

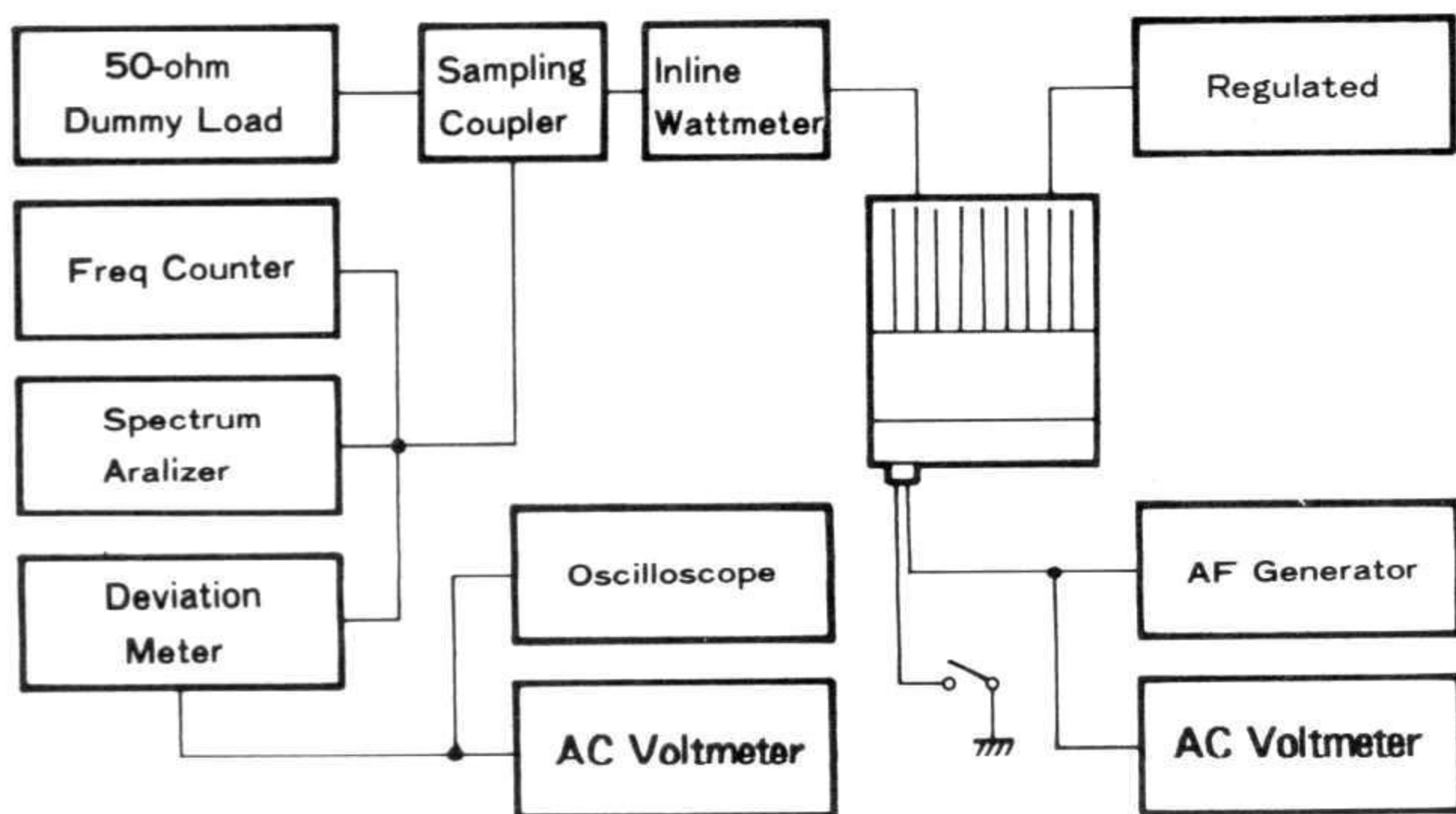
PLL & Transmitter

Set up the test equipment as shown for transmitter alignment. Adjust the supply voltage to 13.6V for all steps.

