

FCC and ISED Test Report

MiX Telematics International (Pty) Ltd
Telematics Unit, Model: MiX 3400-B and BLE
Remote, Model: Bluetooth Driver/HOS Driver ID

In accordance with FCC 47 CFR Part 15B and
ICES-003

Prepared for: MiX Telematics International (Pty) Ltd
Blaauwklip Office Park 2
Cnr Strand & Webersvalley Roads
Stellenbosch, South Africa

FCC ID: 2AFMS-3400XG IC: N/A



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Document 75952029-14 Issue 01

SIGNATURE

A handwritten signature of Andrew Lawson.

NAME	JOB TITLE	RESPONSIBLE FOR	ISSUE DATE
Andrew Lawson	Chief Engineer, EMC	Authorised Signatory	04 August 2022

Signatures in this approval box have checked this document in line with the requirements of TÜV SÜD document control rules.

ENGINEERING STATEMENT

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate limited compliance with FCC 47 CFR Part 15B and ICES-003. The sample tested was found to comply with the requirements defined in the applied rules.

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Testing	Michael Mawby	04 August 2022	A handwritten signature of Michael Mawby.
FCC Accreditation		ISED Accreditation	
90987 Octagon House, Fareham Test Laboratory			12669A Octagon House, Fareham Test Laboratory

EXECUTIVE SUMMARY

A sample of this product was tested and found to be compliant with FCC 47 CFR Part 15B 2020 and ICES-003: Issue 7: 2020 for the tests detailed in section 1.3.



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TÜV SÜD Group Company

Phone: +44 (0) 1489 558100
Fax: +44 (0) 1489 558101
www.tuvsud.com/en

TÜV SÜD
Octagon House, Concorde Way
Fareham
Hampshire, PO15 5RL
United Kingdom

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2 Test Details

2.1 Radiated Disturbance

2.1.1 Specification Reference

FCC 47 CFR Part 15B, Clause 15.109
ICES-003, Clause 3.2

2.1.2 Equipment Under Test and Modification State

MiX 3410-B & BLE Remote, S/N: 33000050 - Modification State 0

2.1.3 Date of Test

02-August-2022 to 03-August-2022

2.1.4 Test Method

The EUT was set up on a non-conductive table 0.8 m above a reference ground plane within a semi-anechoic chamber on a remotely controlled turntable.

A pre-scan of the EUT emissions profile using a peak detector was made at a 3 m antenna distance whilst varying the antenna-to-EUT azimuth and polarisation.

For an EUT which could reasonably 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.

Using a list of the highest emissions detected during the pre-scan along with their bearing and associated antenna polarisation, the EUT was then formally measured using a Quasi-Peak, Peak or CISPR Average detector as appropriate.

The readings were maximised by adjusting the antenna height, polarisation and turntable azimuth, in accordance with the specification.

2.1.5 Example Calculation

Below 1 GHz:

$$\begin{aligned}\text{Quasi-Peak level (dB}\mu\text{V/m)} &= \text{Receiver level (dB}\mu\text{V)} + \text{Correction Factor (dB/m)} \\ \text{Margin (dB)} &= \text{Quasi-Peak level (dB}\mu\text{V/m)} - \text{Limit (dB}\mu\text{V/m)}\end{aligned}$$

Above 1 GHz:

$$\begin{aligned}\text{CISPR Average level (dB}\mu\text{V/m)} &= \text{Receiver level (dB}\mu\text{V)} + \text{Correction Factor (dB/m)} \\ \text{Margin (dB)} &= \text{CISPR Average level (dB}\mu\text{V/m)} - \text{Limit (dB}\mu\text{V/m)}\end{aligned}$$

$$\begin{aligned}\text{Peak level (dB}\mu\text{V/m)} &= \text{Receiver level (dB}\mu\text{V)} + \text{Correction Factor (dB/m)} \\ \text{Margin (dB)} &= \text{Peak level (dB}\mu\text{V/m)} - \text{Limit (dB}\mu\text{V/m)}\end{aligned}$$

