2 Test Details

2.1 Radiated Spurious Emissions (Simultaneous Transmission) (Hardware Version 1)

2.1.1 Specification Reference

FCC 47 CFR Part 2, Clause 2.1053
FCC 47 CFR Part 15, Clause 15.247 (d)
FCC 47 CFR Part 22, Clause 22.917(a)
FCC 47 CFR Part 24, Clause 24.238 (a)
FCC 47 CFR Part 27, Clause 27.53(h) and 27.53(g)
ISED RSS-130, Clause 4.7
ISED RSS-132, Clause 5.5
ISED RSS-133, Clause 6.5
ISED RSS-139, Clause 4.2
ISED RSS-247, Clause 5.5
ISED RSS-GEN, Clause 6.13

2.1.2 Equipment Under Test and Modification State

MiX 4401-B, S/N: 55000103 - Modification State 0

2.1.3 Date of Test

17-November-2021 to 12-December-2021

2.1.4 Test Method

A preliminary profile of the Radiated Spurious Emissions was obtained up to the 10th harmonic by operating the EUT on a remotely controlled turntable within a semi-anechoic chamber. Measurements of emissions from the EUT were obtained with the Measurement Antenna in both Horizontal and Vertical Polarisations. The profiling produced a list of the worst-case emissions together with the EUT azimuth and antenna polarisation.

Testing was performed in accordance with ANSI C63.26, Clause 5.5.

Prescans and final measurements were performed using the direct field strength method.

Field strength measurements were performed and then converted to Equivalent Power Measurements in accordance with ANSI C63.26, Clause 5.2.7 equation c)

Example calculation:

E (dBuV/m) + 20log(d) - 104.8 = EIRP (dBm) where (d) is the measurement distance.

82.2 (dBuV/m) + 20log(3) – 104.8 = EIRP (dBm)

-13.0 = EIRP (dBm)

2.1.5 Example Test Setup Diagram

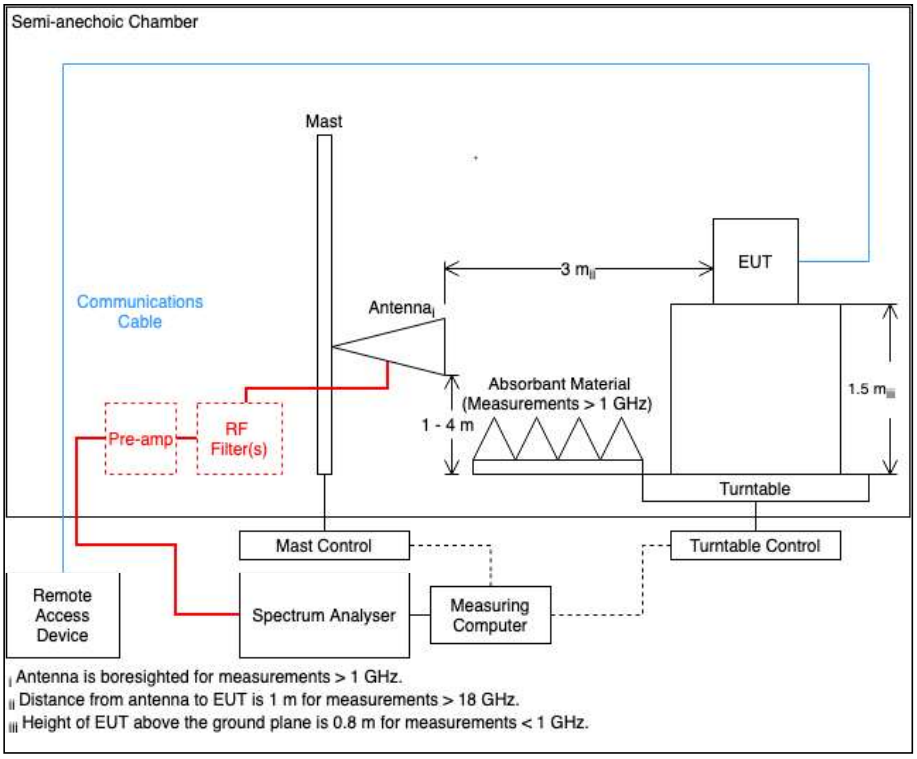

Figure 1

2.1.6 Environmental Conditions

Ambient Temperature	20.4 - 25.7 °C
Relative Humidity	35.3 - 47.0 %

2.2 Radiated Spurious Emissions (Simultaneous Transmission) (Hardware Version 3)

2.2.1 Specification Reference

FCC 47 CFR Part 2, Clause 2.1503
FCC 47 CFR Part 15, Clause 15.247 (d)
FCC 47 CFR Part 22, Clause 22.917 (a)
FCC 47 CFR Part 24, Clause 24.238 (a)
FCC 47 CFR Part 27, Clause 27.53 (h)