PLL VCV (Varactor Control Voltage)

- ❑ Connect the DC voltmeter between the positive terminal of C1141 on the Main Unit and chassis ground.
- ❑ Set the transceiver to high band edge channel 3, and adjust coil L303 on the VCO Unit for 6.0 V on the voltmeter.

PLL & Transmitter Alignment Setup



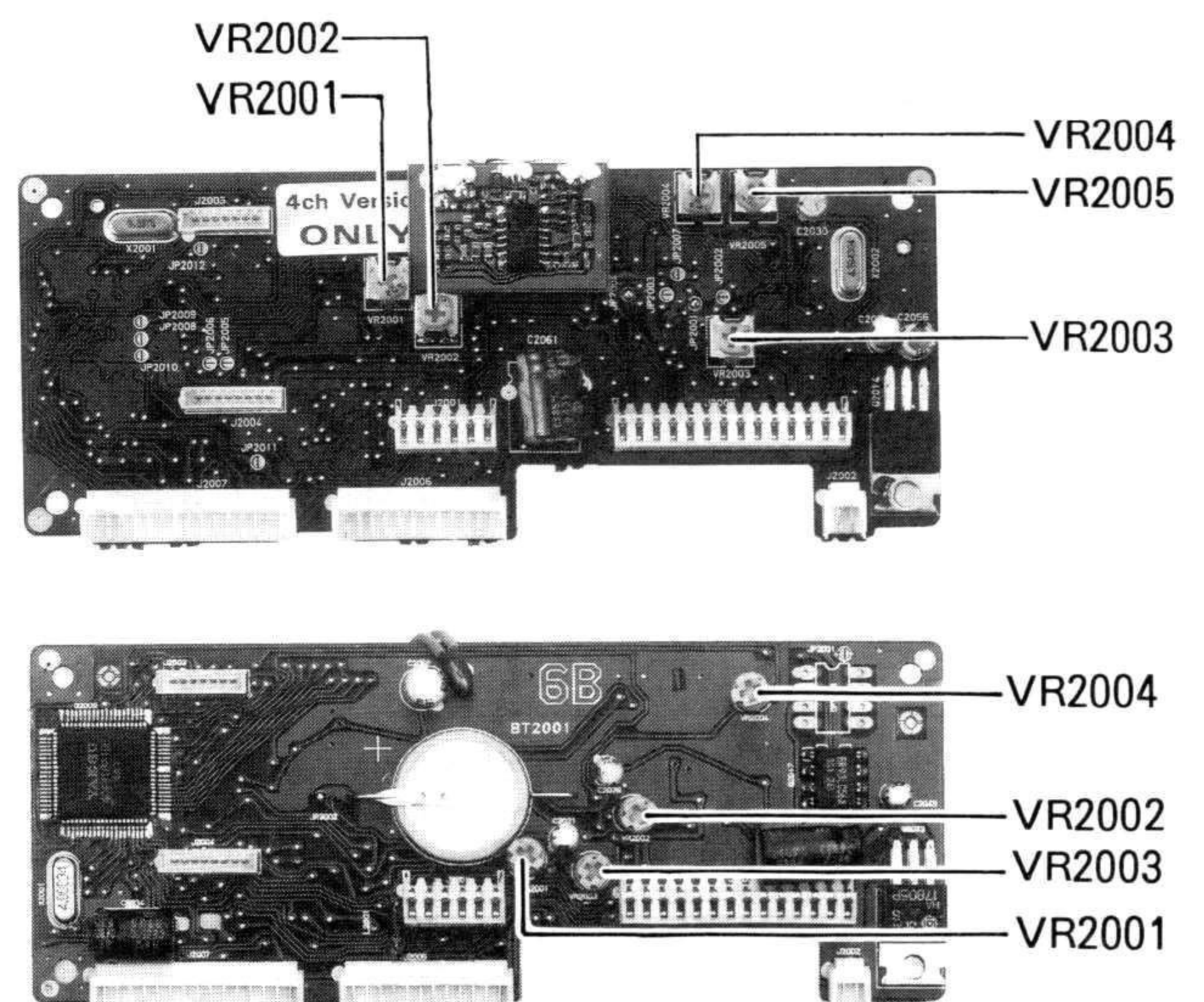
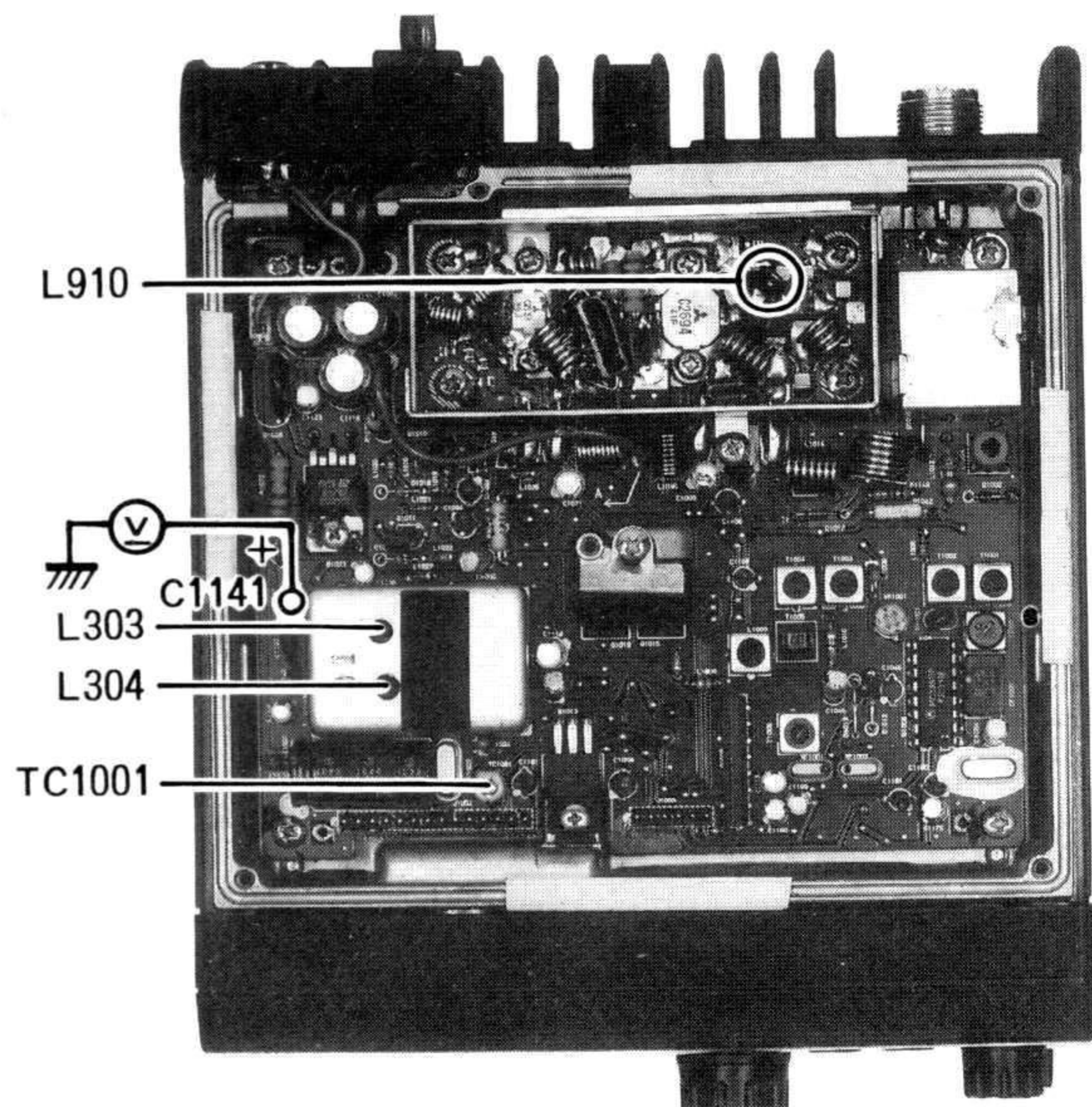
- ❑ Select low band edge channel 1, and confirm at least 0.8V for version A, or 1.5 V for version B on the meter.
- ❑ Select channel 3 again, and this time key the transmitter while adjusting coil L304 on the VCO Unit for 6.0 V on the voltmeter.
- ❑ Again select low band edge channel 1, key the transmitter, and confirm at least 0.8V for version A, or 1.5 V for version B on the meter.

