

9. Transmitter tune-up (alignment) procedure :

There is no owners/operators applicable transmitter tune-up (alignment) procedure for Aselsan R4715 radio.

R4715 radio transmitter conducted carrier output power is programmable between 0.5 watts and 5 watts at 3 preset levels by using AP25DMY.exe (APCO25 Data Base Manager) and AP25TP47 Programmer.

Preset power levels are selectable by owners/operators by means of the power level selector button. Selected power levels are displayed on the upper line of LCD screen as “L” indicating low power level, “M” indicating medium power level and “H” indicating high power level. Default values for the power levels are as follows:

L (low power level) = 1 watt

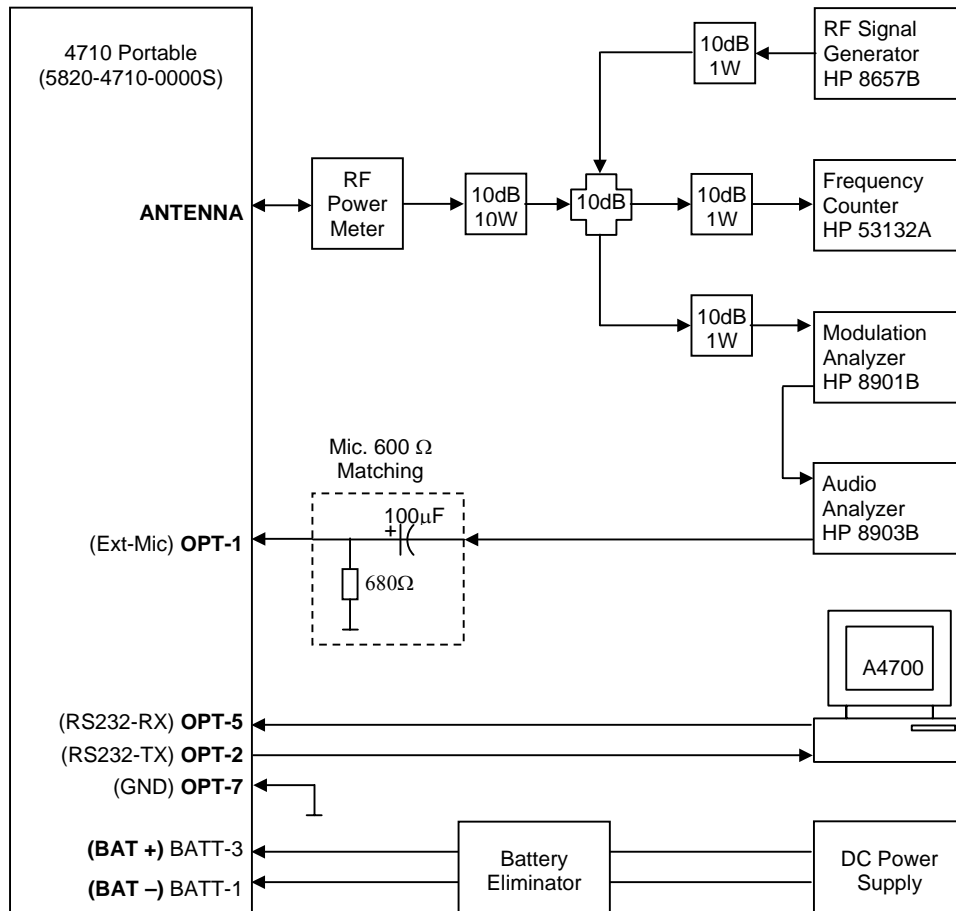
M (medium power level) = 2 watts

H (high power level) = 5 watts

In Aselsan, power control circuits of R4715 radio is calibrated according to 4700 Adjustment and Test Procedures given below.

NOTE: A4700.exe Adjustment and Test software is intended to be used by Aselsan/Authorized parties only.

5 METHODS OF ADJUSTMENTS



- Connect the equipment as illustrated.
- Set the Power Supply output voltage to 7.5 volts and current limit to 2 amperes.
- Set the RF Signal Generator output to its minimum level.
- Set the Audio Analyzer output impedance to $600\ \Omega$ and amplitude to 0 Vrms.
- Set the Modulation Analyzer to measure \pm peak deviation. Turn the de-emphasis function off. Set the audio bandwidth for $\leq 5\ \text{Hz}$ to $\geq 15\ \text{kHz}$.
- Run MRA.exe, click on the “Read Radio” icon and enter the “Radio Adj.” menu.
- Adjustments specified in steps 5.1–5.10 should be applied consecutively to all models unless otherwise specified.
- If “Analog Frequency Adjustment” is changed, then “C4FM Receive Level Adjustment” has to be repeated.
- If “Modulation Flatness Adjustment” or “Modulation Limiting Adjustment” is changed, then the successive modulation and deviation adjustments have to be repeated.

5.1 RF Output Power Adjustment

- Enter “RF Output Power Adjustment” window and click “Transmit”.
- Adjust RF Output Power Parameter to obtain the measured power levels to be equal to the selected power levels for each selected frequency.

5.2 Analog Frequency Adjustment

- Enter “Analog Frequency Adjustment 25 kHz” window and click “Transmit”.
- Adjust parameter until the frequency error to be less than 10 Hz at the test frequency.

5.3 Digital Frequency Adjustment

Applicable only to digital models.

- Enter “Digital Frequency Adjustment” window and click “Transmit”.
- Adjust parameter until frequency error to be less than 10 Hz at the test frequency.

The screenshot displays the A4700 software interface with the 'RF Power Output Adjustment' window open. The main window has tabs for 'A4700', 'Device', 'Adjustments', 'Test', and 'Options'. The 'Adjustments' tab is active, showing fields for Definition Date (18.07.2008), Software Ver. (SMM 0.00.0000), Device Type (Portable), Software Type (AP25 Conv.), Frequency Band (380 - 470 MHz), Factory S.N., Maximum Power (5 W), and Customer S.N. Below these are checkboxes for Device Model: Function Keys, Alphanumeric keys, Channel Switch - Volume Pot., and LCD. A Hardware No. field contains the value 2. A table for Revision / Order No. shows Device, RF.C.B., and F.P.B. all set to A and 0. DSP B. and ENC.B. are also set to 0. A large Modifications text area is present. The 'RF Power Output Adjustment' window is overlaid on the right, showing a list of frequencies (380,100000 MHz to 469,900000 MHz) with 380,100000 MHz selected. Power levels 2 W and 4 W are shown, with 2 W selected. The 'Transmit' button is active, and the 'TEST' button is also visible. Instructions at the bottom of the window state: 'Prepare the test setup shown on 4700 Portable Adjustment Manual', 'According to the adjustment procedure on 4700 Portable Adjustment Manual change the value below.', and 'Press OK when done. Press BACK or SKIP to skip this adjustment.' A slider bar shows a value of 72 between 0 and 255. Navigation buttons '<< BACK', 'OK', and 'SKIP >>' are at the bottom.