2.2.2 Equipment Under Test and Modification State

MiX 4401-B, S/N: 55000206 - Modification State 0

2.2.3 Date of Test

13-March-2022 to 17-April-2022

2.2.4 Test Method

Measurements were only performed over the frequency range specified in FCC Part 15.35(b) as required by KDB 996369 D04, clause 3.4.

A preliminary profile of the Radiated Spurious Emissions was obtained up to the 5th harmonic by operating the EUT on a remotely controlled turntable within a semi-anechoic chamber.

Measurements of emissions from the EUT were obtained with the Measurement Antenna in both Horizontal and Vertical Polarisations. The profiling produced a list of the worst-case emissions together with the EUT azimuth and antenna polarisation.

Testing was performed in accordance with ANSI C63.26, Clause 5.5.

Prescans and final measurements were performed using the direct field strength method.

Field strength measurements were performed and then converted to Equivalent Power Measurements in accordance with ANSI C63.26, Clause 5.2.7 equation c)

Example calculation:

E (dBuV/m) + 20log(d) - 104.8 = EIRP (dBm) where (d) is the measurement distance.

82.2 (dBuV/m) + 20log(3) – 104.8 = EIRP (dBm)

-13.0 = EIRP (dBm)

The limit line on the plots shows the most stringent limit. This is the limit from FCC pt 22.917 and is -13dBm. This has been applied to emissions which fall into the restricted bands as defined in FCC 15.205(a). For emissions that fall outside of restricted bands as defined in 15.205 (a), the limit from 15.247 (d) has been applied. The power of the 915 MHz transmitter has been measured in 100kHz RBW, and the limit calculated from this.