PLL Reference Frequency

- ❑ With the wattmeter, dummy load and frequency counter connected to the **ANT** jack, select band center channel 2, key the transmitter, and adjust TC1001 on the Main Unit, if necessary, so the counter frequency is within 150 Hz of the center channel frequency.

Transmitter Output Power & APC (CNTL UNIT TYPE 1)

- ❑ Preset VR2003 fully clockwise, then, with the transceiver set to band center channel 2, key the transmitter and confirm at least 65W power output. Select channels 1 and 3, and adjust L910, if necessary, for at least 65W output on these channels.
- ❑ Select channel 2, and adjust VR2003 for 60W output.



PLL & Transmitter Alignment Points

Transmitter Output Power & APC (CNTL UNIT TYPE 1A)

- Preset VR2002 fully clockwise, and, with the transceiver set to band center channel 2, key the transmitter and confirm at least 65W power output. Select channels 1 and 3, and adjust L910, if necessary, for at least 65W output on these channels.
- Reprogram channel 1 for low power output, and download this data to the transceiver. Select channel 2, and adjust VR2002 for 65W output. Next select channel 1 and adjust VR2001 for 30 W output.

Transmitter Deviation (CNTL UNIT TYPE 1)

- Select channel 1, and adjust the AF generator attenuator for 25-mV output at 1 kHz to the **MIC** jack. Key the transmitter and adjust VR2004 on the Main Unit for the proper deviation according to version and channel separation listed in the table below.

Version	Ch. Separation	Deviation
A	12.5 kHz	N/A
	25 kHz	4.2 kHz
B	12.5 kHz	2.1 kHz
	25.0 kHz	4.5 kHz

- Reprogram channel 3 to enable a 100-Hz CTCSS tone (encode), and download this to the transceiver. Reduce the AF generator injection to zero, then key the transmitter, and adjust VR2001 for the proper deviation according version and channel separation referring to the following table.

Version	Ch. Separation	Deviation*
A	12.5 kHz	0.2 kHz
	25.0 kHz	0.8 kHz
B	12.5 kHz	0.2 kHz
	25.0 kHz	0.8 kHz

*within ± 400 Hz for 25, ± 250 Hz for 12.5.

Transmitter Deviation (CNTL UNIT TYPE 1A)

- Select channel 1 and adjust the AF generator attenuator for 50-mV output at 1 kHz to the **MIC** jack.

- Key the transmitter and adjust VR2004 on the Main Unit for proper deviation according to version and channel separation referring to the table below.

Version	Ch. Separation	Deviation*
A	12.5 kHz	N/A
	25.0 kHz	1.0 kHz
B	12.5 kHz	0.55 kHz
	25.0 kHz	1.1 kHz

*within ± 100 Hz for both versions and separations.

