



PHOTOGRAPHS OF TEST SET UP

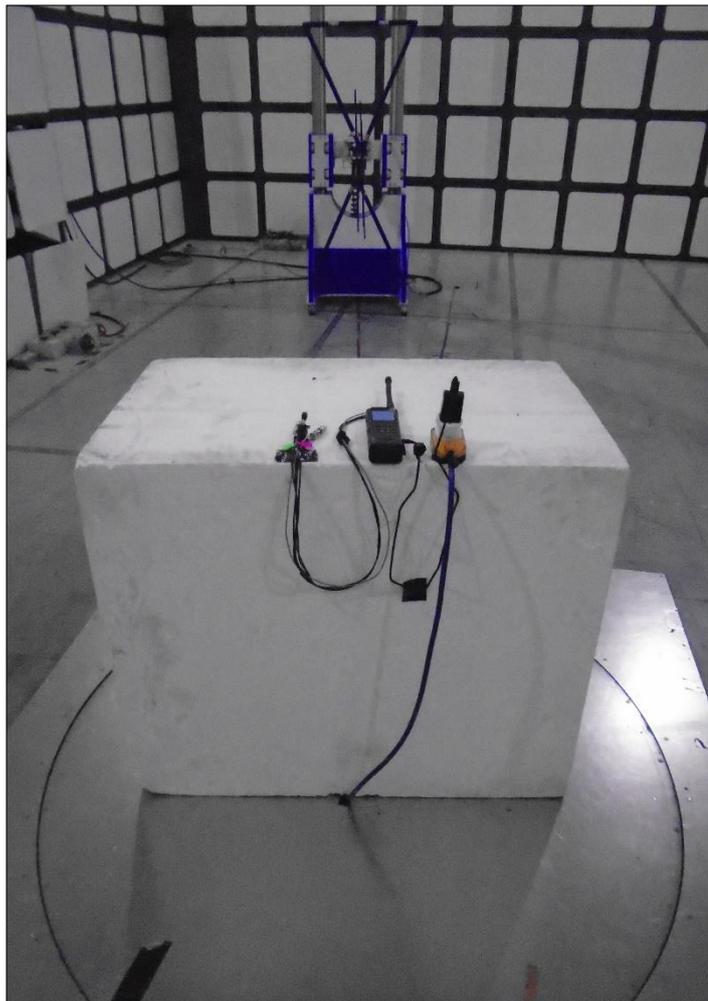


Figure 1 - 30 MHz to 1 GHz - X Orientation

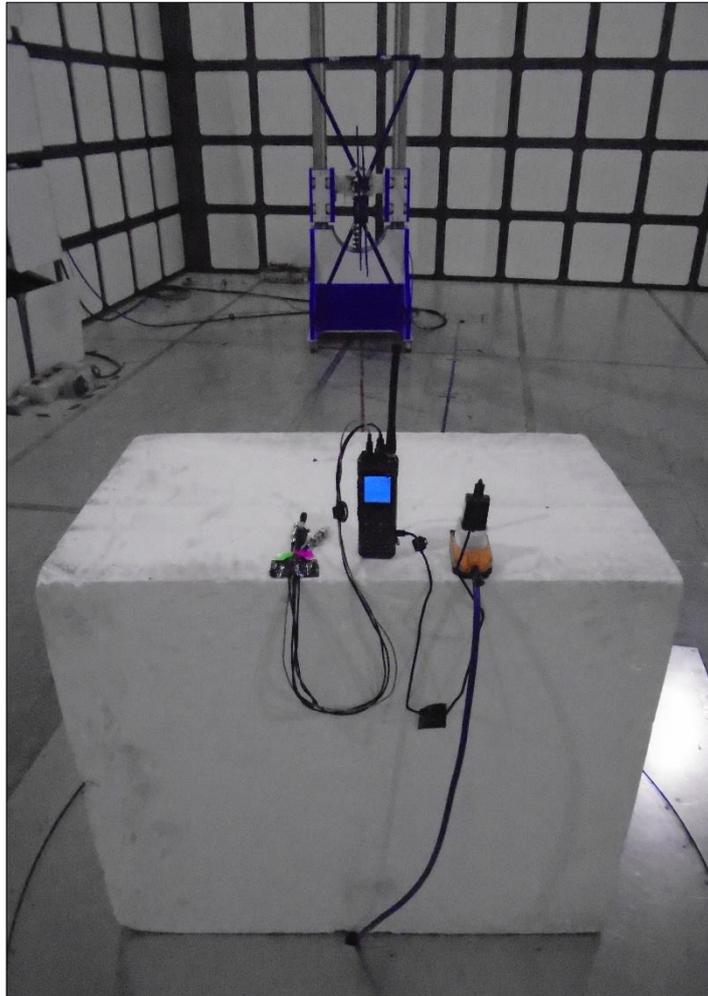


Figure 2 - 30 MHz to 1 GHz - Y Orientation

