



Triangle BioSystems
International

Simplicity in Neuro-Solutions

Date: October 09, 2017

Curtis-Straus, a Bureau Veritas Company
One Distribution Center Circle, #100
Littleton, MA 01460 USA

RE: Application for Limited Modular Radio Certification
FCC ID: 2AJQ2W11; IC: 22071-W11

Dear Curtis-Straus:

Triangle BioSystems International, a subsidiary of Harvard BioScience, Inc., is applying for limited modular radio transmitter certification for our Model F3050 (FCC ID: 2AJQ2W11; IC: 22071-W11) radio transmitter. The application is for a Class A device, pursuant to FCC 15.212 and RSS-100 Issue 5, Annex D.

Model F3050 is a module that will only be installed at the manufacturing site to Triangle Biosystems products. The table below presents the summary of compliance with CFR47 Part 15.212.

Modular Approval Requirements		Yes	No	Remarks
15.212(a)(1)(i)	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.		X	Demonstrated compliance of the module without a shield. Radio module only used in TBSI products.
15.212(a)(1)(ii)	The modular transmitter must have buffered modulation/data inputs (if such inputs are provided) to ensure	X		



Triangle BioSystems
International

Simplicity in Neuro-Solutions

	that the module will comply with part 15 requirements under conditions of excessive data rates or over-modulation.			
15.212(a)(1)(iii)	The modular transmitter must have its own power supply regulation.		X	The end product or host device will provide an external power supply regulation to the radio module.
15.212(a)(1)(iv)	The modular transmitter must comply with the antenna and transmission system requirements of §§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 §15.203 is not applicable to modules but can apply to limited modular approvals under paragraph (b) of this section.	X		



Triangle BioSystems
International

Simplicity in Neuro-Solutions

Modular Approval Requirements		Yes	No	Remarks
15.212(a)(1)(v)	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 §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 §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 ensure 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 §15.31(i)).		X	The radio module is only for installation in TBSI products and requires external DC power. Radio Module was tested on a representative TBSI product. The Radio Module has no AC connection.
15.212(a)(1)(vi)	The modular transmitter must be equipped with either a permanently affixed label or must be capable of electronically displaying its FCC identification number.	X		Label affixed on the host TBSI product that contains the Radio Module.



Triangle BioSystems
International

Simplicity in Neuro-Solutions

15.212(a)(1)(vii)	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.	X		
15.212(a)(1)(viii)	The modular transmitter must comply with any applicable RF exposure requirements in its final configuration.	X		The Radio Module complies.

Modular Approval Requirements		Yes	No	Remarks
15.212(b)	A limited modular approval may be granted for single or split modular transmitters that do not comply with all of the above requirements, e.g., 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	X		



Triangle BioSystems
International

Simplicity in Neuro-Solutions

	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.			
--	--	--	--	--

Sincerely,

James Morizio, PhD
General Manager of Triangle BioSystems International
Director of Research and Development, Harvard Bioscience Inc.

Office: (919) 361-2663
Fax: (919) 544-3061
2224 Page Rd. Suite 108
Durham, NC 27703

www.trianglebiosystems.com

sales@trianglebiosystems.com
support@trianglebiosystems.com