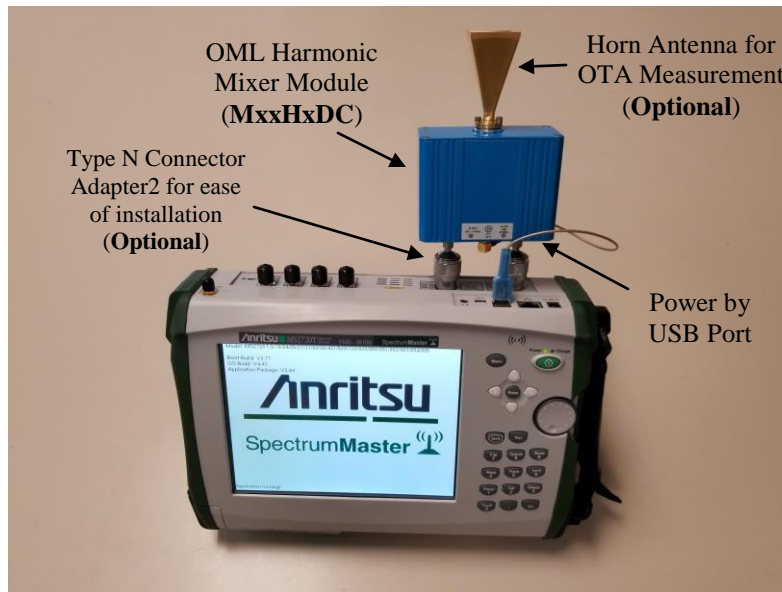# Harmonic Mixer Setup with Anritsu SpectrumMaster (MS2720T)

OML has developed a frequency extender module solution that can be used with Anritsu's SpectrumMaster. With this harmonic mixer making millimeter wave measurements in the field are now at your fingertips.

This paper will take you through the setup steps on the SpectrumMaster to allow for millimeter wave measurements.

1. Connect OML harmonic mixer module (MxxHxDC) to Anritsu SpectrumMaster as shown.

2. Energize the SpectrumMaster using the ⬛ **Power** hard key.

3. Press ⬛ **Menu** hard key and then press ⬛ **Spectrum Analyzer** icon to activate SA application, if needed.

4. Press **Shift** hard key and then **Meas** hard key to access tracking generator.

5. Press **Generator** soft key to set the tracking generator parameters for the harmonic mixer module.

6. Press **Output Power** soft key and enter value **-3** using the **numeric keypad** and press **dBm** soft key to accept the user defined tracking generator output power.

7. Press and toggle the **Generator Mode** soft key to ensure **CW** is active.

8. Press and toggle the **Generator Output** soft key to ensure the generator output is **ON**.

9. Press **CW Frequency** soft key and use the **numeric keypad** to enter the desired output frequency and press **GHz** soft key to accept the value.

   Example 1:   Down convert a 77 GHz CW RF signal to an IF of .5 GHz
   Use equation LO = (RF-IF)/6*
   CW Freq =   (77-.5)/6 = 12.75 GHz   (CW Frequency = 12.7500 GHz)

   Example 2:   Down convert a RF signal channel of 77 GHz to 81 GHz to an IF of
   **   .5 to 5.5 GHz**
   Use equation LO = (RF-IF)/6*
   CW Freq =   (77-.5)/6 = 12.75 GHz (CW Frequency = 12.7500 GHz)

   * divisor number depends on the harmonic mixer module model

10. Press **Freq** soft key and use the **Start Freq** , **Stop Freq** soft key and the **numeric keypad** to set the viewing IF frequency bandwidth

   For Example :   to view IF frequency span of 0.1 to 4.1 GHz
   **   Set Start = 100 MHz**
   **   Set Stop = 4.1 GHz**

11. Press **Shift** hard key and then **Trace** hard key to access trace display **Trace A B C** function. Toggle to trace **A** screen display (**Optional**)

12. Press **Trace A Operations >** soft key and **MaxHold > A** soft key to capture the measured signals (**Optional**)