

**V284-A Tune Up Procedure over the power****General:**

The modem output level is controlled by the WMTS in a periodic ranging procedure. The WMTS set the modem TX level such that it will receive a fix predetermined level. The procedure is based on the DOCSIS procedure.

**Step 1: Initial ranging:**

After acquisition of downstream signal, the modem starts to send upstream messages. The modem starts to transmit at the minimum TX level. If this signal was acquired by the WMTS, The WMTS will send an acknowledgment, including a message with a correction of the TX level (to be received at the nominal RX level). The modem is waiting to the acknowledgment. If the modem is not getting an acknowledgment, it increases the TX level by a 6 dB step. This procedure is going on till the modem is getting acknowledgment with the correct TX level, or till it arrives the maximum power. If the modem arrived the maximum power, without getting an acknowledgment, it starts the procedure from the beginning.

**Step 2: Periodic ranging**

After the initial ranging, the modem is getting a periodic ranging message from the WMTS. This message includes fine correction of TX level, if needed. The periodic ranging period is typically 3 seconds (can be define through the NMS).

**Maximum output power:**

The modem cannot transmit above a pre-defined output level.