Espressif Systems (Shanghai) Co.,Ltd.
Modular Transmitter Approval Request

Federal Communications Commission
Equipment Authorization Branch
7435 Oakland Mills Road
Columbia, MD 21046

Company name: Espressif Systems (Shanghai) Co.,Ltd.

FCC ID: 2AC7Z-ESP32MINII

Gentlemen,

In accordance with 47CFR 15.212 Modular Transmitters and KDB 996369 D01 'Module Certification Guide v01r04'. FCC ID 2AC7Z-ESP32MINII has been examined against the following requirements.

Items to be covered by Single modular transmitters.

Requirement per 15.212 and KDB 996369 D01 'Modular Certification Guide v02	**Explanation from Grantee** (do not write yes/no, but explain why product complies/how it is achieved)
1. The radio elements must have the radio frequency circuitry shielded. Physical components and tuning capacitor(s) may be located external to the shield, but must be on the module assembly	The module has its own RF shielding. Please see external photo.pdf
2. The module must have buffered modulation/data inputs to ensure that the device will comply with Part 15 requirements with any type of input signal	The modular has buffered data inputs, it is integrated in chip ESP32. Please see schematic.pdf
3. The module must contain power supply regulation on the module	All power lines derived from the host device are regulated before energizing other circuits internal to the ESP32. Please see schematic.pdf
4. The module must contain a permanently attached antenna, or contain a unique antenna connector, and be marketed and operated only with specific antenna(s), per Sections 15.203, 15.204(b), 15.204(c), 15.212(a), 2.929(b)	The ESP32-MINI-1U meet the FCC antenna requirements. ESP32-MINI-1U is an external antenna.
5. The module must demonstrate compliance in a stand-alone configuration	The ESP32-MINI-1U was tested in a stand-alone configuration via com serial interface. Please see test set-up photo.pdf
6. The module must be labelled with its permanently affixed FCC ID label, or use an electronic display (See KDB Publication 784748 about labelling requirements)	The label position of ESP32-MINI-1U is clearly indicated. If the FCC ID of the module cannot be seen when it is installed, then the host label must include the text: Contains FCC ID: 2AC7Z-ESP32MINII. Please see the label.pdf
7. The module must comply with all specific rules applicable to the transmitter including all the conditions provided in the integration instructions by the grantee	The ESP32-MINI-1U is compliant with all applicable FCC rules. Detail instructions are given in the Users Manual. Please see user manual.pdf

8. The module must comply with RF exposure requirements	The ESP32-MINI-1U is approved to comply with the applicable RF exposure requirement, please see the MPE evaluation with 20cm as the distance restriction.

Items to be covered by Split modular transmitters.

Requirement per 15.212 and KDB 996369 D01 'Modular Certification Guide v02	**Explanation from Grantee** (do not write yes/no, but explain why product complies/how it is achieved)
9. Split modular transmitters must meet all the requirements of a single modular in above item1 and 5 for single modular approval requirements.	
10. Only the radio front end must be shielded. The physical crystal and tuning capacitors may be located external to the shielded radio elements. The interface between the split sections of the modular system must be digital with a minimum signaling amplitude of 150 mV peak-to-peak.	
11. Control information and other data may be exchanged between the transmitter control elements and radio front end.	
12. The sections of a split modular transmitter must be tested installed in a host device(s) similar to that which is representative of the platform(s) intended for use.	
13. Manufacturers must ensure that only transmitter control elements and radio front end components that have been approved together are capable of operating together. The transmitter module must not operate unless it has verified that the installed transmitter control elements and radio front end have been authorized together. Manufacturers may use means including, but not limited to, coding in hardware and electronic signatures in software to meet these requirements, and must describe the methods in their application for equipment authorization.	

A limited modular approval (LMA) may be granted for single or split modular transmitters that comply partially with requirements above.

Name: Mia Zhou

Date: 2021.8.18

Title:/Certification Manager

Signature of applicant