



Ford Motor Company
 Fairlane Business Park 2
 17425 Federal Drive
 Allen Park, MI 48101

The information provided in this document applies to the following device(s)

Model	FCC ID:
SG5PHX	KMH-SG5PHX

Applications for equipment authorization for non-SDR transmitters that have software configuration control for radio parameters, or other technical parameters as reported to the Commission to ensure compliance, must provide a technical description of how such control is implemented to prevent third-party modification and to ensure the device only operates within the parameters of the grant of authorization.

If the device supports any of the options for client devices or other devices as discussed in KDB 594280, the operational description must include how the device permits such operation and what controls are included to ensure continued compliance.

If the device depends on supplemental input to determine its location for ensuring compliance the operation of this mode must also be clearly included in the supporting documentation.

Software Security Description – KDB 594280 D02v01r03 Section II

General Description

1. Describe how any software / firmware update will be obtained, downloaded, and installed. Software that is accessed through manufacturer’s website or device’s management system, must describe the different levels of security as appropriate.	Software updates will be obtained from a secure server owned by Ford via a TLS encrypted connection, or directly from the dealer via a secure wired connection. All software on the module must be signed with a Ford private key before it is allowed to execute. No software can be installed to the module without going through the Ford code signing process.
2. Describe the rf 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 RF characteristics?	RF parameters including TX power can be adjusted in the firmware. These settings are not exposed to any third party. They can only be changed by chip supplier when specifically requested by Ford, These settings have been fixed prior to certification, and these parameters will not be changing moving forward.
3. Describe in detail the authentication protocols that are in place to ensure that the source of the RF related software / firmware is legitimate. Describe in detail how the software is protected against modification.	All software on the module must be signed with a Ford private key before it is allowed to execute. No software can be installed to the module without going through the Ford code signing process.
4. Describe in detail any encryption methods used to support the use of legitimate RF related software/firmware.	RF related software is one component of the Ford compiled software and must be signed with Ford private key before it is allowed to execute.
5. For a device that can be configured as a master and client (with active or passive scanning), explain how the device ensures compliance for each mode? If the device acts as master in some band of operation and client in another; how is compliance ensured in each band of operation?	The device is WFA certified for AP and STA mode on select channels in the 2G and UNII bands. This product has been tested in both the AP and STA modes over all firmware enabled channels in order to demonstrate compliance. Firmware prevents the device from operating in mode+channel combinations not tested. The device only operates as a passive DFS client device in the STA mode. DFS channels are not employed in the AP mode.



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Third-Party Access Control

1.	Explain if any third parties have the capability to operate a US sold device on any other regulatory domain, frequencies, or in any violation of the device's authorization.	Third parties do not have the capability to operate in any manner that is violation of the certification. All software on the module must be signed with a Ford private key before it is allowed to execute. No software can be installed to the module without going through the Ford code signing process.
2.	Describe, if the device permits third-party 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.	Third Parties don't have any capability to install or remove anything from the device. All software on the module must be signed with a Ford private key before it is allowed to execute. No software can be installed to the module without going through the Ford code signing process.
3.	For Certified Transmitter modular devices, describe how the module grantee ensures that hosts manufactures 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 parameters are not modified outside the grant of authorization.	This device is not a modular device.



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SOFTWARE CONFIGURATION DESCRIPTION – KDB 594280 D02v01r02 Section III

USER CONFIGURATION GUIDE

1.	Describe the user configurations permitted through the UI. If different levels of access are permitted for professional installers, system integrators or end-users, describe the differences.	Configuration cannot be changed by any end user or professional installer. All configurations are compiled in the software code at the time of creating software build.
a)	What parameters are viewable and configurable by different parties?	No radio RF parameters are end user modifiable.
b)	What parameters are accessible or modifiable to the professional installer or system integrator?	No radio RF parameters are installer or integrator modifiable.
(1)	Are the parameters in some way limited, so that the installers will not enter parameters that exceed those authorized?	Installers do not have access to change any radio RF related parameters.
(2)	What controls exist that the user cannot operate the device outside its authorization in the U.S.?	Default country code is set in the factory and no UI is provided for modification.
c)	What parameters are accessible or modifiable by the end-user?	No radio parameters are modifiable, and the channel cannot be configurable by the end user.
(1)	Are the parameters in some way limited, so that the installers will not enter parameters that exceed those authorized?	Installers do not have access to change any radio RF related parameters.
(2)	What controls exist that the user cannot operate the device outside its authorization in the U.S.?	No radio RF parameters are end user modifiable.
d)	Is the country code factory set? Can it be changed in the UI?	Default country code is set in the factory and no UI is provided for modification.
(1)	If it can be changed, what controls exist to ensure that the device can only operate within its authorization in the U.S.?	It cannot be changed.
e)	What are the default parameters when the device is restarted?	Always FCC compliant.
2.	Can the radio be configured in bridge or mesh mode? If yes, an attestation may be required. Further information is available in KDB Publication 905462 D02.	No.



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3.	For a device that can be configured as a master and client (with active or passive scanning), if this is user 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?	The device is WFA certified for AP and STA mode on select channels in the 2.4GHz and 5GHz bands. This product has been tested in both the AP and STA modes over all firmware enabled channels in order to demonstrate compliance. Firmware prevents the device from operating in mode+channel combinations not tested. The device only operates as a passive DFS client device in the STA mode. DFS channels are not employed in the AP mode.
4.	For a device that can be configured as different types of access points, such as point-to-point or 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))	This device does not support point-to-point or point-to-multipoint operation. It is strictly a standard access point with no connection to other Aps on only the reported channels and bands

Dated: **8 June 2023**

By:



(Signature)

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