2.1.6 Example Test Setup Diagram

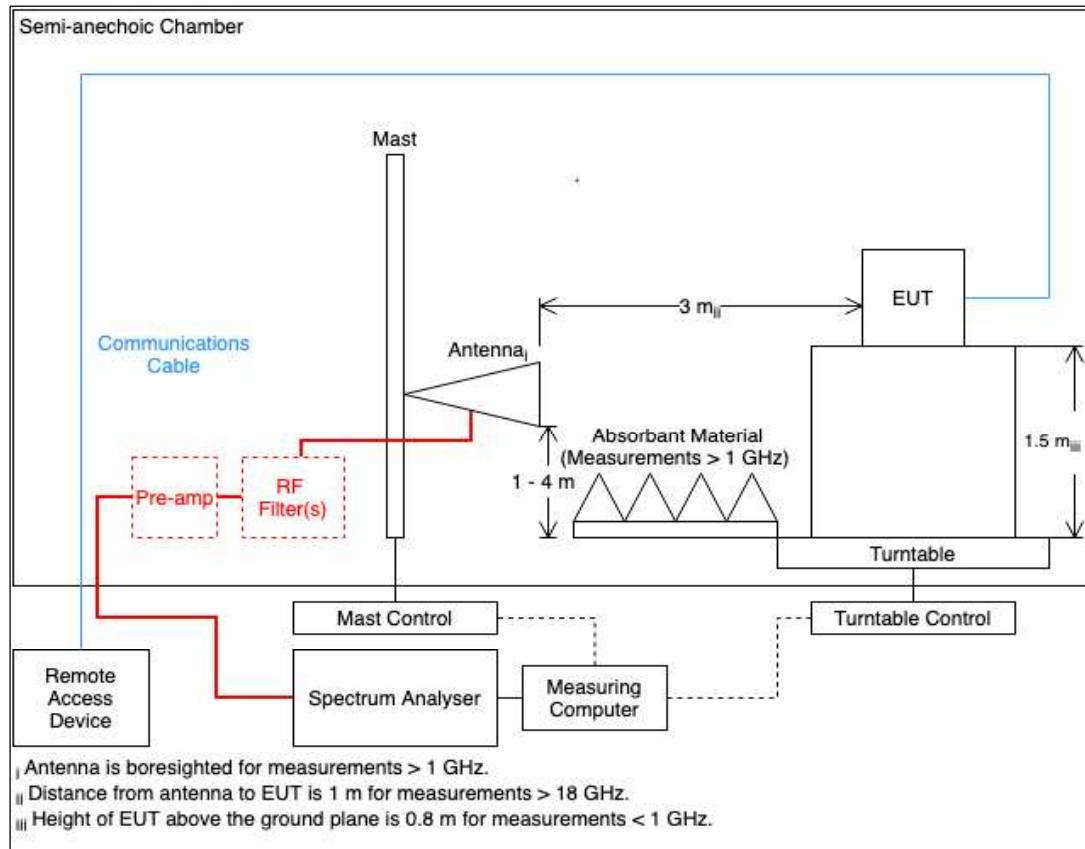


Figure 5

2.1.7 Environmental Conditions

Ambient Temperature 18.9 °C
Relative Humidity 56.3 %

2.1.8 Specification Limits

Required Specification Limits, Field Strength - Class B Test Limit at a 3 m Measurement Distance		
Frequency Range (MHz)	Test Limit (µV/m)	Test Limit (dBµV/m)
30 to 88	100	40.0
88 to 216	150	43.5
216 to 960	200	46.0
Above 960	500	54.0

Supplementary information:

Note 1. A Quasi-peak detector is to be used for measurements below 1 GHz.

Note 2. A CISPR Average detector is to be used for measurements above 1 GHz.

Note 3. The Peak test limit above 1 GHz is 20 dB higher than the CISPR Average test limit.

Table 8

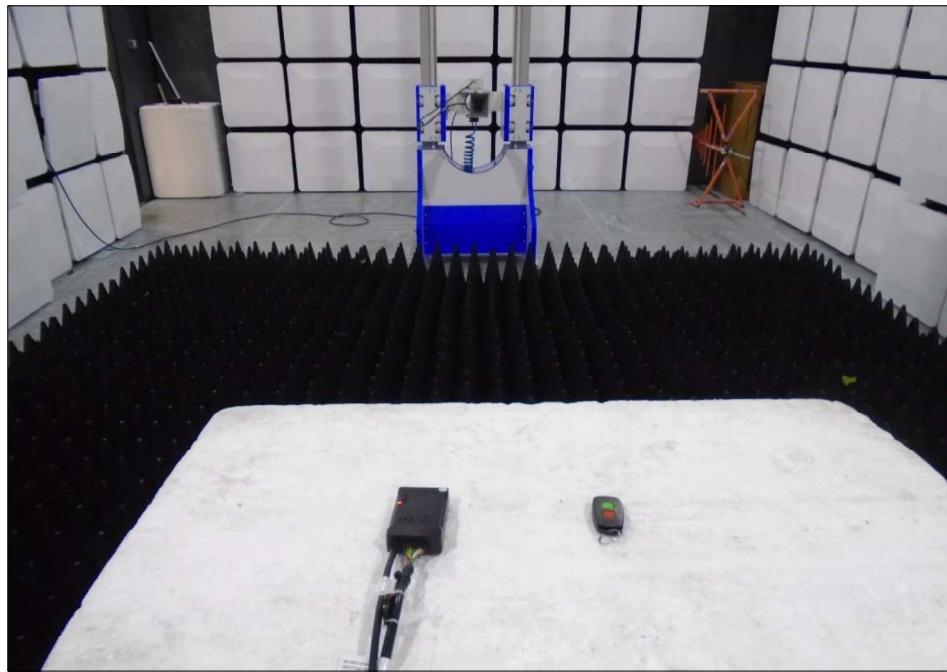


Figure 18 - Test Setup - 1 GHz to 13.5 GHz



Figure 19 - Test Setup - 30 MHz to 1 GHz