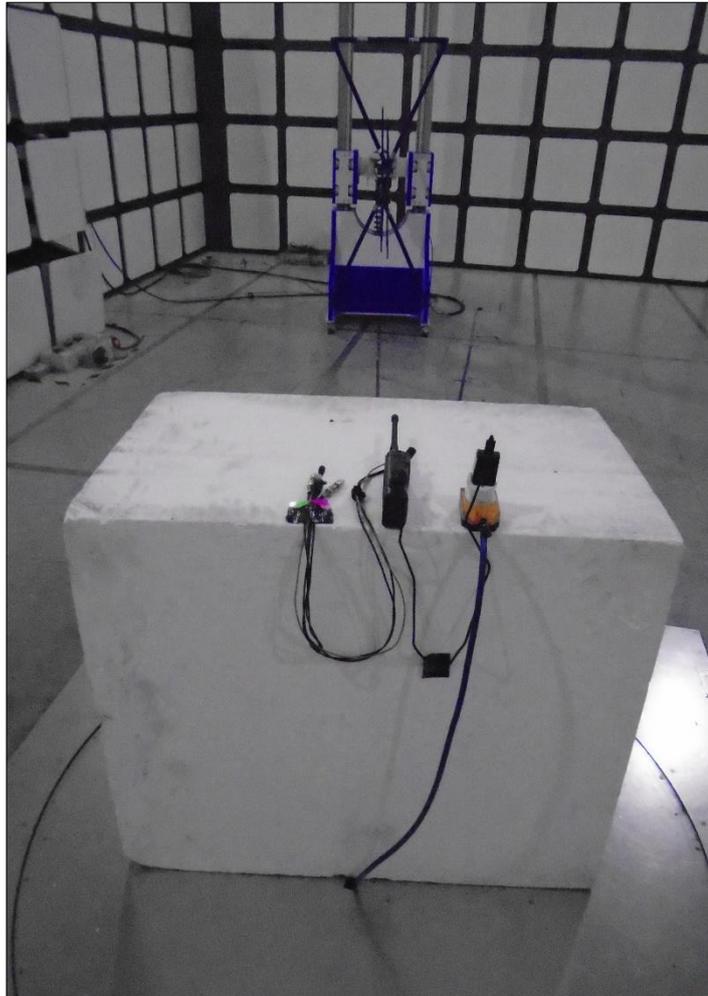


Figure 3 - 30 MHz to 1 GHz - Z Orientation

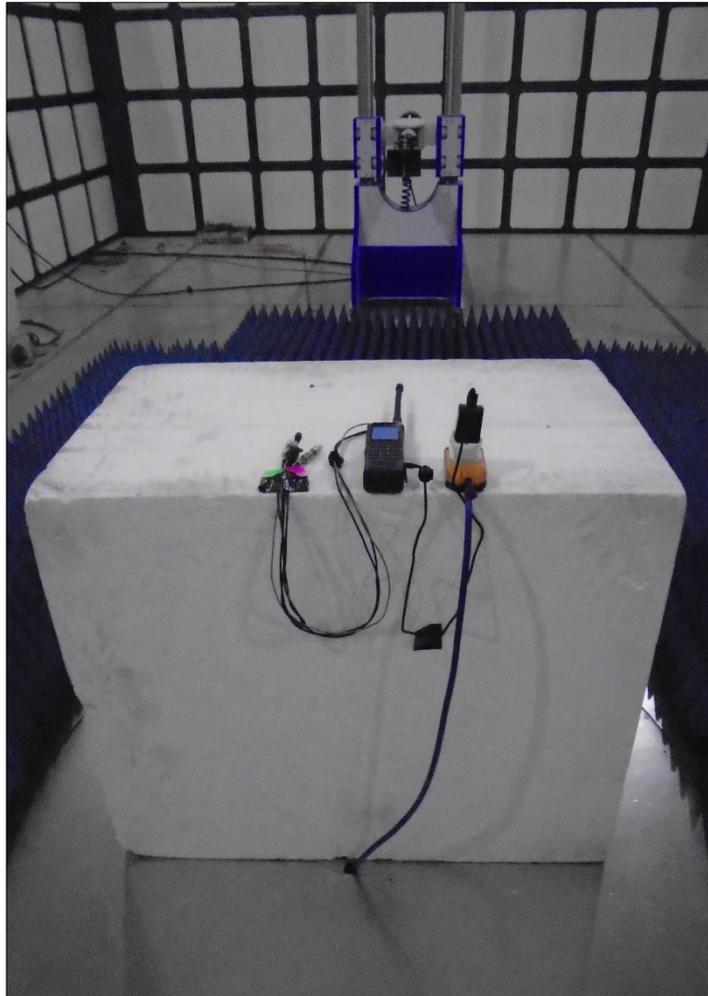


Figure 4 - 1 GHz to 2 GHz - X Orientation

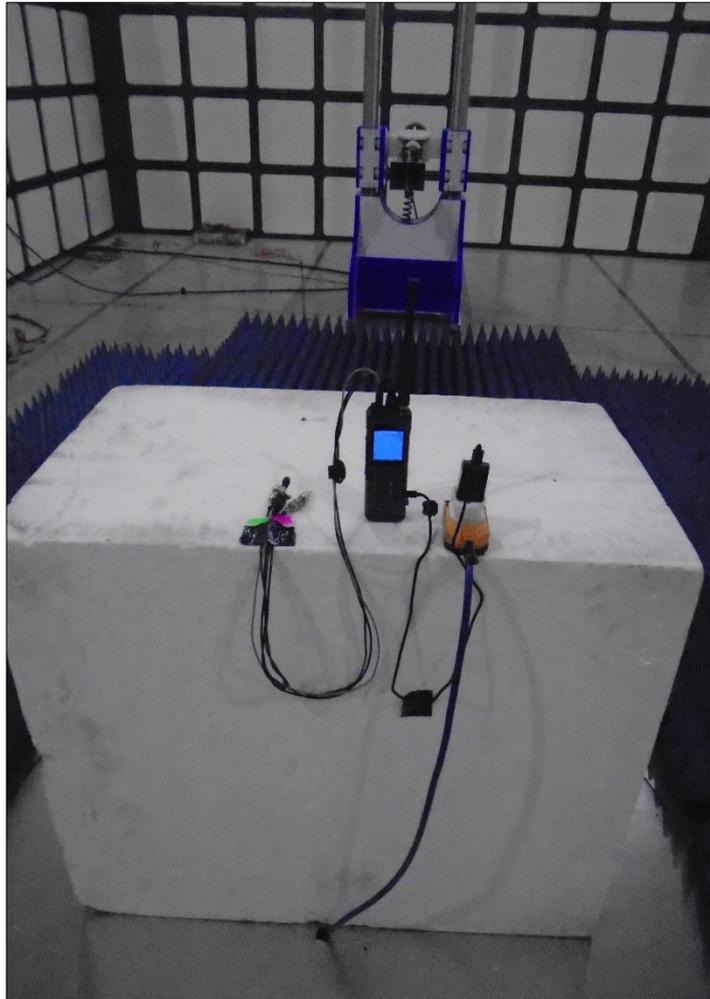


