

## ALIGNMENT PROCEDURE FOR GMR2099-2CK (AMWUT029)

## TRANSMITTER

| STEP | MODE      | CHANNEL              | FREQUENCY   | CONDITION                                                                                                                                                                                                                                                                            | ADJUST | METHOD                                                                                                        |
|------|-----------|----------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------------------------------------------------------------------------------------------------------------|
| 1    | POWER OFF | -                    | -           | CONNECT DC POWER SUPPLY TO THE BATT POWER SUPPLY PATTERN ON THE PCB.                                                                                                                                                                                                                 | -      | INPUT VOLTAGE : DC6.0V/2A                                                                                     |
| 2    | TX        | 8                    | 467.5625MHz | CONNECT RF WATTMETER TO THE ANTENNA PATTERN ON THE PCB.                                                                                                                                                                                                                              | RT201  | KEY THE TRANSMITTER WITH PTT, AND ADJUST THE OUTPUT POWER AT $0.50W \pm 0.05W$                                |
| 3    | TX        | 1                    | 462.5625MHz | CONNECT FREQUENCY COUNTER TO THE ANTENNA PATTERN ON THE PCB WITH AN APPROPRIATE ATTENUATOR.                                                                                                                                                                                          | CT401  | KEY THE TRANSMITTER WITHOUT ANY MODULATION. ADJUST TRANSMISSION FREQUENCY TO $462.562500MHz \pm 100Hz$        |
| 4    | TX        | 1                    | 462.5625MHz | CONNECT MODULATION ANALYZER TO THE ANTENNA PATTERN ON THE PCB.<br>HPF:OFF LPF:3KHz DE-EMP:OFF<br><br>CONNECT OSCILLOSCOPE TO MODULATION OUTPUT OF THE MODULATION ANALYZER.<br><br>CONNECT AUDIO GENERATOR TO TP3(BAL)<br>WAVEFORM:20Hz SQUARE WAVE<br>MAGNITUDE:1.5Vp-p(DC COUPLING) | RT402  | KEY THE TRANSMITTER, AND ADJUST RT402 AS THE WAVEFORM ON THE OSCILLOSCOPE COMES TO BE A CERTAIN SQUARE WAVE   |
| 5    | TX        | 1<br>+CTCSS<br>No.27 | 462.5625MHz | CONNECT MODULATION ANALYZER TO THE ANTENNA PATTERN ON THE PCB.<br>HPF:OFF LPF:15KHz DE-EMP:OFF<br><br>INJECT 1KHz 60mVp-p SINE WAVE TO MICROPHONE JACK FROM AUDIO GENERATOR.                                                                                                         | RT403  | KEY THE TRANSMITTER, AND ADJUST RT201 AS THE MODULATION ANALYZER INDICATES $\pm 2.2KHz \pm 0.1KHz$ DEVIATION. |

## RECEIVER

| STEP | MODE | CHANNEL | FREQUENCY   | CONDITION                                                                                                                                                                                                                                      | ADJUST | METHOD                                                                                                                                      |
|------|------|---------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | RX   | 1       | 462.5625MHz | CONNECT DC VOLTMETER TO TP2<br><br>INJECT -47dBm RF SIGNAL WITHOUT MODULATION FROM SSG TO THE ANTENNA PATTERN ON THE PCB.                                                                                                                      | L403   | ADJUST L403 AS THE VOLTMETER INDICATES $1.3V \pm 0.05V$                                                                                     |
| 2    | RX   | 1       | 462.5625MHz | CONNECT SINAD METER TO SPEAKER JACK WITH $16\Omega$ DUMMY LOAD.<br><br>INJECT RF SIGNAL FROM SSG AS FOLLOWING CONDITION.<br>MAGNITUDE:AS LARGE AS THE RECEIVER OBTAINS 10dB SINAD SENSITIVITY.<br>DEVIATION: $\pm 1.5KHz$<br>AF FREQUENCY:1KHz | RT404  | TURN TO C.W. MAX, SET TO 10dB SINAD FIRST. TURN TO C.C.W. MAX. ADJUST SLOWLY TO THE POINT WHERE WAVEFORM APPEARS AT THE SPEAKER OUT. (C.W.) |

|                        |  |              |  |                       |  |            |  |  |             |  |  |  |  |
|------------------------|--|--------------|--|-----------------------|--|------------|--|--|-------------|--|--|--|--|
| ALIGNMENT<br>PROCEDURE |  | FORM-4       |  | REFERENCE DIAGRAM NO. |  |            |  |  | PAGE        |  |  |  |  |
| MODEL                  |  | UNIT         |  | BLOCK                 |  | ISSUE DATE |  |  | ISSUED      |  |  |  |  |
| AMWUT029               |  |              |  |                       |  | 2007/1/29  |  |  | ONO         |  |  |  |  |
| TITLE                  |  | ADJUST POINT |  | SUB TITLE             |  |            |  |  | REF DIAGRAM |  |  |  |  |

  

