



2.4 Spurious Radiated Emissions

2.4.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (d) and 15.209

2.4.2 Equipment Under Test and Modification State

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

2.4.3 Date of Test

07-March-2022 to 16-March-2022

2.4.4 Test Method

This test was performed in accordance with ANSI C63.10, clause 6.3, 6.5 and 6.6.

For frequencies > 1 GHz, plots for average measurements were taken in accordance with ANSI C63.10, clause 11.12.2.5.2.

The EUT was placed on the non-conducting platform in a manner typical of a normal installation. As the EUT was considered mobile/portable and therefore reasonable to be used in multiple planes, pre-scans were performed with the EUT orientated in X, Y and Z planes with reference to the ground plane.

Ports on the EUT were terminated with loads as described in ANSI C63.4 clause 6.2.4. For EUT's with multiple connectors of the same type, additional interconnecting cables were connected, and pre-scans performed to determine whether the level of the emissions were increased by >2 dB.

The plots shown are the characterisation of the EUT. The limits on the plots represent the most stringent case for restricted bands, (74/54 dBuV/m) when compared to 20 dBc outside restricted bands. The limits shown have been used as a threshold to determine where further measurements are necessary. Where results are within 10 dB of the limits shown on the plots, further investigation was carried out and reported in results tables.

The following conversion can be applied to convert from dB μ V/m to μ V/m:
 $10^{(\text{Field Strength in dB}\mu\text{V/m}/20)}$.

To determine the emission characteristic of the EUT above 18 GHz, the test antenna was swept over all faces of the EUT whilst observing a spectral display. The frequency of any emissions of interest was noted for formal measurement at the correct measurement distance of 1m. This procedure was repeated for all relevant transmit operating channels.

Representative noise floor plots for > 18 GHz have been presented for X orientation.

Above 18 GHz, the measurement distance was reduced to 1 m. The limit line was increased by $20 \cdot \text{LOG}(3/1) = 9.54$ dB.

At a measurement distance of 1 meter the limit line was increased by $20 \cdot \text{LOG}(3/1) = 9.54$ dB.

Where formal measurements have been necessary, the results have been presented in the emissions table.