Figure 5 - 1 GHz to 2 GHz - Y Orientation

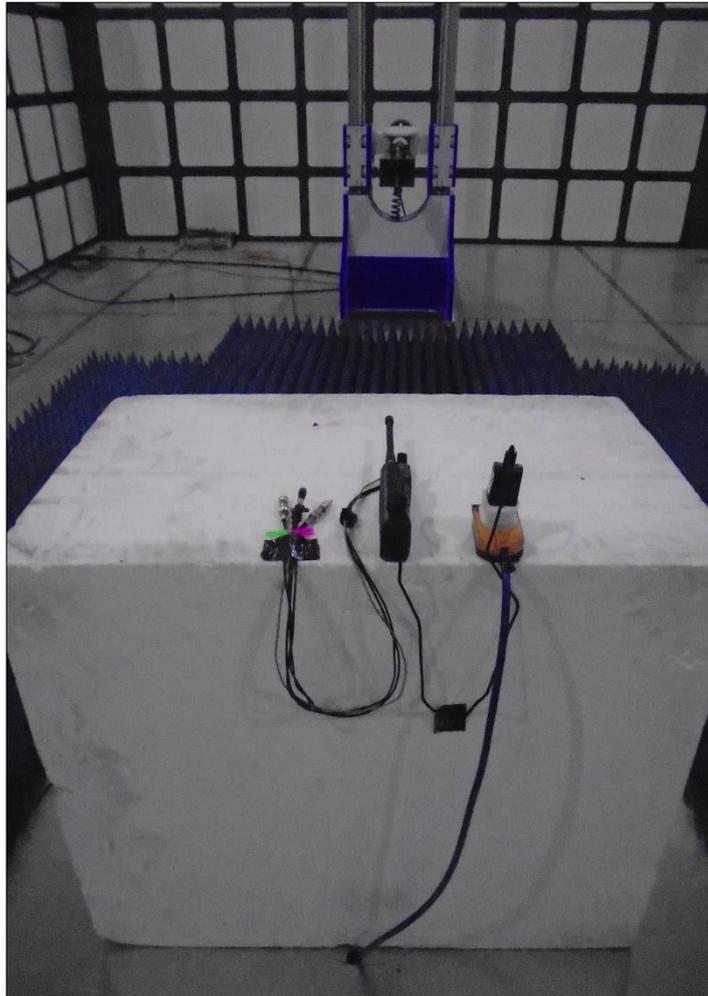


Figure 6 - 1 GHz to 2 GHz - Z Orientation

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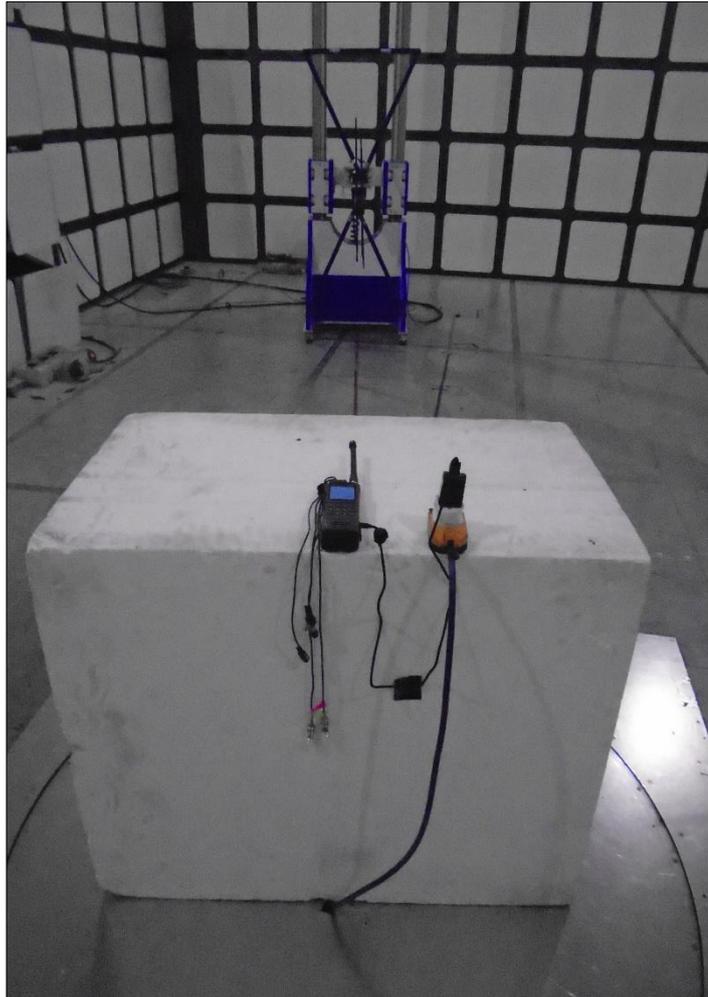


