David Katko, 700 South Babcock Street, Melbourne, FL 32901,

United States of America
FEDERAL COMMUNICATIONS COMMISSION
EXPERIMENTAL
RADIO STATION CONSTRUCTION PERMIT
AND LICENSE

EXPERIMENTAL	WI2XNE
(Nature of Service)	(Call Sign)
XT FX MO	0107-EX-CR-2017
(Class of Station)	(File Number)

NAME Thales Avionics Inc.

Subject to the provisions of the Communications Act of 1934, subsequent acts, and treaties, and all regulations heretofore or hereafter made by this Commission, and further subject to the conditions and requirements set forth in this license, the licensee hereof is hereby authorized to use and operate the radio transmitting facilities hereinafter described for radio communications in accordance with the program of experimentation described by the licensee in its application for license.

Operation: In accordance with Sec. 5.3(h) of the Commission's Rules

Station Locations

(1) Melbourne (BREVARD), FL - NL 28-06-00; WL 80-37-12
(2) MOBILE: Germantown, MD, within 128.75 km, centered around NL 39-10-12; WL 77-16-12
(3) MOBILE: Charleston, SC, within 563.3 km, centered around NL 32-46-48; WL 79-55-48

Frequency Information

Melbourne (BREVARD), FL - NL 28-06-00; WL 80-37-12

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
28.438-30 GHz	FX		19.28 kW (ERP)	0.0005 %
		2M50G1D		
		2M50G1D		
		10M0G1D		

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This authorization effective May 01, 2017 and
will expire 3:00 A.M. EST November 01, 2017

FEDERAL COMMUNICATIONS COMMISSION

Frequency Information

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		2M50G1D		
		10M0G1D		

Special Conditions:

(1) Licensee should be aware that other stations may be licensed on these frequencies and if any interference occurs, the licensee of this authorization will be subject to immediate shut down.

(2) In lieu of frequency tolerance, the occupied bandwidth of the emission shall not extend beyond the band limits set forth above.

(3) Licensee must coordinate with the local Society of Broadcast Engineer coordinator and with the existing and future Fixed Microwave Service licensees in accordance with 47 CFR, Part 101.103(d) prior to accessing to 28-30 GHz.

(4) Ground operations only.

(5) Licensee is granted temporary authority for six-month period starting October 26, 2016 to conduct testing with a fixed satellite earth station to transmit and receive from a GSO satellite network: AMC-15 (Call Sign S2180) @ 105.05 degrees W and AMC-16 (Call Sign S2181) @ 85 degrees W set forth by the applicant.

(6) The authorized frequencies for uplink are 28.4-28.6 GHz, 29.3 - 30.0 GHz (Earth-to-space) and for downlink 18.6-18.8 GHz, and 19.7-20.2 GHz (space-to-Earth). These frequencies are within the satellites frequencies of AMC-15 and AMC-16 that are currently authorized.

(7) For the fixed earth station, transmissions will emanate from Thales center located at 28.1 degrees N/80.62 degrees W., at 700 S. Babcock Street, Melbourne, Florida 32901.

(8) The area of operations of the earth station in-motion vehicle will be conducted on land at the area requested: 1) within 80-miles radius from Germantown, Montgomery Country in Maryland and 2) within 350-mile radius from Charleston, South Carolina which including Melbourne, Florida.

Special Conditions:

(9) Stop Buzzer 24/7 point of contact to cease all emissions from transmissions for both fixed station and/or earth station in-motion:

Mr. Martin Matura,
Phone: 321-292-0878,
Email: martin.matura@us.thalesgroup.com

(10) Operations are on a non-interference basis (NIB) and shall not cause harmful interference to, and shall not claim protection from, interference caused to it by any other lawfully operating station and it shall cease transmission(s) immediately upon notice of such interference and notify the FCC in writing.

(11) At the fixed earth station location, the licensee shall take all necessary measures to ensure that the antenna does not create potential exposure of humans to radiofrequency radiation in excess of the FCC exposure limits defined in 47 C.F.R. §§ 1.1307(b) and 1.1310 wherever such exposures might occur. Measures must be taken to ensure compliance with limits for both occupational/controlled exposure and for general population/uncontrolled exposure, as defined in these rule sections. Compliance can be accomplished in most cases by appropriate restrictions such as fencing. Requirements for restrictions can be determined by predictions based on calculations, modeling or by field measurements. The FCC's OET Bulletin 65 (available on-line at www.fcc.gov/oet/rfsafety) provides information on predicting exposure levels and on methods for ensuring compliance, including the use of warning and alerting signs and protective equipment for workers.

