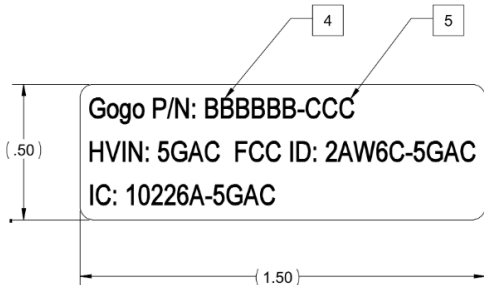
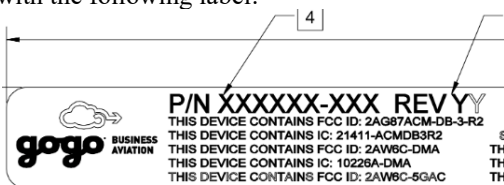


Applicant/Grantee	Gogo Business Aviation		
FCC ID:	2AW6C-5GAC		
Section 15.212 Modular Transmitters			
Request for Modular Approval	☐	Request for Limited Modular Approval	☒
	Requirements	EUT Conditions	Comply (Y/N)
Single Modular Approval Requirements			
1	The radio elements of the modular transmitter must have their own shielding. The physical crystal and tuning capacitors may be located external to the shielded radio elements.	The 5GAC aircard is enclosed in a metal clamshell. Key radio elements on the aircard have additional metal shielding on the printed circuit board. See external and internal 5GAC picture exhibits in the application.	Y
2	The modular transmitter must have buffered modulation/data inputs (if such inputs are provided) to ensure that the module will comply with Part 15 requirements under conditions of excessive data rates or over-modulation.	Communication to modular transmitter is buffered through USB, Ethernet, and discrete IO.	Y
3	The modular transmitter must have its own power supply regulation.	Module has its own power supply regulation. See Schematic for details.	Y
4	The modular transmitter must comply with the antenna and transmission system requirements of Sections 15.203, 15.204(b) and 15.204(c). The antenna must either be permanently attached or employ a "unique" antenna coupler (at all connections between the module and the antenna, including the cable). The "professional installation" provision of Section 15.203 is not applicable to modules but can apply to limited modular approvals under paragraph (b) of this section.	The 5GAC module is professionally installed into an LX5 cabinet by Gogo. Standard TNC cables are used between the LX5 and the antenna. The MB13 antenna is mounted to the underside of the aircraft. Only professional installers under NDA with Gogo are authorized to install Gogo's LX5 cabinet and MB13 antenna equipment on aircraft. See LX5 installation manual.	N
5	The modular transmitter must be tested in a stand-alone configuration, <i>i.e.</i> , the module must not be inside another device during testing for compliance with Part 15 requirements. Unless the transmitter module will be battery powered, it must comply with the AC line conducted requirements found in Section 15.207. AC or DC power lines and data input/output lines connected to the module must not contain ferrites, unless they will be marketed with the module (see	Module was tested in standalone configuration. See Test Report for details. The LX5 cabinet/5GAC module is powered from Aircraft DC power so Section 15.207 does not apply. Cabinets installed with 5GAC module adhere to FAA RTCA/DO-160 Section 21 Conducted Emissions limits.	Y

	Section 15.27(a)). The length of these lines shall be the length typical of actual use or, if that length is unknown, at least 10 centimeters to insure that there is no coupling between the case of the module and supporting equipment. Any accessories, peripherals, or support equipment connected to the module during testing shall be unmodified and commercially available (see Section 15.31(i)).		
6	The modular transmitter must be equipped with either a permanently affixed label or must be capable of electronically displaying its FCC identification number. <i>(A) If using a permanently affixed label, the modular transmitter must be labeled with its own FCC identification number, and, if the FCC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: "Contains Transmitter Module FCC ID: XYZMODEL1" or "Contains FCC ID: XYZMODEL1." Any similar wording that expresses the same meaning may be used. The Grantee may either provide such a label, an example of which must be included in the application for equipment authorization, or, must provide adequate instructions along with the module which explain this requirement. In the latter case, a copy of these instructions must be included in the application for equipment authorization.</i> <i>(B) If the modular transmitter uses an electronic display of the FCC identification number, the information must be readily accessible and visible on the modular transmitter or on the</i>	Gogo's label shown below is permanently affixed to the 5GAC and pdf documents with the label and label location are included in the application. 5GAC Label:  The LX5 cabinet containing the 5GAC is affixed with the following label: 	Y

	<i>device in which it is installed. If the module is installed inside another device, then the outside of the device into which the module is installed must display a label referring to the enclosed module. This exterior label can use wording such as the following:</i> <i>“Contains FCC certified transmitter module(s).” Any similar wording that expresses the same meaning may be used. The user manual must include instructions on how to access the electronic display. A copy of these instructions must be included in the application for equipment authorization.</i>		
7	The modular transmitter must comply with any specific rules or operating requirements that ordinarily apply to a complete transmitter and the manufacturer must provide adequate instructions along with the module to explain any such requirements. A copy of these instructions must be included in the application for equipment authorization.	Gogo does not offer the 5GAC aircard as a standalone product. Both the 5GAC and the LX5 cabinet are manufactured by Gogo. Gogo production installs the 5GAC aircard into the LX5 cabinet. Gogo provides an installation manual for our cabinets which is included in the application for equipment authorization. Gogo does not produce a User Manual containing operating or installation instructions related to the 5GAC aircard modem. The modem will only be used as part of Gogo’s Air to Ground Broadband System, which is professionally installed on aircraft and operates under Gogo’s software. Instructions related to disabling of the system are provide the aircraft pilots per FAA guidance.	Y
8	The modular transmitter must comply with any applicable RF exposure requirements in its final configuration.	The 5GAC module is professionally installed in the Gogo LX5 cabinet. The 5GAC is not sold as a standalone product. Both the module and the cabinet were tested and meet FCC/ISED requirements. The minimum permissible exposure distance is included in Gogo’s LX5 Installation manual. Every 5GAC module undergoes calibration during production that ensures transmit power complies with FCC/ISED grant limits. All cabinets in which the 5GAC module are installed undergo RF spot check testing in order to demonstrate continued adherence to FCC/ISED limits.	Y
A limited modular approval may be granted for single or split modular transmitters that do not comply with all of the above requirements, <i>e.g.</i>, shielding, minimum signaling amplitude, buffered modulation/data inputs, or power supply regulation, if the manufacturer can demonstrate by alternative means in the application for equipment authorization that the modular transmitter meets all the applicable Part 15 requirements under the operating conditions in which the transmitter will be used. Limited modular approval also may be granted in those instances where compliance with RF exposure rules is demonstrated only for particular product configurations. The applicant for certification must state how control of the end product into which the module will be installed will be maintained such that full compliance of the end product is always ensured.			

