]

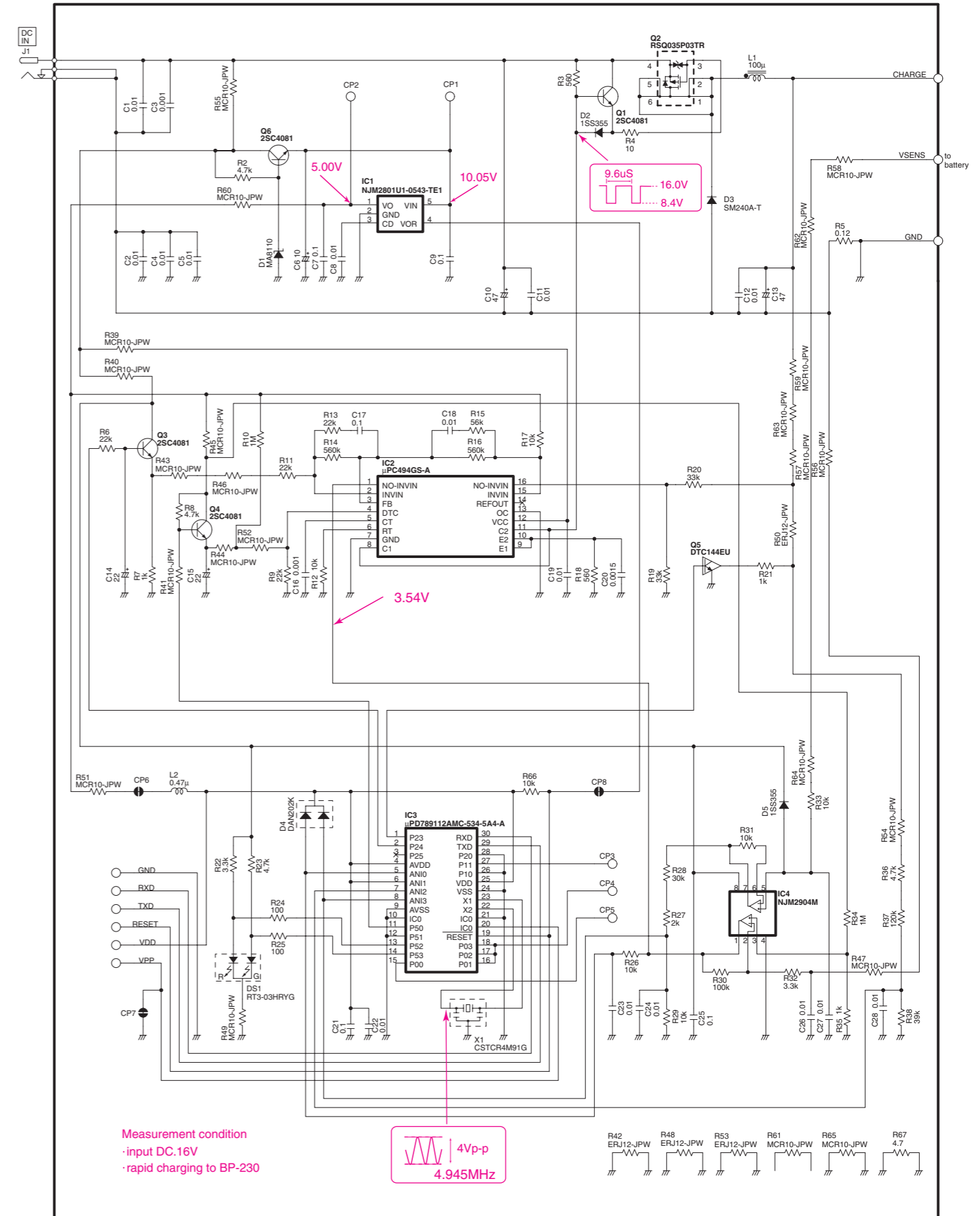
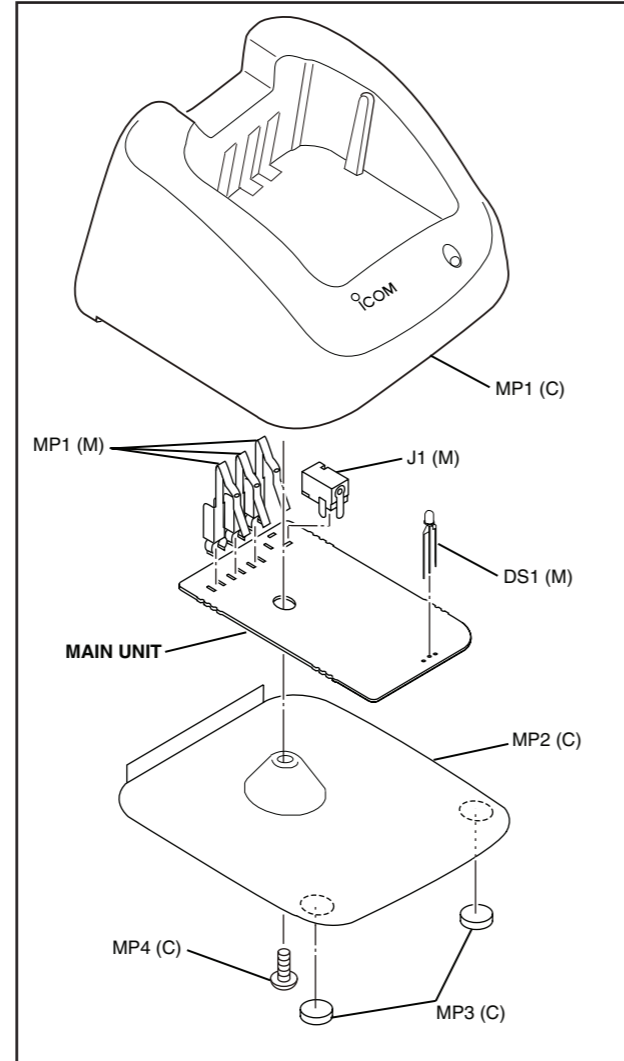
| REF. NO. | ORDER NO.  | DESCRIPTION              | QTY. |
|----------|------------|--------------------------|------|
| MP1      | 8010019750 | 2830 case                | 1    |
| MP2      | 8110008220 | 2830 cover               | 1    |
| MP3      | 8930039620 | Leg cushion (A)          | 2    |
| MP4      | 8810008630 | Screw PH BT M3 x 6 NI-ZU | 1    |

### [MAIN UNIT]

| REF. NO. | ORDER NO.  | DESCRIPTION              | QTY. |
|----------|------------|--------------------------|------|
| J1       | 6510023070 | Connector HEC2305-01-250 | 1    |
| DS1      | 5040002740 | LED RT3-03HRYG           | 1    |
| MP1      | 8930064410 | 2830 TERMINAL            | 3    |

### [ACCESSORIES]

| REF. NO. | ORDER NO.        | DESCRIPTION      | QTY.    |
|----------|------------------|------------------|---------|
| EP1      | Optional product | Charger BC-145E  | [EUR] 1 |
|          | Optional product | Charger BC-145UK | [UK] 1  |



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