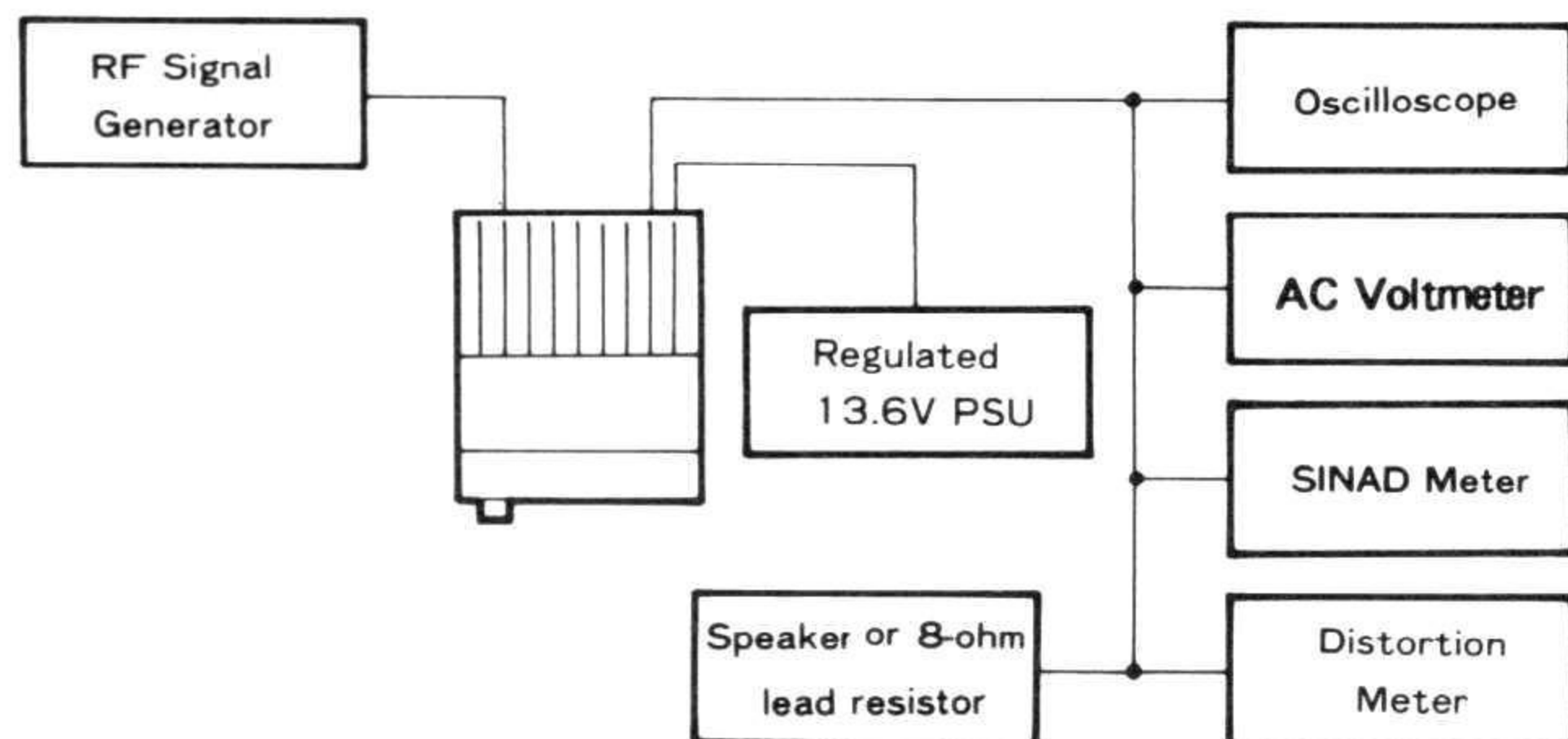
- Reprogram channel 3 to enable a 67-Hz CTCSS tone (encode), and download this to the transceiver.
- Reduce the AF generator injection to zero. Key the transmitter, and adjust VR2005 on the Main Unit for proper deviation according to version and channel separation, referring to the table below.

Version	Ch. Separation	Deviation
A	12.5 kHz	N/A
	25 kHz	4.2 kHz
B	12.5 kHz	2.1 kHz
	25.0 kHz	4.5 kHz

- Reprogram channel 2 to enable a 627 DCS code (encode), and download this to the transceiver. Reduce the AF generator level to zero. Key the transmitter, and adjust VR2003 on the Main Unit for or ± 0.7 kHz deviation (within 100 Hz).

Receiver

Set up the test equipment as shown below for receiver alignment.



Receiver Alignment Setup

Discriminator Coil

- ❑ Set the transceiver set to channel 1, With the RF signal generator at the ANT jack tuned to the same frequency, set the generator for 40 dB μ , \pm 3 kHz deviation of 1-kHz tone modulation (\pm 1.5 kHz for 12.5 kHz channel separation), and set the output level for minimum distortion.
- ❑ Adjust T1007 on the Main Unit for peak on the AC voltmeter.

