

17 June 2021

TUV SUD BABT
Octagon House,
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Fareham,
Hampshire,
PO15 5RL
United Kingdom

Subject: Cover Letter for MiX 460C-4G / MiX 460C-4G-B with FCC ID: 2AFMS-4X0CXG

In accordance with §2.1043 “**Changes in certificated equipment**”, we hereby apply for a new FCC ID for this device. As the characteristics required to be reported are not changed, the abbreviated procedure of §2.933 “**Change in identification of equipment**” is used.

Original identification used on equipment: FCC ID for the MiX 46MC-4G is **2AFMS-4XMCXG**

Date of Grant: 06/04/2020

Description of the original equipment:

The **MiX 46MC-4G** is a fleet product. It consists mainly of an on-board computer, a LTE CAT M1 modem with 2G fallback, a GNSS, an accelerometer, Low Energy Bluetooth, I/O, 2 x CAN, 2 x RS232, 4 x positive drives and 434 / 915 MHz short range device (SRD).

How the equipment bearing the modified identification differs from the original equipment?

The 434/915 MHz SRDs are not populated in the **MiX 460C-4G** variant. The PCB stays the same. The circuitry stays the same, apart from that the SRD components and antenna that are not populated. As this variant has less features, this application is for an additional equipment authorisation (Grant) with a different FCC ID, namely: **2AFMS-4X0CXG**.

MiX Telematics International (Pty) Ltd, hereby also declare that the battery and non-battery variants, present the same electrical, physical and electro mechanics characteristics, the same PCB, layout and components. The only difference between them is that the “**-B**” models have an internal backup battery plugged in, allowing the device to work after the disconnection of the vehicle’s battery.

The original test results continued to be representative of and applicable to the MiX 460C-4G (US). In addition, the following tests have been conducted:

FCC FCC ID 2AFMS-4X0CXG Contains FCC ID: XPYUBX18ZO01 Contains: 8595A-UBX18ZO01	FCC 47 CFR Part 15B: 2019	FCC 47 CFR Part 15B, Clause 15.109 Radiated Disturbance in accordance with ANSI C63.4:2014	TUV UK	21-Apr-21	Document 75951686-01 Issue 01
	FCC 47 CFR Part 15C: 2019	FCC 47 CFR Part 15C, Clause 15C covering 915MHz transmitter: - 15.247 (d) Authorised Band Edges (ANSI C63.10 (2013)) - 15.205 Restricted Band Edges (ANSI C63.10 (2013)) - 15.205, 15.247 (d) Spurious Band Edges (ANSI C63.10 (2013))	TUV UK	16-Apr-21	Document 75942815-02 Issue 04
	FCC 47 CFR Part 15C: 2019	FCC 47 CFR Part 15C, Clause 15.247 covering BLE transmitter: Sec 2.1: 15.247 (d) Authorised Band Edges (with ANSI C63.10 (2013)) Sec 2.2: 15.205 Restricted Band Edges (with ANSI C63.10 (2013)) Sec 2.3: 15.247 (d), 15.205 Radiated Spurious Emissions (with ANSI C63.10 (2013))	TUV UK	16-Apr-21	Document 75948420-07 Issue 02

	FCC 47 CFR Part 2.1091:2019	<p>EN 50665 Human RF Exposure Assessment referencing EN62311 covering all transmitters and including simultaneous transmission assessment.</p> <p>OET65:97 Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields</p> <p>IEEE C95.3:2002 IEEE Recommended Practice for Measurements and Computations of Radio Frequency Electromagnetic Fields with Respect to Human Exposure to Such Fields, 100 kHz - 300 kHz</p>	TUV UK	16-Apr-21	Document 75948420-09 Issue 03
	FCC 47 CFR Parts 15C, 22, and 24: 2019	<p>FCC 47 CFR Parts 15C, 22, 24 and 27 Radiated Spurious Emissions (Simultaneous transmission): 2019</p> <p>(Covering LTE band 2 with SRD 915MHz and BLE) - Sec 2.1: 15.247 (d), 15.205, 24.238 (a)</p> <p>(Covering LTE bands 4 with SRD 915MHz and BLE) - Sec 2.1: 15.247 (d) and 15.205, 27.53 (h)</p> <p>(Covering LTE bands 5 with SRD 915MHz and BLE) - Sec 2.1: 15.247 (d), 15.205, 22.917 (a)</p> <p>(Covering LTE bands 12 with SRD 915MHz and BLE) - Sec 2.1: 15.247 (d), 15.205, 27.53 (g)</p>	TUV UK	05-May-20	Document 75948420-05 Issue 02