2.2.5 Example Test Setup Diagram

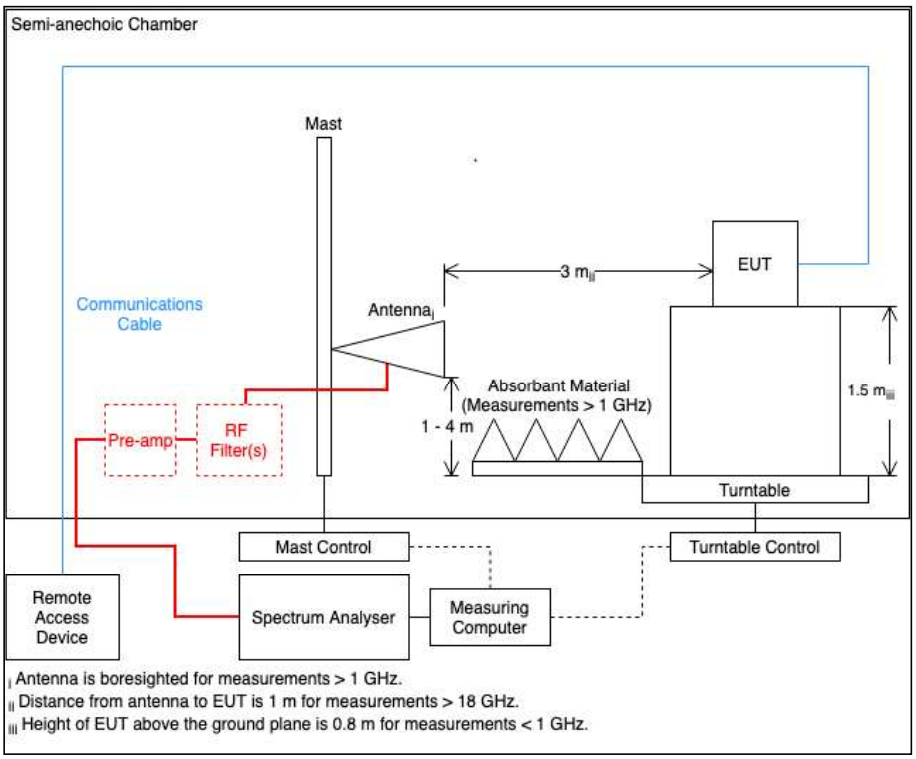

Figure 26

2.2.6 Environmental Conditions

Ambient Temperature	19.1 - 25.7 °C
Relative Humidity	30.6 - 51.1 %

3 Photographs

3.1 Test Setup Photographs

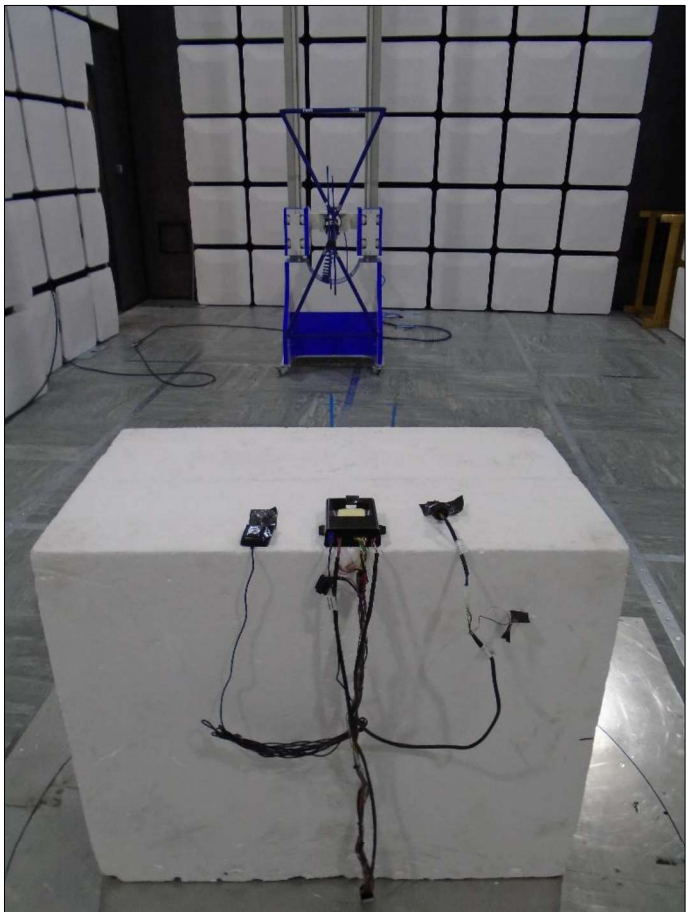

