FFC ID: 2BAX4-INTC200M

Tune Up procedure
This document is for the attention of:

Federal Communications Commission
Authorisation and Evaluation Division
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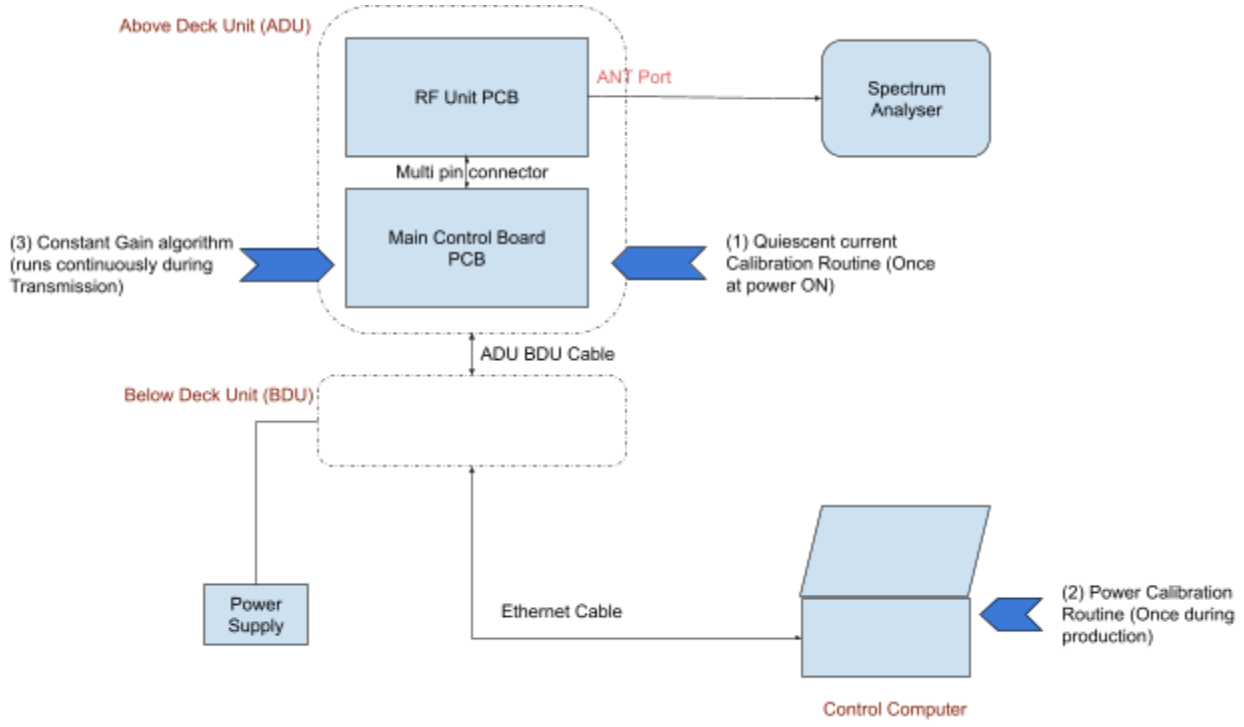
USA

The following tune-up procedure is for the factory only. All other configuration is automatic and does not require any customer tuning.

Tuning and Calibration Configuration



Tuning Procedure:

(1) Quiescent Current calibration

Objective:

This procedure sets the HPA device's Idle current draw to the manufacturer's recommended settings (360 mA) for optimum efficiency and power.

Process:

The microcontroller in the main control board measures the quiescent current drawn by the HPA device. The microcontroller then adjusts the Bias voltages to the HPA device to achieve the pre-defined value of quiescent current. The process also compensates the current value to match the temperature at which the calibration is done.

Procedure Frequency:

Performed once every time the system is powered ON.

(2) Power Calibration

Objective:

This process calibrates the RF power detectors at the input and output of the transmitter so that 41 dBm of output power is obtained at the antenna port and a constant gain is achieved for the transmit stage

Process:

A factory calibration routine is performed using the computer connected to the EUT using the Tuning and Calibration configuration above.

1. Using the UI, a carrier waveform with a 2xC8 modulation scheme is transmitted.
2. The value read on the Spectrum Analyser is recorded. Using the UI page, the value of the digital attenuator is changed up or down so that the power reading is 41 dBm.
3. On the UI, press the “calibrate” icon.
4. The software will now calibrate the power detectors in the Radio Frequency Unit board and store the values in the Main Control Board memory.

Procedure Frequency:

Performed once during Production.

(3) Constant Gain process

Objective:

This process maintains the gain of the Transmitter to a constant value across frequency and environmental condition variations.

Process:

With the aid of pre-characterized and calibrated (as per the Factory Calibration procedure above) RF Power Detectors located at the transmitter's input and output, the microcontroller's firmware continuously detects and measures the output and input power levels. Based on those values, the microcontroller software determines the gain value and then uses this to control a digital attenuator in the transmit path to ensure constant gain.

Procedure Frequency:

Runs continuously during transmission.