

Date: December 14, 2021

Office of Engineering and Technology  
 Laboratory Division  
 Equipment Authorization Branch  
 Federal Communications Commission Laboratory  
 7435 Oakland Mills Road  
 Columbia, MD 21046

Subject: Application for Class 2 Permissive Change to FCC Authorized Transceiver with FCC ID: AZ489FT7087

Dear Sir/Madam,

A permissive change is requested for the subject transceiver which is marketed in the United States and elsewhere.

**A. DESCRIPTION OF PRODUCT CHANGES:**

- 1) Replacing the current WLAN/BT IC and its supporting circuitries with new replacement and supporting design optimization circuitries. The components changes are made within the Bluetooth (BT)/ WLAN circuitries as below:
  - i) BT/WLAN chipset for BT/WLAN functionality  
 IC001201A01 has 2 Vendor P/N listed; 88W8987-A2-EAHE/AZ from NXP Semiconductor and 88W8987-A2-EAH2E005-P123 from Marvell Semiconductor. Both Vendor P/N are referring to the same chipset/part. Marvell BT/Wifi business was acquired by NXP.
  - ii) Inclusion of 38.4MHz temperature compensated crystal oscillator (TCXO) for BT/WLAN IC reference clock
  - iii) BT/WLAN bandpass filter (passive component) change to cater for new BT/WLAN IC requirement
  - iv) Value change on the passive components (capacitors, resistors and inductors)
  
- 2) Replacing the components on the controller section (non RF) to support the WLAN/BT IC changes. The changes are as below:
  - i) Inclusion of PM823HN PMIC for power management
  - ii) 3.3V LDO change to cater for new BT/WLAN IC requirement
  - iii) 3.6V Switching Regulator change to cater for new BT/WLAN IC requirement
  - iv) Value change on the passive components (capacitors, resistors and inductors)
  
- 3) Added as dual source with the existing parts due to multiple supply constraints with the current parts lead time increased to 99 weeks which causing immediate line down. There is no change to the radio electrically and the replacement parts are pin-to-pin comparable with the current parts.

Old Part Number	New Part Number	Description	Where Used
4870370A72	CR001795A01	Zener Diode (Non RF)	Peripheral GCAI circuit (VBUS), as a switch
5109522E84	LD000335A01	Buffer (Non RF)	Controller Connector, as a buffer



5103535B53	LD000329A01	Inverter (Non RF)	Controller GCAI schematic, a logic inverter
51009345001	LD000331A01	NOR Gate (Non RF)	Controller Low Frequency pairing circuit, as a logic gate
4813970A59	CR002094A01	P-Channel FET	Tx Automatic Level Circuit, as a switch

**B. PERFORMANCE DIFFERENCES:**

There is no degradation observed on EMC for LMR, BT and BTLE, except WIFI 2.4GHz has degraded as compared to the previous filing but the data continues to be compliant to the FCC limits.

No degradation found on the EME.

**C. CONCLUSION:**

This radio continues to meet all FCC emissions requirements for which authorization was granted. However, the EMC has degraded compared to those originally reported, thus this change does meet requirements of a Class-2 Permissive Change.

Sincerely,

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