(12) Transmission will be bases on fixed skew angle at 40 degrees to AMC-15 @105.05 deg W.L and skew angle 10 degrees to AMC-16 @ 85 deg W.L

(13) Digital transmission in the 28.4-28.6 GHz and 29.3-30.0 GHz is permitted if the input power spectral density into the antenna will not exceed 3.5 dBW/MHz.

(14) Operations, for both the fixed earth station and the earth station in-motion, will operate with an off-axis EIRP spectral density, under clear sky, in accordance to 47 C.F.R. Section 25.138.

(15) Operations of the earth station in-motion vehicle will record the vehicle location (latitude/longitude), transmit frequency, channel bandwidth, and satellite used shall be time annotated and maintained for a period of all testing. Records shall be recorded at time intervals no greater than every five minutes while the mobile transmitter is transmitting. The operator of the mobile transmitter shall make this data available upon request to a coordinator, fixed system operator, fixed-satellite service system operator, NTIA, or the Commission with 24 hours of the request.

(16) Operations of the earth station in-motion vehicle must meet one of the following antenna pointing error requirement: a) Each earth station in-motion transmitter shall maintain a pointing error of less than or equal to 0.2° between the orbital location of the target satellite and the axis of the main lobe of the in-motion mobile antenna, or b) Each earth station in-motion transmitter shall declare a maximum antenna pointing error that may be greater than 0.2° provided that the earth station in-motion vehicle does not exceed the off-axis eirp density limits in 47 C.F.R. Section 25.138 (a)(1), taking into account the antenna pointing error.

Special Conditions:

(17) Operation of earth station in-motion vehicle pursuant to condition 16 above a shall provide a certification from the equipment manufacturer stating that the antenna tracking system will maintain a pointing error of less than or equal to 0.2° between the orbital location of the target satellite and the axis of the main lobe of the in-motion vehicle antenna and that the antenna tracking system is capable of ceasing emissions within 100 milliseconds if the angle between the orbital location of the target satellite and the axis of the main lobe of the in-motion vehicle antenna exceeds 0.5°.

(18) Operation of the earth station in-motion vehicle must meet of one of the following cessation of emission requirements: All emissions from the in-motion vehicle shall automatically cease within 100 milliseconds if the angle between the orbital location of the target satellite and the axis of the main lobe of the in-motion vehicle antenna exceeds 0.5°, and the transmission shall not resume until such angle is less than equal to 0.2°.

(19) Operation of earth station in-motion vehicle shall automatically ceasing transmission upon the loss of synchronization or within 5 seconds upon loss of reception of the satellite downlink signal, whichever is the shorter timeframe.

(20) While the earth station in-motion vehicle is at halt/stationary location, the operator shall take all necessary measures to ensure that the antenna does not create potential exposure of humans to radiofrequency radiation in excess of the FCC exposure limits defined in 47 C.F.R. §§ 1.1307(b) and 1.1310 wherever such exposures might occur. Measures must be taken to ensure compliance with limits for both occupational/controlled exposure and for general population/uncontrolled exposure, as defined in these rule sections. Compliance can be accomplished in most cases by appropriate restrictions such as fencing. Requirements for restrictions can be determined by predictions based on calculations, modeling or by field measurements. The FCC's OET Bulletin 65 (available on-line at ww.fcc.gov/oet/rfsafety) provides information on predicting exposure levels and on methods for ensuring compliance, including the use of warning and alerting signs and protective equipment for workers.

(21) Any action taken or expense incurred as a result of operations pursuant to this experimental license is solely at Thales Avionics Inc., risk.

(22) Grant of this authorization is without prejudice to any determination that the Commission may make regarding pending or future Thales Avionics Inc., experimental applications

(23) This action is issued pursuant to Section 0.261 of the Commission's rules on delegated authority, 47 C.F.R. § 0.261, and is effective immediately

(24) Operation is NOT PERMITTED using the frequency band 28.6-29.3 GHz.