

Theory of Operation (How It Works)
Upper Band Inhibit (as demanded by FCC Rules)

1. Counting the frequency of the RF drive signal from the transceiver, this INHIBIT circuit will prohibit amplifying the higher HF bands to comply with FCC rule for the amateur external power amplifier. The circuit consists of following three blocks ;
 - a. Drive signal take in and 1/16 divider PC1675, Prescaler
 - b. Band Decoder, MPU PC1664
 - c. Main Control, MPU PC1665
2. RF drive signal from the transceiver is voltage divided in the RF power detector board. After wave form shaping to the adequate level, the signal is lead to the input of the prescaler (frequency divider).

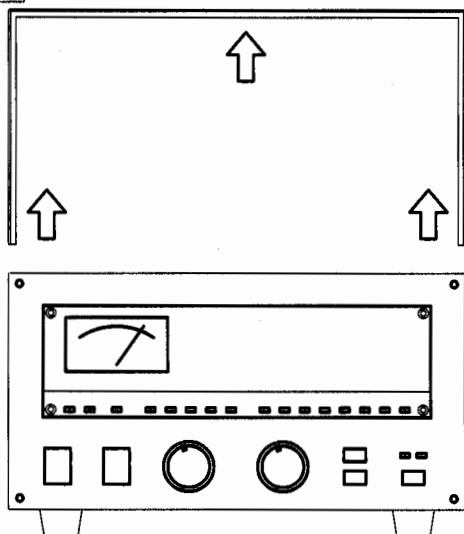
(Ref. : “ RF Signal “ at left side of schematic diagram.)
3. “ RF Signal “ being divided by 16, is delivered to the input of the counter of the band decoder MPU.

(Ref. : “ 1/16 FREQ “ at upper center in the schematic diagram.)
4. MPU (PIC18F452-I/P) of Band Decoder has a counter function at I/O port RA4. From the number of the pulses put in per 100mS , the frequency of the RF drive signal will be calculated. If the calculated result is within the prohibited frequency range of amplifier, Band Decoder MPU will tell Main Control MPU about the “ Inhibit “. Two MPU's are connected through two wire serial communication mode (Inter-Integrated Circuit : I2C) and RB0/INT channel can exchange numerical data each other. (Ref. : Center of schematic, “ I2C LINK “)
5. MPU on Main Control, PC1665, manages the input/output power of the amplifier, monitors the DC power supply status, and manages the transmit/receive status as well. Upon receiving “ Transmit (Amplification) Inhibit Signal “ through I2C communication mode, the amplification of the power amplifier (PC1662) is stopped.

How to disable "UPPER BAND INHIBIT (FCC Rule)".

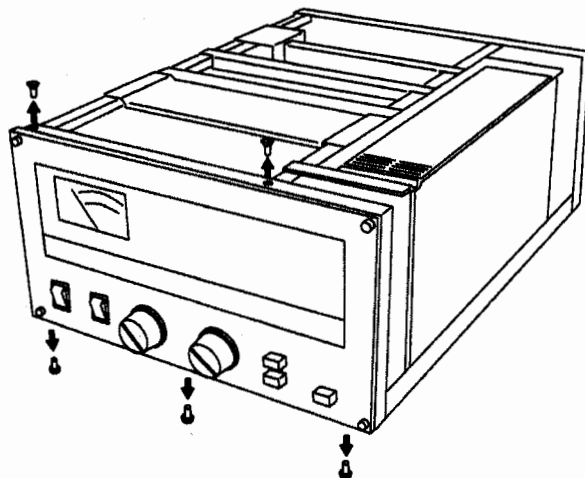
STEP1

Unscrew the 14 bolts on the cover.
Lift the top cover.



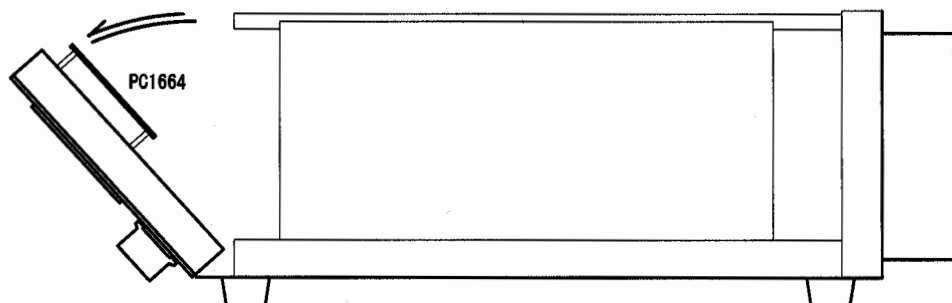
STEP2

Unscrew the five bolts
holding the front panel assembly
to the chassis.



STEP3

Tilt the front panel assembly.



STEP4

To disable "UPPER BAND INHIBIT", set the jumper as below.