Figure 1 - 30 MHz to 1 GHz - X Orientation

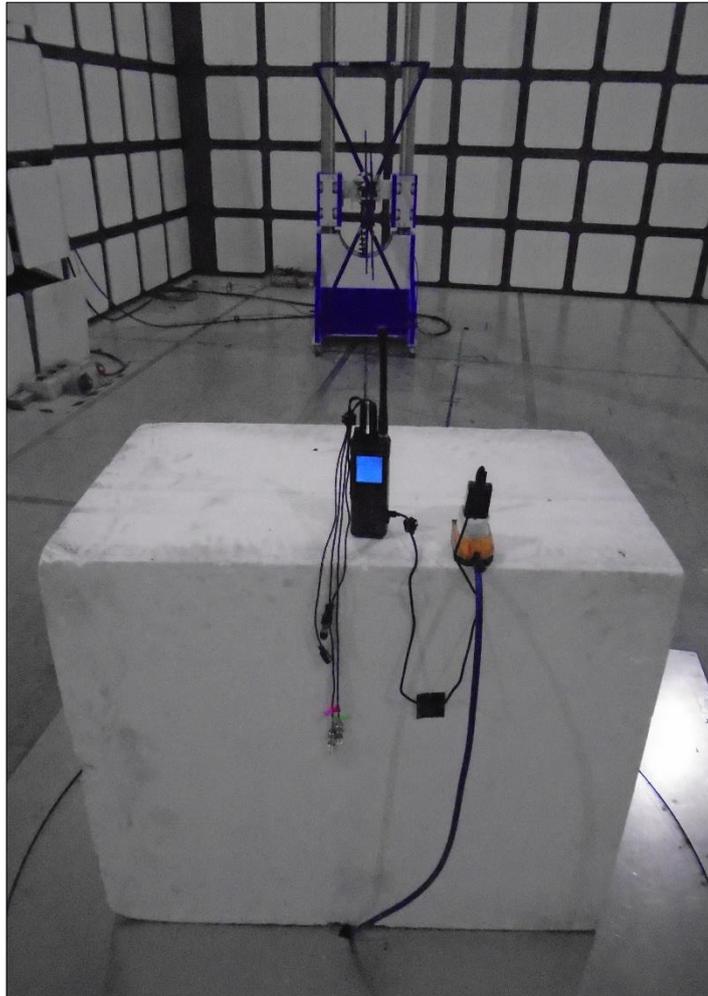


Figure 2 - 30 MHz to 1 GHz - Y Orientation

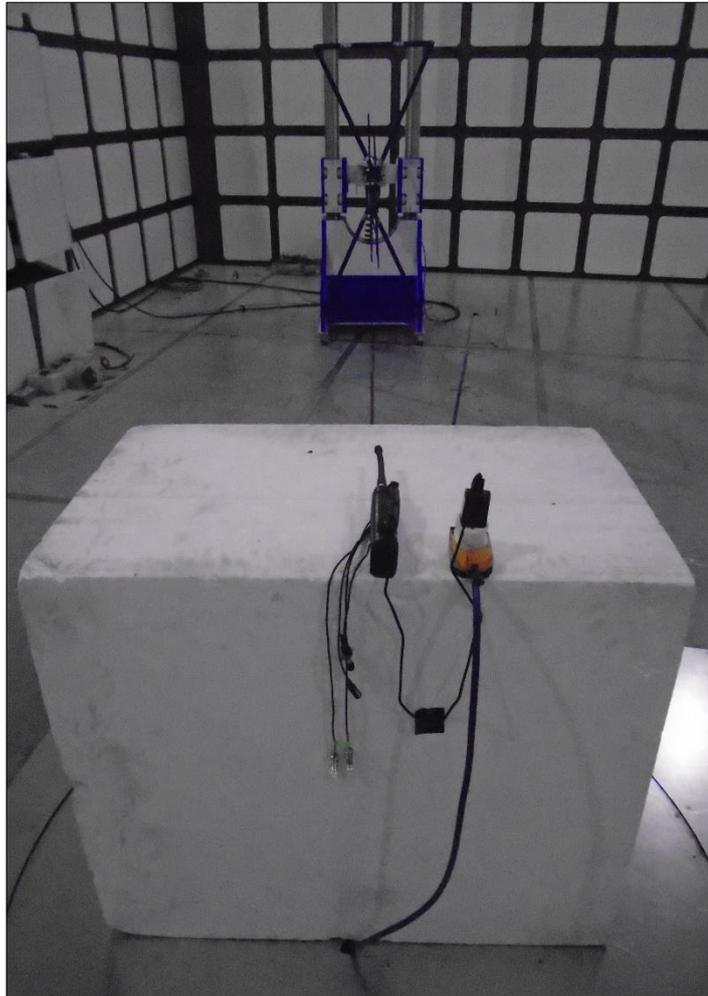


Figure 3 - 30 MHz to 1 GHz - Z Orientation



Figure 4 - 1 GHz to 2 GHz - X Orientation

