

ALIGNMENT PROCEDURES

Model No : FRS 220A

Destination : MUSICAL ELECTRONICS LIMITED

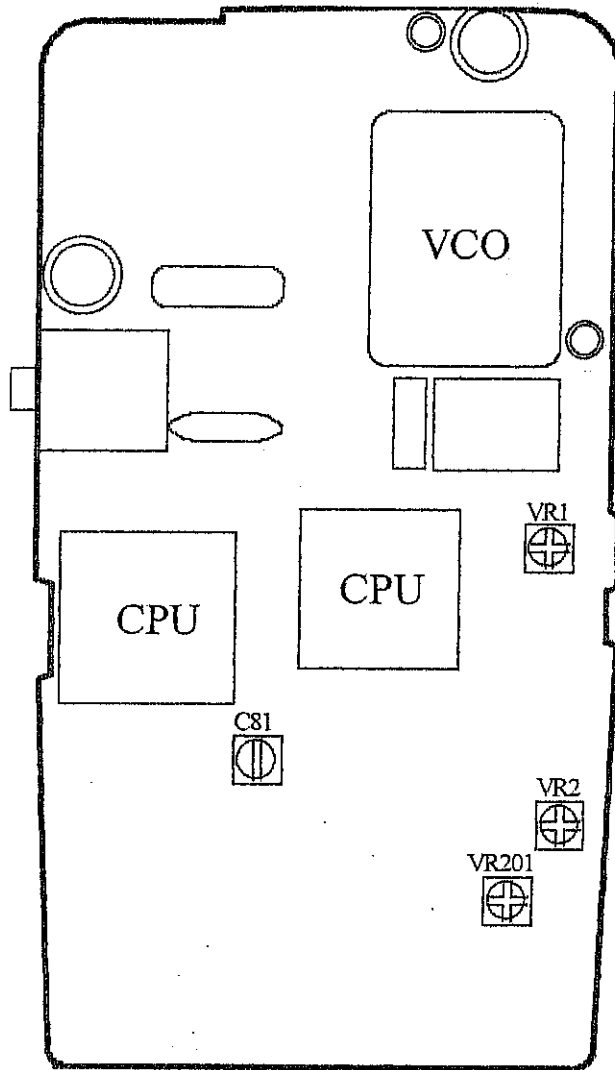
Frequency Range : 462.5625 ~ 4467.7125 MHz

Feb - 18 - 2002

PCB Alignment Point

Location of Adjustment in PCB

FRS-220A



FRS-220

Alignment Conditions

Standard Conditions :

Power Supply Voltage	.....	6.0 V DC
Audio Output	.....	75 mW
Audio Load	.....	8 ohm
Standard modulation	± 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

<i>Channel</i>	<i>Frequency</i>
1 CH	462.5625 MHz
8 CH	467.5625 MHz
14 CH	467.7125 MHz

« PLL Alignment »

Conditions :

1. Frequency	.....	CH-1, CH-14
2. Squelch	.....	Open
3. Volume	.....	Min
4. Power Supply	.....	6.0 V DC

Procedures

- 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 0.6V ~ 1.0V.
- 3) Set a Reception Frequency to CH-14 and Switch to Transmit Mode.
- 4) Confirm That a Voltage Should be Within a Range of 1.8 ~ 2.2V.

Conditions :

1. <i>Dummy Load</i>	.....	50 ohm
2. <i>Frequency</i>	.....	CH-1, CH-14.
2. <i>Squelch</i>	.....	Open
3. <i>Volume</i>	.....	Min
4. <i>Power Supply</i>	.....	6.0 V DC

ProceduresA) RF output - Power Alignment

- 1) Set Supply Voltage to 6.0 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-14 must be Within a Range of 0.21W ERP



B) TX Frequency Alignment

- 1) Set a Frequency to CH-8, and Switch to Transmit Mode.
- 2) Adjust CT1 so that a Frequency Counter Reading Should be Within 467.5625 MHz \pm 100 Hz.

C) Deviation Alignment

- 1) Set a Frequency to CH-8, and Switch to Transmit Mode.
- 2) Input 1 KHz, From AG (Audio Generator), 100 mV (Open Voltage) to the EXT-MIC Terminal, and Adjust VR2 so that Deviation is \pm 2.1 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).

D) CTCSS Deviation Alignment

- 1) Set a Frequency to CH-8, and Set CTCSS Code 38.
- 2) Switch to Transmit Mode.
- 3) Adjust VR201 so that a Deviation is \pm 0.6 KHz.

« Receiver Alignment »

Conditions :

- | | | |
|-----------------|-------|----------|
| 1. Frequency | ..... | CH-8. |
| 2. Squelch | ..... | Open |
| 3. Power Supply | ..... | 6.0 V DC |

Procedures

A) RX Sensitivity Alignment

- 1) Set a Frequency to CH-8.
- 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-14 Must be below -7 dB.

B) Squelch Sensitivity Alignment

- 1) Set a Frequency to CH-8.
- 2) Set a Signal Generator Output Level -13.0 dB μ V e.m.f.
- 3) Adjust the VR1 so that Audio Signal Close Point.