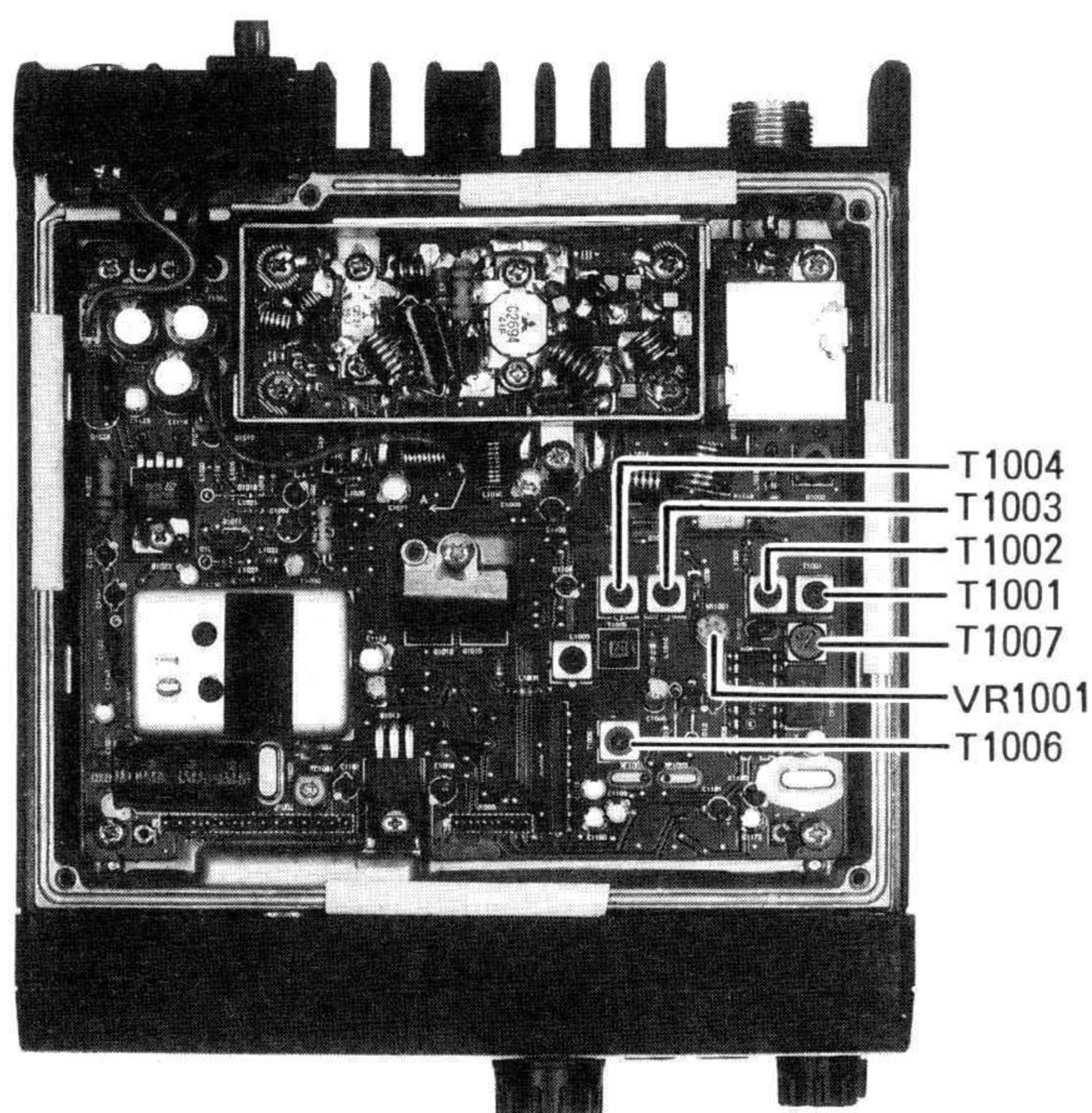
SINAD

- ❑ Adjust T1001 through T1004 and T1006 on the Main Unit for optimum SINAD.
- ❑ After adjusting the transformers, generator level should be -6 dB μ or less for 12 dB SINAD. Confirm this SINAD level on the other two alignment channels.

Squelch

- ❑ With channel 2 selected, tune the RF signal generator to the same frequency, and set the generator level to -8 dB μ .
- ❑ Turn VR1001 clockwise until the squelch just closes, and then counterclockwise very slightly so that it just opens.

Reload the original channel data from disk, and then download it back into the transceiver.



Receiver Alignment Points