Federal Communication Commission Equipment Authorization Division, Application Processing Branch 7435 Oakland Mills Road Columbia, MD 21046

<2022-05-10>

Attn: Office of Engineering and Technology Subject: Attestation Letter regarding UNII devices

FCC ID: 2AMTQALUM22

Software security questions and answers per KDB 594280 D02 U-NII Device Security v01r03:

S	Security v01r03:				
	Software Security description – General Description				
1	Describe how any software/firmware update will be obtained, downloaded, and installed. Software	We do not release the firmware on our website for downloading. Our			
	that is accessed through manufacturer's website or device's management system, must describe the different levels of security.	direct host manufacturer (OEM) can request the firmware from us and it will be made available via secure server.			
2	Describe all the radio frequency parameters that are modified by any software/firmware without any hardware changes. Are these parameters in some way limited, such that, it will not exceed the authorized parameters?	Radio frequency parameters are limited by US regulatory domain and country code to limit frequency and transmit power levels. These limits are stored in non-volatile memory by the module manufacturer at the time of production. They will not exceed the authorized values.			
3	Describe in detail the authentication protocols that are in place to ensure that the source of the software/firmware is legitimate. Describe in detail how the software is protected against modification	The firmware is installed on each single module during manufacturing process. The correct firmware is verified and installed by the module manufacturer. In addition, the firmware binary is encrypted using open SSL encryption and the firmware updates can only be stored in non-volatile memory when the firmware is authenticated. The encryption key is known by the			

		module manufacturer only.				
4	Describe in detail the verification protocols in	The process to flash a new firmware				
	place to ensure that installed software/firmware is	is using a secret key to decrypt the				
	legitimate	firmware, only correct decrypted				
		firmware is stored in non-volatile				
		memory (see #3).				
5	For a device that can be configured as a master	The device ensures the compliance				
	and client (with active or passive scanning),	by checking the configured				
	explain how the device ensures compliance for	parameter and operation values				
	each mode? In particular if the device acts as	according to the regulatory domain				
	master in some band of operation and client in	and country code in each band.				
	another; how is compliance ensured in each band	The device configured as Client				
	of operation?	without radar detection capability				
	Software Security description – Third-P					
1	Explain if any third parties have the capability to	No, third parties don't have the				
	operate a US sold device on any other regulatory	capability to access and change				
	domain, frequencies, or in any manner that is in	radio parameters. US sold modules				
	violation of the certification.	are factory configured to US.				
2	Describe, if the device permits third-party	N/A				
	software or firmware installation, what					
	mechanisms are provided by the manufacturer to					
	permit integration of such functions while					
	ensuring that the RF parameters of the device					
	cannot be operated outside its authorization for					
	operation in the U.S. In the description include					
	what controls and/or agreements are in place with					
	providers of third-party functionality to ensure					
	the devices' underlying RF parameters are					
	unchanged and how the manufacturer verifies the					
	functionality.					
3	For Certified Transmitter modular devices,	N/A				
	describe how the module grantee ensures that					
	host manufacturers fully comply with these					
	software security requirements for U-NII devices.					
	If the module is controlled through driver					
	software loaded in the host, describe how the					
	drivers are controlled and managed such that the					
	modular transmitter RF parameters are not					
	modified outside the grant of authorization.					
	Software Security description – USER CONFIGURATION GUID					
1	Describe the user configurations permitted	There is no user configuration GUI.				
	through the UI. If different levels of access are					
	permitted for professional installers, system					

	integrators or end-users, describe the differences.					
	a.	What	parameters are viewable and	There is no user configuration GUI.		
		config	gurable by different parties?			
	b. What parameters are accessible or modifiable			This device is not subject to		
		to the professional installer?		professional installation		
		i.	Are the parameters in some way			
			limited, so that the installers will not			
			enter parameters that exceed those			
			authorized?			
		ii.	What controls exist that the user			
			cannot operate the device outside its			
			authorization in the U.S.?			
	c.		configuration options are available to	The end user is not able to		
		the en	d-user?	configure any parameters related to		
				the devices radio		
		i.	Are the parameters in some way	The parameters can only be		
		1.	limited, so that the installers will not	changed remotely within the limits		
			enter parameters that exceed those	of country code US.		
			authorized?	of country code est.		
		ii.	What controls exist that the user	The country code and regulatory		
			cannot operate the device outside its	domain control do limit all the		
			authorization in the U.S.?	parameters set		
	d.	Is the	country code factory set? Can it be	The country code is factory set and		
		change	ed in the UI?	is never changed by UI.		
		i.	If so, what controls exist to ensure	The country code is factory set and		
			that the device can only operate	is never changed by UI		
			within its authorization in the U.S.?			
	e.	What	are the default parameters when the	At each boot up the country code		
		device	e is restarted?	and the antenna gain are read from		
				the non-volatile memory, those		
				values are configured during		
				production.		
2		Can the radio be configured in bridge or mesh		Not supported		
	mode? If yes, an attestation may be required.		•			
			formation is available in KDB			
	1		on 905462 D02.			
3			ce that can be configured as a master	Not Supported		
			(with active or passive scanning), if			
	thi	s is use	r configurable, describe what controls			

	exist, within the UI, to ensure compliance for	
	each mode. If the device acts as a master in some	
	bands and client in others, how is this configured	
	to ensure compliance?	
4	For a device that can be configured as different	The device does not support these
	types of access points, such as point-to-point or	modes/features.
	point-to-multipoint, and use different types of	
	antennas, describe what controls exist to ensure	
	compliance with applicable limits and the proper	
	antenna is used for each mode of operation. See	
	Section 15.407(a).	

Sincerely,

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