2.4.5 Example Test Setup Diagram

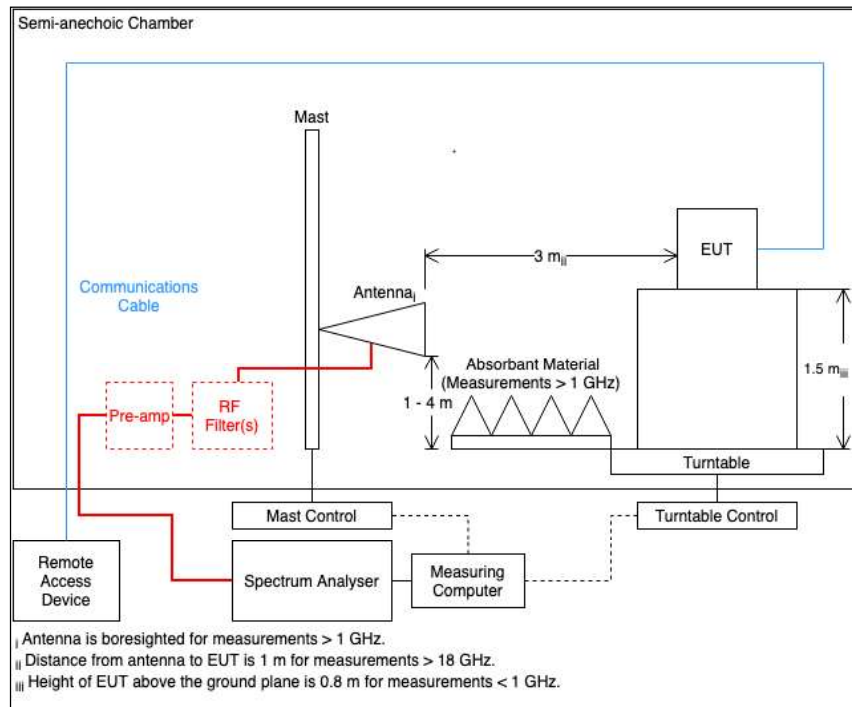


Figure 9

2.4.6 Environmental Conditions

Ambient Temperature	20.2 - 21.5 °C
Relative Humidity	26.8 - 39.9 %

3 Photographs

3.1 Test Setup Photographs

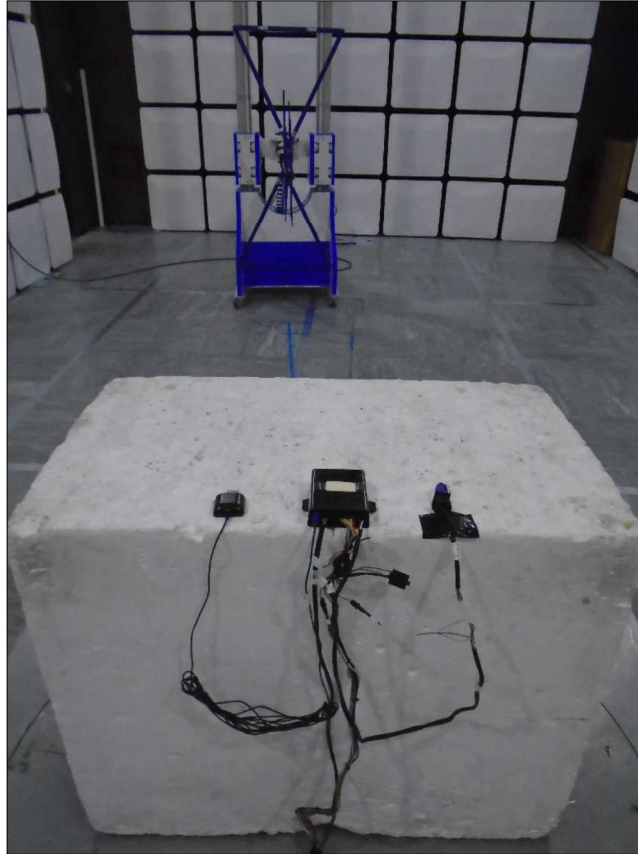


Figure 66 - Test Setup - 30 MHz to 1 GHz - X Orientation

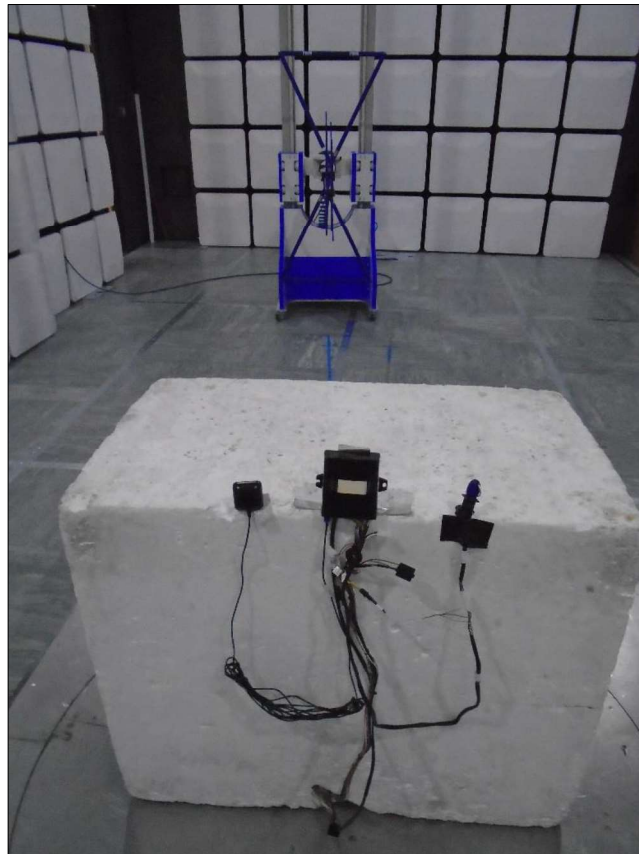


Figure 67 - Test Setup - 30 MHz to 1 GHz - Y Orientation

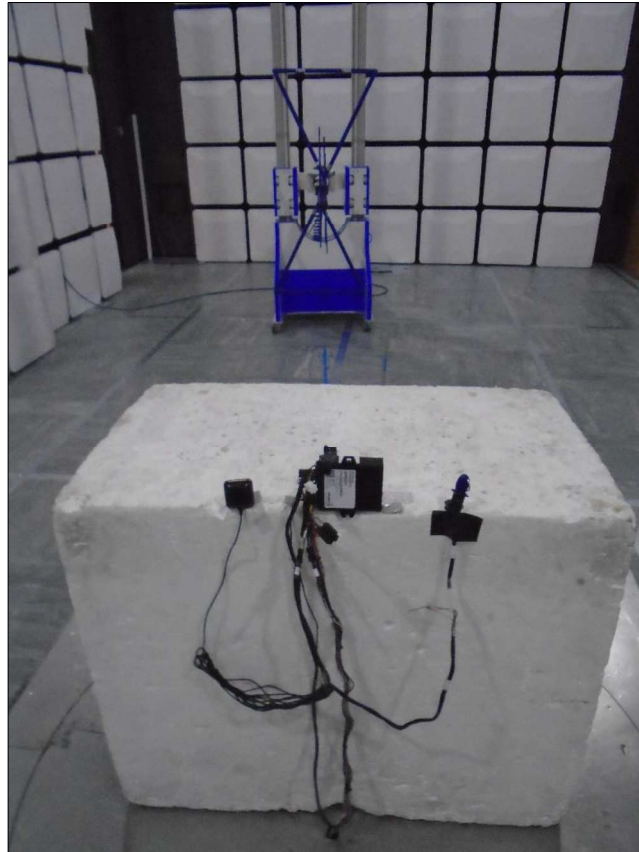