Figure 45 - Test Setup - 30 MHz to 1 GHz - X Orientation

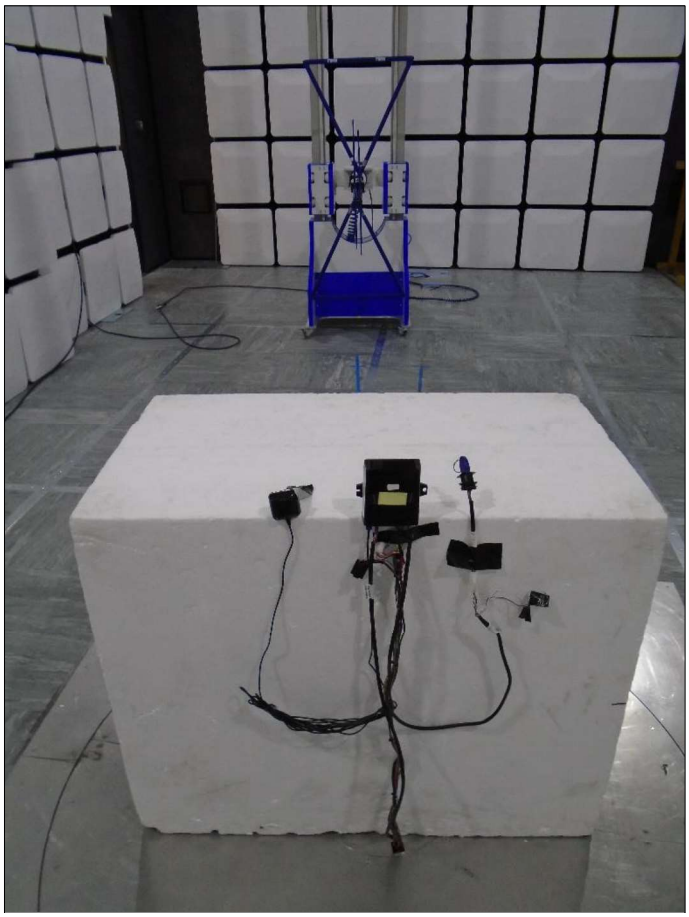

Figure 46 - Test Setup - 30 MHz to 1 GHz - Y Orientation

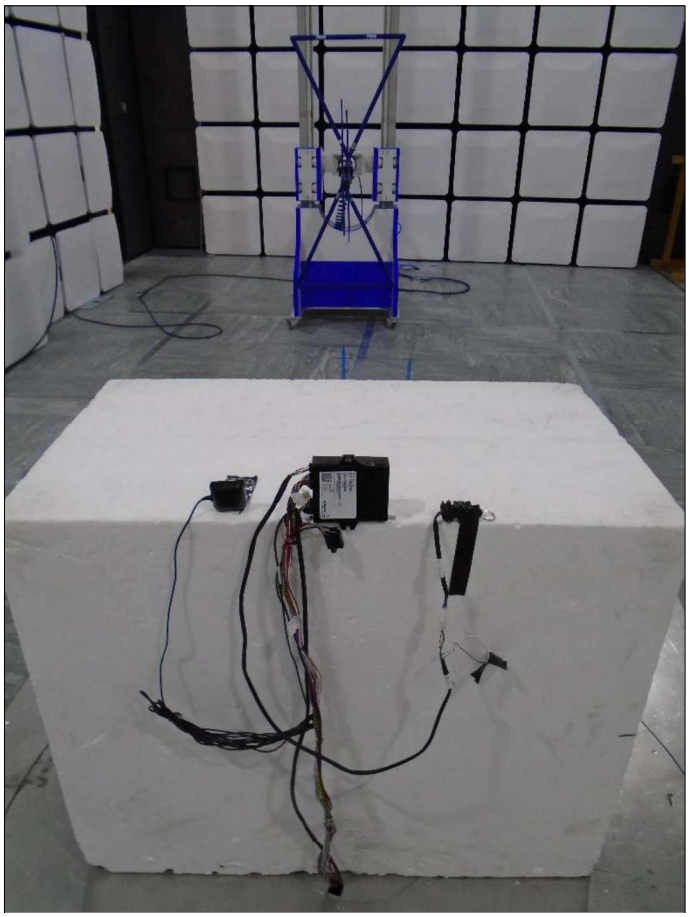

Figure 47 - Test Setup - 30 MHz to 1 GHz - Z Orientation