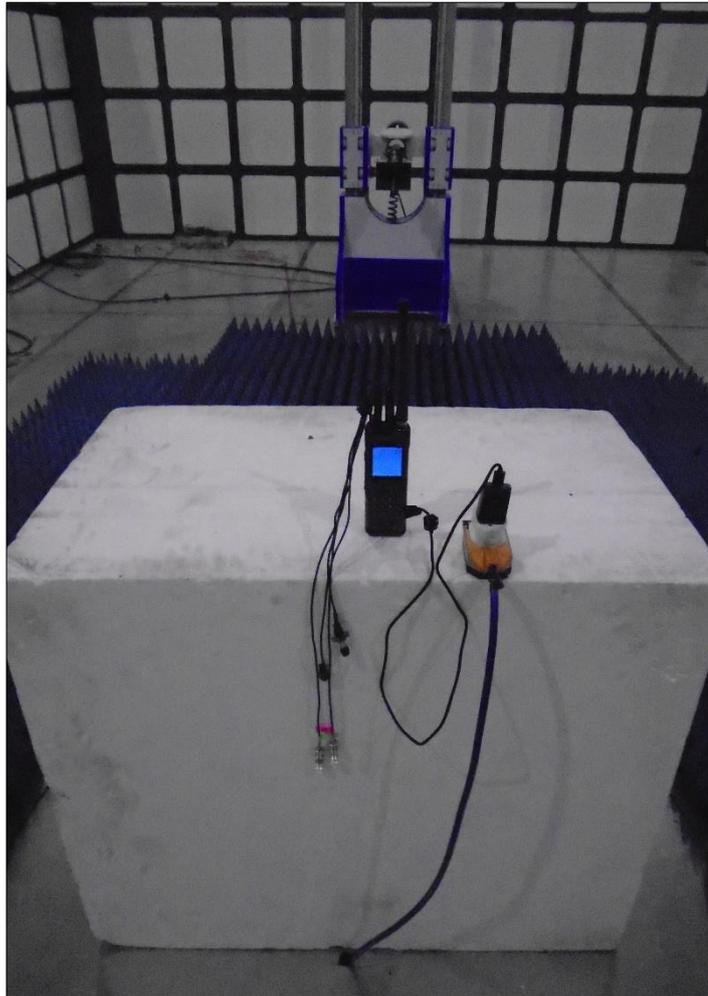


Figure 5 - 1 GHz to 2 GHz - Y Orientation

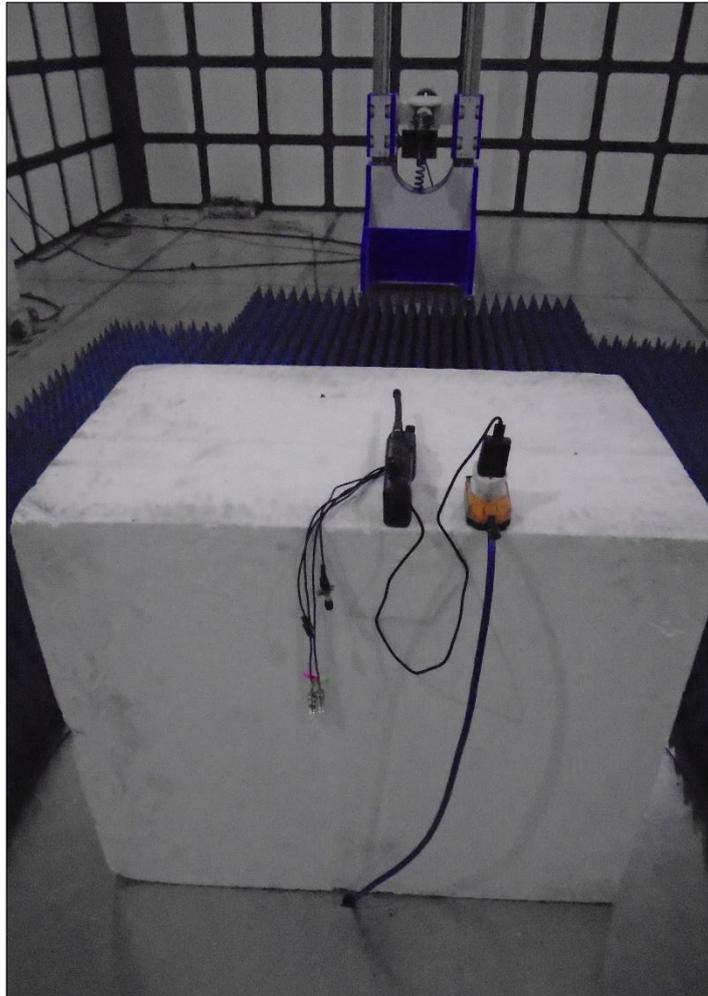


Figure 6 - 1 GHz to 2 GHz - Z Orientation

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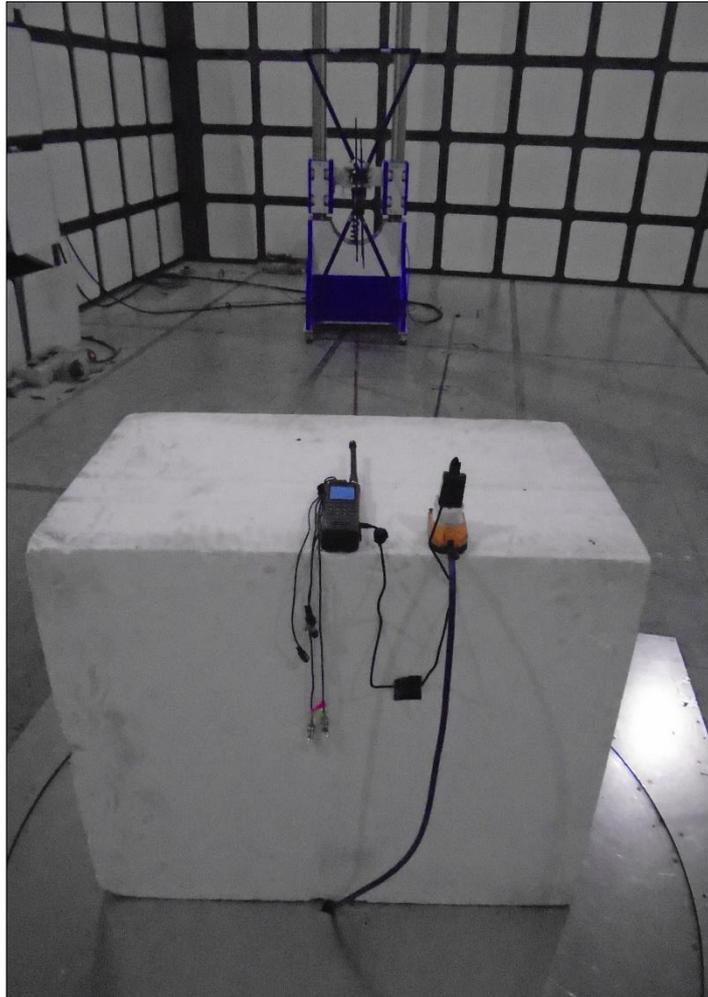


