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**Date:** 17 March 2025

**To:**

Federal Communications Commission  
7435 Oakland Mills Road  
Columbia, Maryland 21046  
USA

**RE: Class II Permissive Change for 4RF Limited. FCC ID: UIPSQ928M141**

This is a Class II Permissive Change request for 4RF Limited, FCC ID: **UIPSQ928M141**, Model: **SQ928M141**, Product Name: **Apris SR+**. The SQ928M141 was originally certified in April 2019 under 47 CFR Part 24, 90 and 101. Changes have been made to the RF transmitter and receiver synthesizers and demodulator circuits which include non pin-for-pin compatible components. Provisions exist under FCC Notification 202109-001 (FCC KDB 388624 D02 [C2PCPX]) for the use of non pin-for-pin compatible components provided the conditions of FCC KDB 178919 are met. See attached.

The SQ928M141 has been re-evaluated to, and found to be compliant with, the requirements of 47 CFR Part 24, 90, 101 and FCC KDB 178919. The operating frequency range, output power, occupied bandwidth and spurious emissions have not degraded from the original authorization. Since the output power has not increased, no further RF Exposure considerations should be required. The SQ928M141 continues to operate within the parameters that it was originally certified and as such the 731 Form being submitted with this Change Request only reflects the minor differences in the measured bandwidth and emissions designator.

Should there be any questions or concerns with this filing, please feel free to contact me.

Sincerely,

**Art Voss, P.Eng., BS EE**  
**Technical Manager**



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# PXFCC C2PCPX Procedure

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Revision 1

Alan Turner

July 25, 2024

Replacement of the Aprisa SR+ synthesizer is not covered under § 2.1043 [1] as this component is not pin-for-pin compatible as defined in KDB 178919 [2] section D, thereby requiring a new grant of certification:

Part substitution – electrically identical parts may be substituted. An initial evaluation of test results will determine if a Class I or Class II permissive change application is required. A chip replacement of a portion of the transmitter that performs some sub-function such as an amplifier chip, oscillator chip, or frequency determining chip, may be considered a Class II permissive change under the following conditions; however, replacement of a chip that constitutes a complete transmitter shall require a new grant of certification (FCC ID):

- 1) The new chip component is pin-for-pin compatible.
- 2) The new chip has the same basic function as the old chip, from an external perspective (internal circuitry may differ).
- 3) No change in radio parameters has occurred.
- 4) The same conditions apply when a small area (approximately the same area as the chip) of the PCB is replaced with an equivalent chip.

However, provisions exist under FCC Notification 202109-001 [3], to use non-pin-for-pin compatible components under specific circumstances:

...

Within the provisions of § 2.1043 [1], non-substantive1 modifications are limited to the electrical/electronic components and the Printed Circuit Board (PCB) layout of a transmitter (or of the transmitter portion of the device) may be permitted as a Class II Permissive Change. For instance, to accommodate non-pin-to-pin compatible integrated circuits.

...

- 1) The requirements of § 2.1043 are fulfilled, i.e., the device's block functions for the fundamental frequency, primary modulator circuit, maximum power, or field strength ratings shall remain unchanged.
- 2) Transmitter PCB layout and parts changes are only permitted if there is no change in identifying a device's form, functional specification, as initially granted or previously approved under a Class II permissive change.
- 3) PCB changes are limited to non-substantive modifications layout changes to the same size physical circuit board previously granted.
- 4) C2PCPX is not permitted to add, remove, augment, or change capabilities, such as transmitters, increased bandwidth, additional rule parts, bands, etc.

5) In the PAG (Pre-Approval Guidance) submission for item C2PCPX, the applicant shall provide complete information on testing demonstrating that the proposed changes for fundamental emissions are unchanged within the normal, acceptable tolerances and out-of-band; emissions do not exceed the appropriate limits.

The PAG submission shall include all applicable test reports and internal photos.

6) The modified device shall not be marketed under the existing grant of certification before confirmation that the C2PCPX PAG is approved and granted.

7) Software Defined Radio (SDR) grants that use the C2PCPX procedure are not permitted to make subsequent Class III permissive changes.

8) The C2PCPX PAG procedure has no impact on the provisions of V) of this publication for non-SDR software-only changes; thus, adding an equipment class when related to rule changes is still permitted.

9) Class I permissive changes are not permitted under this C2PCPX procedure.

The Pre-Approval Guidance (PAG) procedure code for Class 2 Permissive change (C2PC) is assigned within KDB 388624 D02 [5] as C2PCPX, which effectively applies an administrative waiver to the requirement of pin-for-pin component change. There are no fixed requirements identified under C2PCPX and FCC guidance is provided to the certifying TCB on a case-by-case basis.

As C2PCPX is on the Pre-Approval Guidance List, the TCB shall use procedure 'III. TCB PRE-APPROVAL GUIDANCE' within KDB 388624 D01 Pre-Approval Guidance [4]. This requires that the manufacturer submit evidence that all of the relevant requirements of Notification 202109-001 [3] have been met, to the TCB, who will forward these to the FCC.

## References

- [1] 47CFR Part 2 Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
- [2] KDB 178919 Permissive Change Policy v06
- [3] Notification 202109-001 Class II Permissive Change for PCB and Part Modification and PAG C2PCPX
- [4] KDB 388624 D01 Pre-Approval Guidance v11r04
- [5] KDB 388624 D02 Pre-Approval Guidance List v18r03
- [6] KDB 502150 D01 Certification Under Waiver v01