

51BT ADJUSTMENT

1) VCO adjustment

- a) Set a channel frequency at 20.
- b) Connect DC volt-meter to TP1
- c) Adjust VC101 to show $1V+0V$ on DC volt-meter
- d) Change a channel to 08 and then confirm a DC volt-meter shows approx. 2V

2) Output power adjustment

First of all, set a channel at 55 and supply a power of $9V\pm 0.1V$.

- a) Connect a spectrum analyzer to JK2 (remove a shorted pin)
- b) Adjust a trimmer VC2 to minimize a spurious ($1/2F$) with maintaining a carrier power.
- c) Connect a power meter at JK2 and adjust VR3 to get 20mW

3) Transmitter frequency adjustment

- a) Set a channel frequency at 55
- b) Connect a frequency counter at JK2
- c) Adjust VC1 to show its frequency at $8000.000MHz\pm 1.5KHz$

4) AF adjustment

- a) Connect a linear detector to JK2
- b) Set a channel frequency at 55
- c) Connect an output of Audio Oscillator to CN1.
- d) Adjust VR2 that the modulation will be $5.0KHz\pm 0.1KHz$ at $-30dBm$ (TP4 output). Above 5.0KHz does not include a tone frequency modulation.
- e) Set the audio oscillator output at $-60dBm$ (frequency at 1.0KHz)
- f) Adjust VR1 for a frequency deviation to become a $\pm 5KHz$.

5) Tone modulation adjustment

- a) Turn off the Audio
- b) Adjust VR4 for a frequency deviation to become $2.2KHz\pm 0.2KHz$.

. Voltage and Current at RF section

) Circuit explanation

a) Frequency stabilization

This is a synthesizer oscillation system and its frequency stability depends on its character of crystal vibrator. The crystal used in this model is guaranteed of its frequency allowance within 10ppm (temperature -10°C to $+60^{\circ}\text{C}$).

b) Spurious suppression

In order to suppress the spurious, we put a filter (LC type) after the power amplification. This is a pi-type double low pass filter .

c) Modulation limit

There is a limiter circuit (organized by diodes) after AF low pass filter to control a modulation.

1. Voltage and Current at RF section