Figure 1 - 30 MHz to 1 GHz - X Orientation

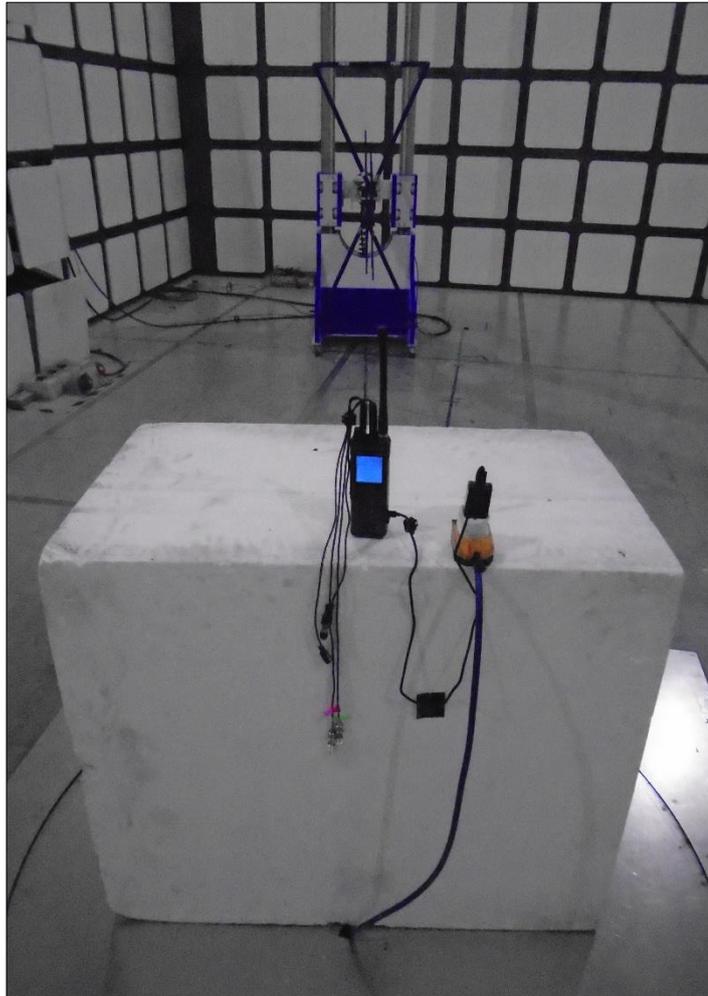


Figure 2 - 30 MHz to 1 GHz - Y Orientation

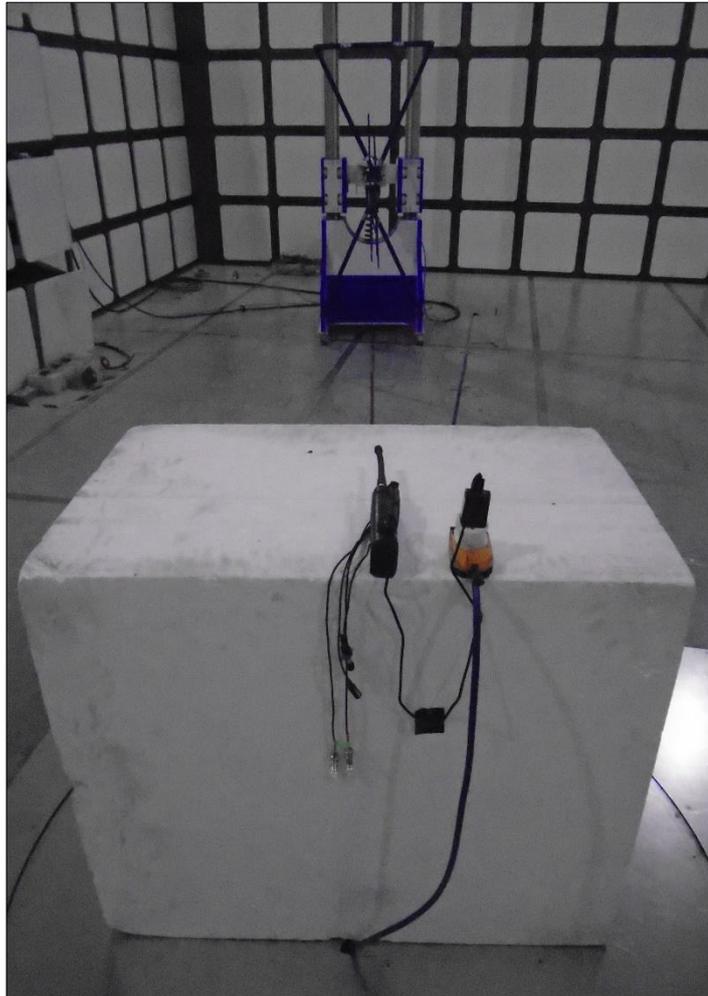


Figure 3 - 30 MHz to 1 GHz - Z Orientation