1. MAIN PCB B101 (TOP VIEW)

2. MAIN PCB B101 (BOTTOM VIEW)

CHG JACK

  

|                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>TP1 : VCONT                    +6V:DC 6V</p> <p>TP2 : DISC OUT(De_Em)LOCAL OUT</p> <p>TP3 : BALANCE                RF IN/OUT</p> <p>TP4 : AF OUT                 UP</p> <p>TP5 : MIC IN                 DN</p> <p>TP6 : BOOST                 CHG:DC 11V</p> <p>TP7 : PTT                     with CHARGE JIG</p> <p>TP8 : BATT SEL</p> | <p>L182 : VCONT ADJ.</p> <p>L401 : DISC.ADJ.</p> <p>RT201 : TX POWER ADJ.</p> <p>CT401 : FREQ. ADJ.</p> <p>RT402 : MOD. BALANCE ADJ</p> <p>RT403 : MAX DEV. ADJ.</p> <p>RT404 : SQ ADJ.</p> |
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| <b>REVISIONS:</b> | REV. CODE    | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ |
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| ALIGNMENT PROCEDURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |              |      |   |           |              |            |             |        |   | FORM - 3 |   | PAGE |   |   |   |
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| MODEL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |              | UNIT |   | BLOCK     |              | ISSUE DATE |             | ISSUED |   |          |   |      |   |   |   |
| AMWUT029                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |              |      |   |           |              | 2007/1/29  |             | ONO    |   |          |   |      |   |   |   |
| TITLE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | TEST MODE    |      |   | SUB TITLE | CONFIRMATION |            | REF DIAGRAM |        |   |          |   |      |   |   |   |
| <p><b>TEST MODE</b></p> <p><b>1.TEST MODE IN</b></p> <p style="margin-left: 40px;">PRESS AND HOLD [wx] , [mon] AND TURN POWER ON</p> <p style="margin-left: 40px;">WILL BE STARTED LCD TEST AND LED WILL TURN ON FOR 2sec.</p> <p><b>2.TEST MODE OUT TURN POWER OFF</b></p> <p><b>3.NOTE</b></p> <p><b>1) VIBRATION TEST(UT029ZH ONLY) (NOT USE)</b></p> <p style="margin-left: 40px;">To enter the vibration test: Press [tone] SW in All TEST MODE<br/>(except LCD TEST, WX ALERT MODE and GROUP DECODE TEST MODE).</p> <p style="margin-left: 40px;">To exit the vibration test: Press [tone] SW once more.</p> <p><b>2) SCRAMBLE TEST (NOT USE)</b></p> <p style="margin-left: 40px;">To enter the scramble test: Press [wx] SW in All TEST MODE<br/>(except LCD TEST, WX ALERT MODE).</p> <p style="margin-left: 40px;">To exit the vibration test: Press [wx] SW once more.</p> <p><b>* SCRM SETING IS FRS_CH ONLY(CH8~CH14) (NOT USE)</b></p> <p><b>4.TEST MODE ITEM</b></p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p style="margin-left: 20px;">*MODE CHANGE : PRESS [MENU] .</p> <p>1)LCD TEST MODE</p> <p><b>2)TX TEST MODE</b></p> <p>3)SUBCODE ENCODE TEST MODE<br/>(NOT USE)</p> <p>4)TX CALL TEST MODE (NOT USE)</p> <p style="margin-left: 40px;"><b>*USE ONLY TX TEST MODE.</b></p> </div> <div style="width: 45%;"> <p>5)VOX TEST MODE (NOT USE)</p> <p>6)RX TEST MODE (NOT USE)</p> <p>7)SUBCODE DECODE TEST MODE (NOT USE)</p> <p>8)STANDBY TEST MODE(NOT USE)</p> <p>9)WX ALERT TEST MODE(NOT USE)</p> <p>10)GROUP DECODE TEST MODE(NOT USE)</p> </div> </div> <p><b>5.TEST MODE PROPER</b></p> <p>1)LCD TEST MODE</p> <p style="margin-left: 40px;">AFTER LOGGING IN TEST MODE,</p> <p style="margin-left: 40px;">EACH LCD SEGMENT IS GRADUALLY DISPLAYED(LCD TEST MODE)</p> <p>2)TX TEST MODE</p> <p style="margin-left: 40px;">WHEN THE UNIT ENTERS THIS TEST MODE , CH1 AUTOMATICALLY DISPLAY.</p> <p style="margin-left: 40px;">PRESS [▲] OR [▼] :</p> <div style="margin-left: 80px;"> </div> <p style="margin-left: 40px;">PRESS [▲] OR [▼] FOR 500ms. → AUTO REPEAT FUNCTION ON.</p> <p style="margin-left: 40px;">PRESS [PTT] , "TX" INDICATOR WILL BE DISPLAYED ON LCD.</p> <p style="margin-left: 40px;">RX MUTE ON.</p> <p style="margin-left: 40px;">BATTERY SAVE FUNCTION IS ALWAYS OFF.</p> <p style="margin-left: 40px;">[tone] &amp; [mon] &amp; [d-call] FUNCTIONS ARE INVALIDATION.</p> <div style="border: 1px solid black; padding: 5px; margin-left: 600px; width: fit-content;"> <p>&lt;USE CH&gt;</p> <p>CH1:462.5625MHz(GMRS)</p> <p>CH8:467.5625MHz(FRS)</p> </div> |              |      |   |           |              |            |             |        |   |          |   |      |   |   |   |
| REVISIONS:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | REV. CODE    | △    | △ | △         | △            | △          | △           | △      | △ | △        | △ | △    | △ | △ | △ |
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