	European Union Radio Equipment Directive (RED) 2014/53/EU Article 3.1b: EMC	ETSI EN 301 489-1: V2.2.3 (2019-11) EMC for Radio Equipment and Services	TUV UK	09-Apr-20	Document 75948420-01 Issue 03
		ETSI EN 301 489-3: V2.1.1 (2019-03) Specific conditions for Short-Range Devices (SRD) operating on frequencies between 9 kHz and 246 GHz	TUV UK	09-Apr-20	Document 75948420-01 Issue 03

		ETSI EN 301 489-17: Draft V3.2.2 (2019-12) Broadband Data Transmission	TUV UK	09-Apr-20	Document 75948420-01 Issue 03
		ETSI EN 301 489-19: V2.1.1 (2019-04) GNSS Receivers	TUV UK	09-Apr-20	Document 75948420-01 Issue 03

		ETSI EN 301 489-52: V1.1.0 (2016-11) Specific conditions for Cellular Communication Mobile and portable (UE) radio and ancillary equipment	TUV UK	09-Apr-20	Document 75948420-01 Issue 03
	European Union Radio Equipment Directive (RED) 2014/53/EU Article 3.2 Radio	ETSI EN 301 908-1: V11.1.1 (2016-07) covering LTE CAT M1 FDD Bands B3, B8, B20 and B28. 4.2.2 Radiated Emissions (UE)	TUV UK	16-Apr-21	Document 75948420-03 Issue 02

		ETSI EN 301 511: V12.5.1 (2017-03) Radiated Spurious Emissions in allocated GSM 900 and DCS 1800 bands, including voltage extremes of the DC supply (Related ETSI TS 151 010-1: V13.8.0 (2019-03))	TUV UK	16-Apr-21	Document 75948420-02 Issue 02
		ETSI EN 300 328 : V2.1.1 (2016-11) Bluetooth Spurious Emissions	TUV UK	22-Apr-21	Document 75951686-04 Issue 01

See below photographs as required by §2.1033(b)(7) or (c)(12) showing the exterior appearance of the equipment, including the operating controls available to the user and the identification label:



Figure 1: Top View of the MiX 460C-4G/ MiX 460C-4G-B Enclosure



Figure 2: Front View of the MiX 460C-4G / MiX 460C-4G-B Enclosure



Figure 3: Rear View of the MiX 460C-4G / MiX 460C-4G-B Enclosure



Figure 4: View of MiX 460C-4G with Rear Panel Removed



Figure 5: Bottom View of the MiX 460C-4G Enclosure (interim label)

MiX 460C-4G		This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
SERIAL NUMBER 58123456 PART NUMBER U0095MT IMEI NUMBER 123456789012345 BLUETOOTH MAC ADDRESS 00-01-02-1A-2B-3C V1 MM WW/YYYY		
FCC ID: 2AFMS-4X0CXG Contains FCC ID: XPYUBX18ZO01 Contains ISED ID: 8595A-UBX18ZO01 10.5 – 32VDC; 4.5A (max)		
m'X TELEMATICS		Made in South Africa www.mixtelematics.com

Figure 6: Picture of the MiX 460C-4G label with new FCC ID




Figure 7: GNSS Antenna



Figure 8: Bottom View of the MiX 460C-4G-B Enclosure (interim label)


MiX 460C-4G-B

SERIAL NUMBER




59123456

PART NUMBER



U0097MT

IMEI NUMBER





123456789012345

BLUETOOTH MAC ADDRESS 00-01-02-1A-2B-3C

V1 MM WW/YYYY

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

FCC ID: 2AFMS-4X0CXG


Contains FCC ID: XPYUBX18Z001

Contains ISED ID: 8595A-UBX18Z001

10.5 – 32VDC; 4.5A (max)

Made in South Africa

www.mixtelematics.com



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Figure 9: Picture of the MiX 460C-4G-B label with new FCC ID



Figure 10: View of MiX 460C-4G-B with Rear Panel Removed (backup battery inserted)

We remain at your disposal for any clarifications that may become necessary.

Sincerely,

A handwritten signature in black ink, appearing to read 'TC Bothma', is positioned above a horizontal line.

Certification Manager: TC Bothma