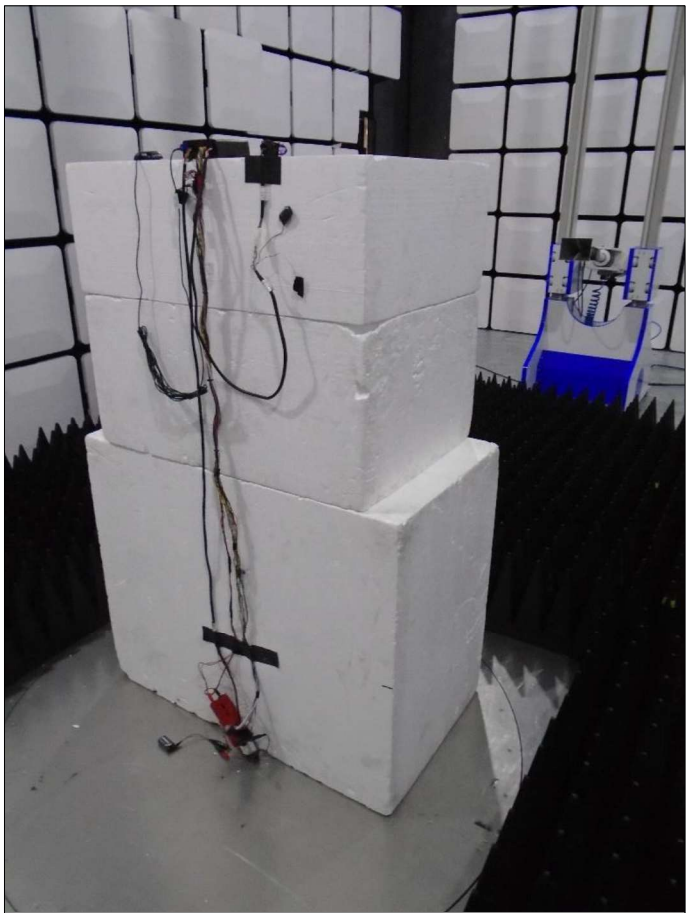

Figure 48 - Test Setup - 1 GHz to 18 GHz - X Orientation

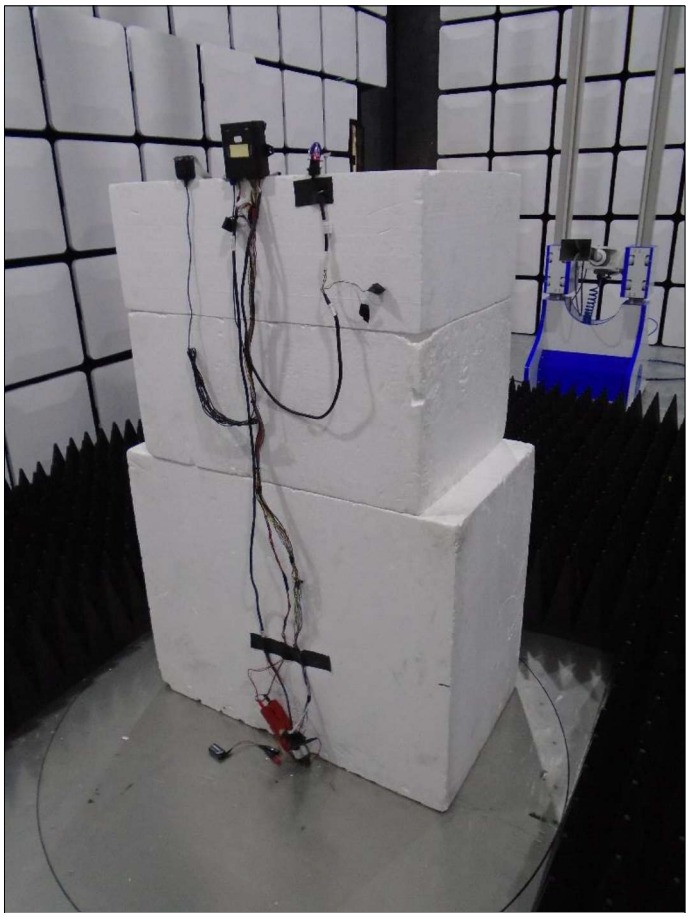

Figure 49 - Test Setup - 1 GHz to 18 GHz - Y Orientation

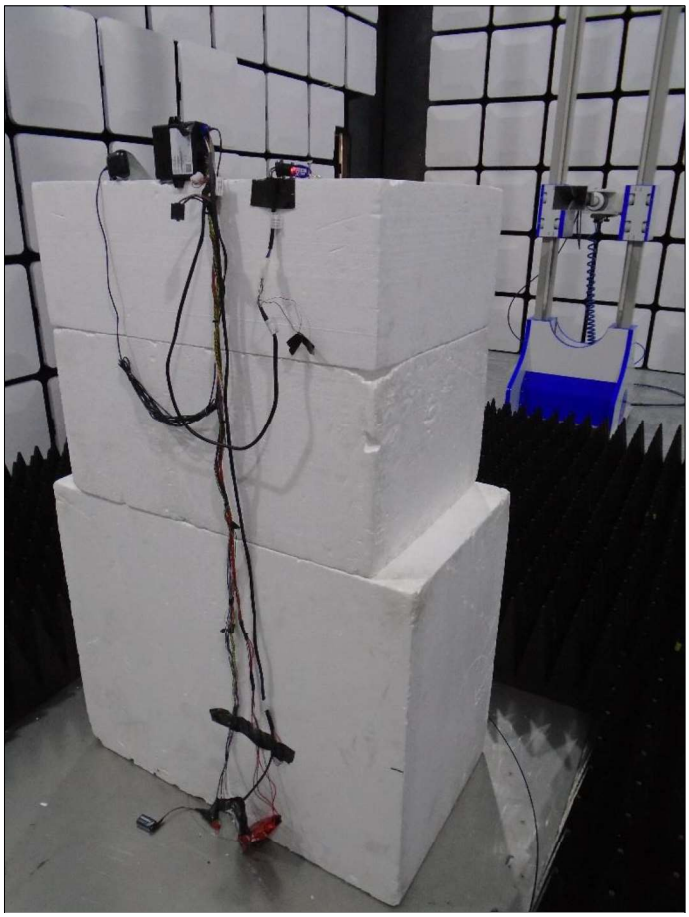

Figure 50 - Test Setup - 1 GHz to 18 GHz - Z Orientation