Figure 4 - 1 GHz to 2 GHz - X Orientation

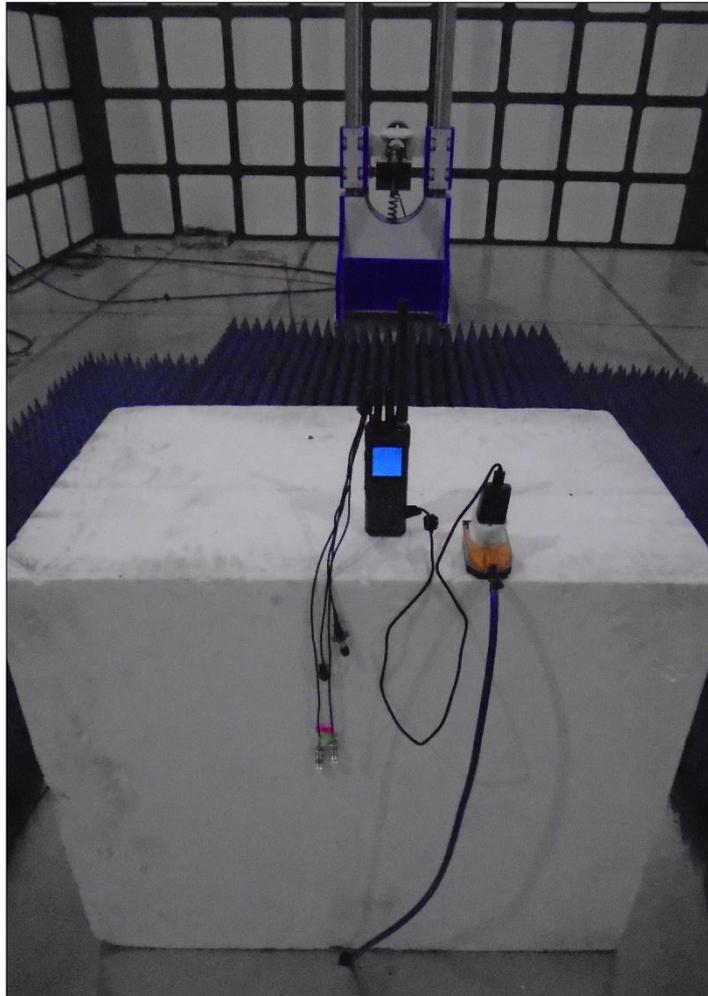


Figure 5 - 1 GHz to 2 GHz - Y Orientation

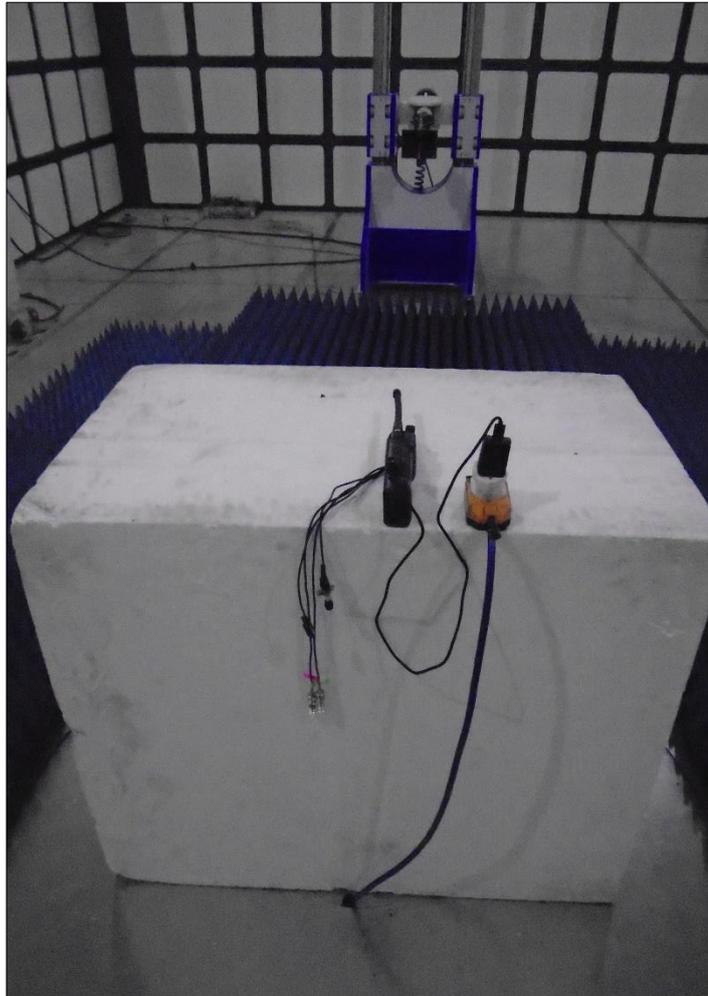
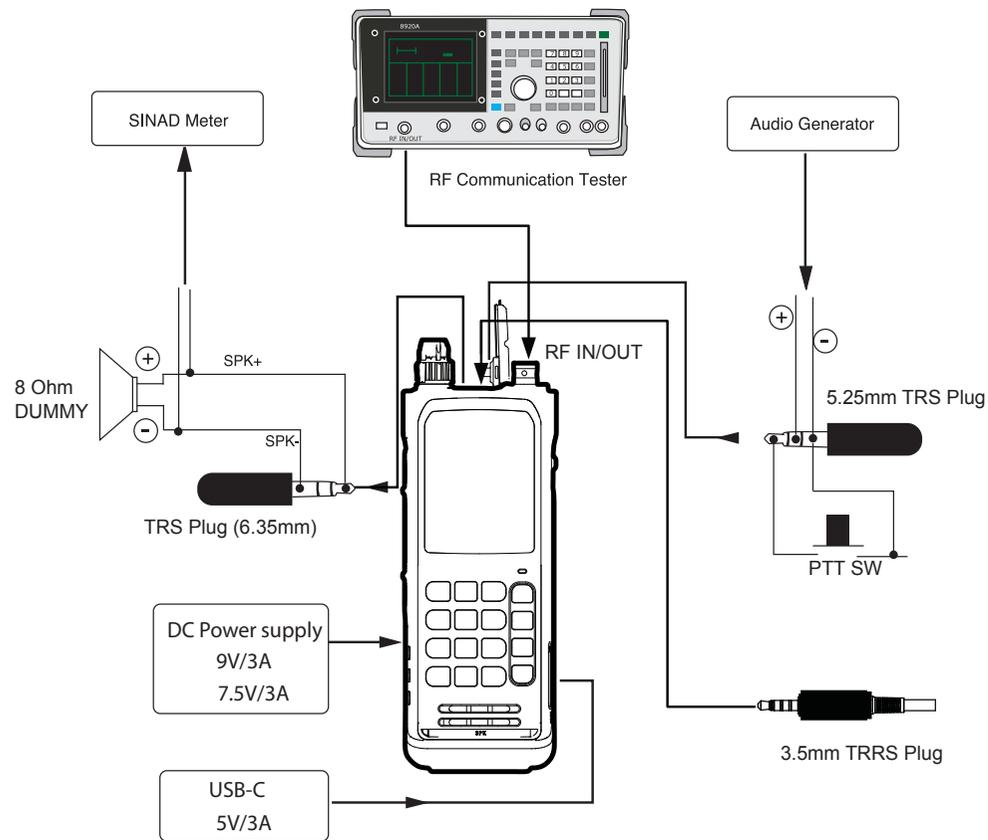


