

# ALIGNMENT PROCEDURES

Model No : GMRS-1000

*Destination : MUSICAL ELECTRONICS LIMITED*

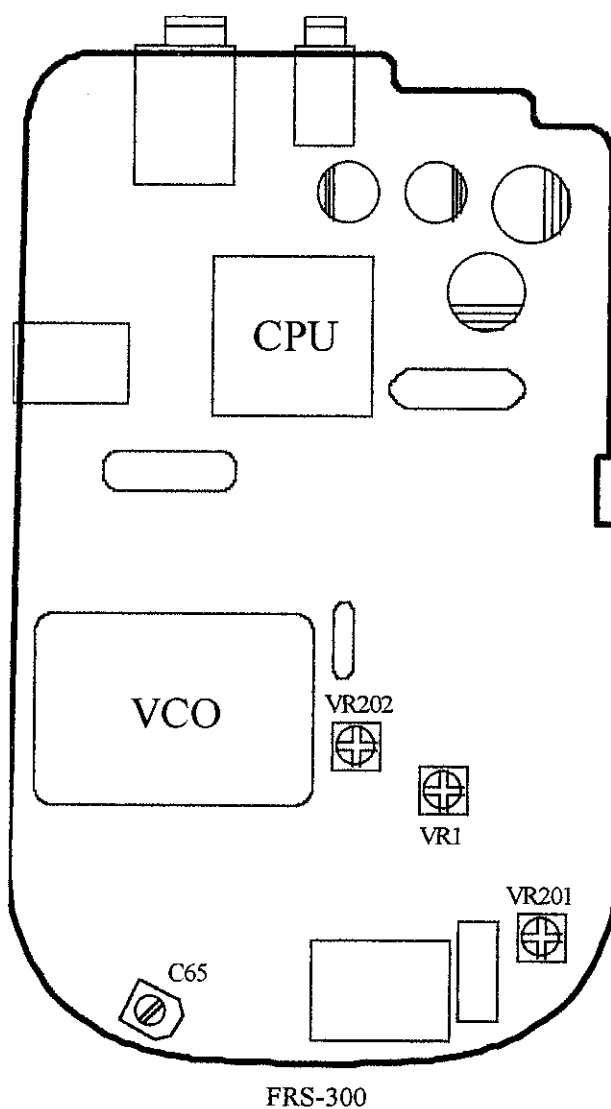
*Frequency Range : 462.5500 ~ 467.7250 MHz*

*Jul - 19 - 2001*

## PCB Alignment Point

### *Location of Adjustment in PCB*

《 GMRS-1000 》



## Alignment Conditions

### Standard Conditions :

|                                   |                           |
|-----------------------------------|---------------------------|
| Power Supply Voltage              | 9.0 V DC                  |
| Audio Output                      | 75 mW                     |
| Audio Load                        | 8 ohm                     |
| Standard modulation               | $\pm 1.5$ KHz at 1 KHz AF |
| Transmission Load                 | 50 ohm                    |
| Reception Adjustment Frequency    | See below                 |
| Transmission Adjustment Frequency | See below                 |

### Transmission / Reception Adjustment Frequencies

| Channel | Frequency    |
|---------|--------------|
| 1 CH    | 462.5625 MHz |
| 14 CH   | 462.7250 MHz |
| 21 CH   | 467.7250 MHz |

## « PLL Alignment »

### Conditions :

|                 |       |             |
|-----------------|-------|-------------|
| 1. Frequency    | ..... | CH-1, CH-21 |
| 2. Squelch      | ..... | Open        |
| 3. Volume       | ..... | Min         |
| 4. Power Supply | ..... | 9.0 V DC    |

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### Procedures

#### *[GMRS VCO]*

- 1) Set a reception Frequency to CH-1.
- 2) Connect a Digital Voltmeter with T.P1, and Confirm that a Voltage Should be a Range of 0.4 V ~ 1.0 V.
- 3) Set a Reception Frequency to CH-21 and Switch to Transmit Mode.
- 4) Confirm That a Voltage Should be Within a Range of 2.0 ~ 3.0 V.

## « *Transmission Alignment* »

### Conditions :

|                 |       |              |
|-----------------|-------|--------------|
| 1. Dummy Load   | ..... | 50 ohm       |
| 2. Frequency    | ..... | CH-1, CH-21. |
| 2. Squelch      | ..... | Open         |
| 3. Volume       | ..... | Min          |
| 4. Power Supply | ..... | 9.0 V DC     |

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### Procedures

#### A) RF output Power Alignment

- 1) Set Supply Voltage to 9.0 V.
- 2) Adjust a Frequency to CH-1 and Switch to Transmit Mode.
- 3) Confirm That the RF Power obtained at CH-1 and CH-21 must be Within a Range of 2.0 W Conducted.

### B) TX Frequency Alignment

- 1) Set a Frequency to CH-14, and Switch to Transmit Mode.
- 2) Adjust VR2 so that a Frequency Counter Reading Should be Within 462.7250 MHz  $\pm 100$  Hz.

### C) Deviation Alignment

- 1) Set a Frequency to CH-14, and Switch to Transmit Mode.
- 2) Input 1 KHz, From AG (Audio Generator), 100 mV (Open Voltage) to the EXT-MIC Terminal, and Adjust VR 201 so that Deviation is  $\pm 2.3$  KHz.
- 3) Lower the AG output, and Adjust the Deviation to 1.5 KHz. In that case, Confirm That AG output Voltage is Within a range of 10 ~ 30 mV (Open Voltage).

## « Receiver Alignment »

### Conditions :

- |                 |       |          |
|-----------------|-------|----------|
| 1. Frequency    | ..... | CH-14.   |
| 2. Squelch      | ..... | Open     |
| 3. Power Supply | ..... | 9.0 V DC |

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### Procedures

#### A) RX Sensitivity Alignment

- 1) Set a Frequency to CH-14.
- 2) Confirm that 12 dB Sinad is -9 dB approx.
- 3) Confirm that a 12 dB Sinad of the Frequency at CH-1 and CH-21 Must be below -7 dB.

#### B) Squelch Sensitivity Alignment

- 1) Set a Frequency to CH-14.
- 2) Set a Signal Generator Output Level -13.0 dB $\mu$ V e.m.f.
- 3) Adjust the VR1 so that Audio Signal Close Point.