Figure 51 - Test Setup - 18 GHz to 25 GHz - X Orientation

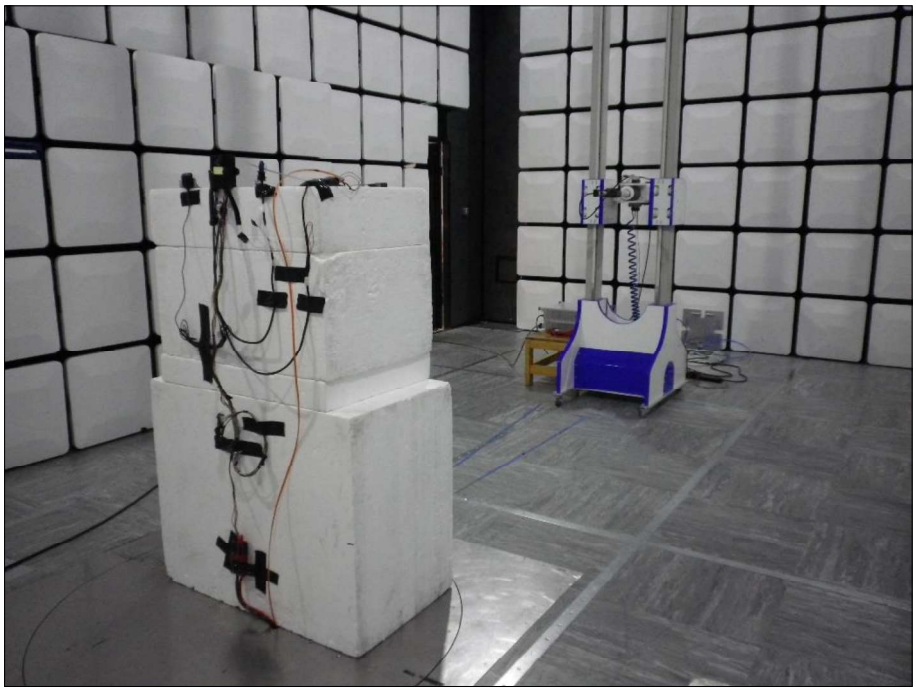

Figure 52 - Test Setup - 18 GHz to 25 GHz - Y Orientation

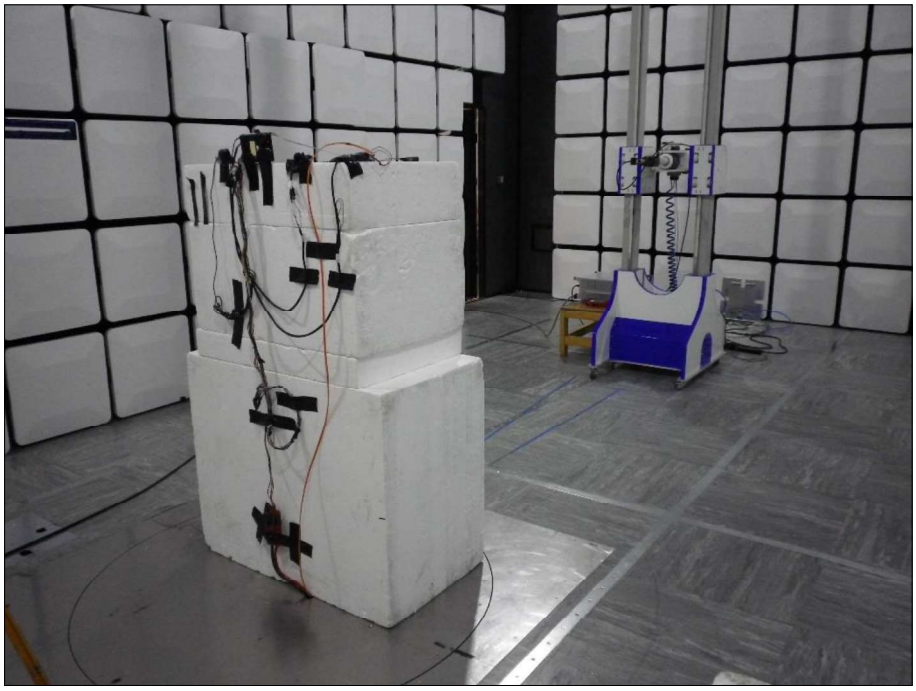

Figure 53- Test Setup - 18 GHz to 25 GHz - Z Orientation