Figure 6 - 1 GHz to 2 GHz - Z Orientation

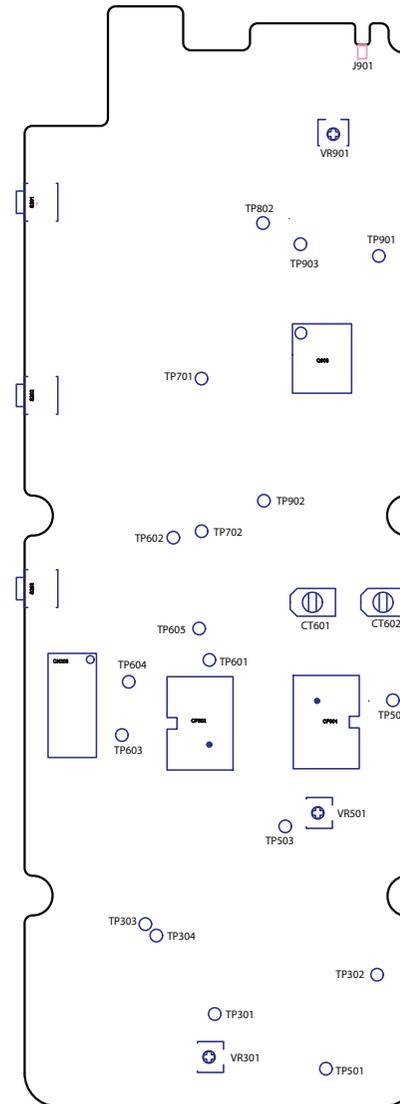
3. Alignment



3.1. Getting Started

- Connects the antenna connector (BNC type) to RF communication tester
- Connect audio generator as illustrated.
- Connects SINAD meter as illustrated.
- To follow above installation setup carefully.

3.2. Test and Adjust Location on RF Board



Item	Alignment	Procedure	Value
1	Rx VCO	(1) Connect the digital –multimeter (DMM) to TP501 test point. (2) Set the frequency to WX ch 10 (163.2750 MHz). Adjust CT601 to obtain 8.2V±0.2V on DMM. (3) Set the frequency to 118.000 MHz, re-check the RX VCO is above 2.8V.	8.2V±0.2V ≥2.8V
2	Tx VCO	(1) Connect the DMM to TP501 test point. (2) Set the frequency to 136.975 MHz, Pressing PTT SW then adjust The CT602 to obtain 4.0V±0.2V on DMM. (3) Set the frequency to 118.000 MHz, checks that the VCO voltage is above 1.8V.	4.0±0.2V ≥1.8V
3	Tx Carrier Power	(1) Set the frequency to 127.500 MHz, pressing PTT SW, Adjust VR901 to obtain 1.8W±0.1W . 🔊 WITHOUT MODULATION	1.8W±0.1W
4	Modulation Gain	(1) Connect the external Microphone and Speaker plug to J201 J202 SPK/ MIC earphone jack, then Input AF modulation signal from communication AF generator, The AF generator setup : Frequency : 1KHz Level:100mV. (2) Adjust VR401 so that the percentage amplitude modulation is 85% distortion ≤10%. (3) Set the AF generator output level to -7dBm, Check that the percentage amplitude modulation is ≤ 95 % ≥85 % and distortion ratio is 10% or less. (4) Set the AF generator output level to 28mV, Check that the percentage amplitude modulation is 30 % and	AM 85% Distortion ≤10 % 85% to 95% AM 30% Distortion ≤5 % ±3dB

Item	Alignment	Procedure	Value
5	Rx Sensitivity Check	(1) Set the output of the communication RF signal generator to -107dBm 30% modulation with 1KHz modulating frequency, and 118MHz input the RF signal to the ANT terminal. AF analyzer without 0.3~3KHz filter. (2) Radio set the frequency to 118MHz and volume set to maximum 1/2 AF output power. (3) Check that SINAD is 12dB or greater. (4) Set the frequency to 108.000 MHz and 136.975 MHz, check that the 12dB SINAD is also greater.	≤-107dBm @12dB SINAD
6	Rx Dynamic Range	(1) Set the frequency to 127.500 MHz. Input the following signal from the antenna setup : Frequency :127.500 MHz Level : Max sensitivity @12dB SINAD Modulation frequency :1KHz Percentage modulation : 30% (2) Radio set the frequency to 127.500 MHz and volume control set to AF output power @0 dB. (3) Change the signal generator output level from max sensitivity up to -7dBm, and then check AF output level, recording the maximum dynamic range within 0dB±3dB. (4) Set the frequency to118.000 MHz and 136.975 MHz, test methods and procedures same item 3	0dB±3dB 0dB±3dB