Figure 68 - Test Setup - 30 MHz to 1 GHz - Z Orientation

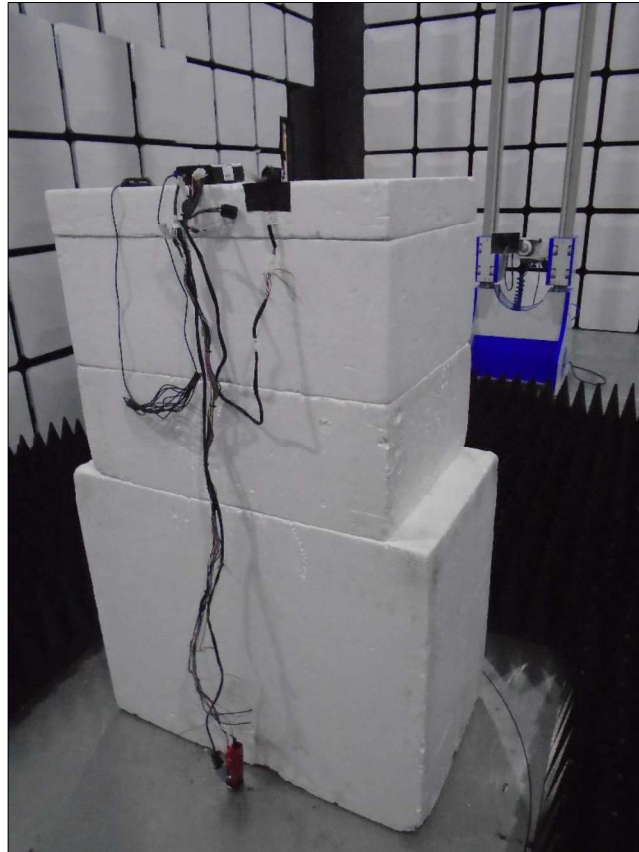


Figure 69 - Test Setup - 1 GHz to 18 GHz - X Orientation

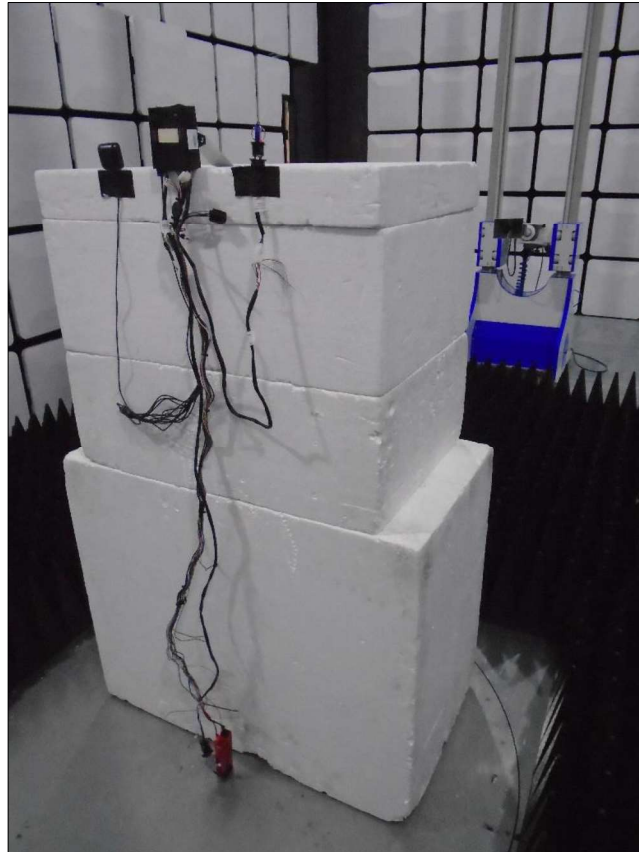


Figure 70 - Test Setup - 1 GHz to 18 GHz - Y Orientation



Figure 71 - Test Setup - 1 GHz to 18 GHz - Z Orientation



Figure 72 - Test Setup - 18 GHz to 25 GHz - X Orientation



Figure 73 - Test Setup - 18 GHz to 25 GHz - Y Orientation



Figure 74 - Test Setup - 18 GHz to 25 GHz - Z Orientation