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Module Integration Instructions

FCC ID: QCI-PQXMOD1, IC: 4302A-PQXMOD1

Dear Application Examiner:

SMART Technologies Inc. is seeking limited modular approval for SMART PQX Pen BLE radio module **Model: PQXMOD1, FCC ID: QCI-PQXMOD1, IC: 4302A-PQXMOD1**. Per KDB 996369, the integration instructions for the radio module within the host product are described below:

- 2.2 List of Applicable Rules:** The radio module complies with FCC Part 15.247 and RSS-247
- 2.3 Summarize the specific operational use conditions:** The PQXMOD1 radio module is specifically designed and intended for portable application within the host product: SMART QX Series Pen, Model: PQX-1. The radio module is not intended for sale as a stand-alone product. The SMART QX Series Pen is a handheld accessory intended for use in conjunction with SMART QX Series Interactive Flat Panel (IFP) displays. The SMART QX Series IFP displays are intended for indoor use only in commercial and educational environments. The PQXMOD1 radio module must not be co-located or operated in conjunction with any other antenna or transmitter.
- 2.4 Limited Module Procedures:** The PQXMOD1 radio module does not include its own RF shielding. The radio has been tested in a stand-alone configuration and complies with FCC Part 15.247 and RSS-247. The radio has also been tested within the host product: QX Series Pen, Model: PQX-1. The host product is battery powered, so AC Powerline Conducted Emissions does not apply. Spurious Radiated Emissions testing was completed for the host product. The results of the host product testing demonstrate compliance for the radio module when installed in the host product.
- 2.5 Trace Antenna Designs:** Not applicable.
- 2.6 RF Exposure Considerations:**
- 1) This equipment is intended for portable / handheld RF exposure condition. When integrated within the host product, the antenna is located 0.5 cm from the user's hand.
 - 2) This equipment complies with FCC and ISED radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

2.7 Antennas:

Type	Gain	Impedance	Application
Multilayer Chip Antenna (MCA)	3.0 dBi	50 Ω	Fixed

When integrated within the host product, the antenna is permanently attached and cannot be replaced.

2.8 Label and Compliance Information:

- The labeling requirements are satisfied with e-labeling included with the SMART QX Series IFP displays. The e-label identifies the SMART QX Series Pen, Model: PQX-1 and includes the following statements:

Contains FCC ID: QCI-PQXMOD1

Contains IC: 4302A-PQXMOD1

Additionally, the radio identifiers will be applied in user documentation that ships with the PQX-1 pen and product packaging.

- The following statements apply to the radio module and must be included in the user documentation for the host product:

Contains FCC ID: QCI-PQXMOD1

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Contains IC: 4302A-PQXMOD1

This device complies with RSS-247 of the Innovation, Science and Economic Development Canada Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Contient IC: 4302A-PQXMOD1

Cet appareil est conforme à la norme ISSED CNR-247 pour les appareils radio agréés.

Son fonctionnement est soumis aux deux conditions suivantes:

1. le dispositif ne doit pas produire de brouillage préjudiciable, et
2. ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

- 2.9 Information on test modes and additional test requirements:** The host product is tested with the PQXMOD1 radio module installed. The radio operation and test modes are controlled by RF test software on a remote laptop connected via interface board.
- 2.10 Additional test, Part 15 Subpart B disclaimer:** The PQXMOD1 radio module is only FCC authorized for the specific rule parts (15.247 and RSS-247) listed on the FCC grant and ISSED certificate. The host product, containing unintentional-radiator digital circuitry, complies with Part 15 Subpart B and ICES-003 with the radio module installed.
- 2.11 Note EMI Considerations:** D04 Module Integration Guide has been considered as “best practice” for RF design engineering testing and evaluation of non-linear interactions which can generate additional non-compliant limits due to module placement to host components or properties.
For standalone mode, D04 Module Integration Guide was referenced, and simultaneous mode considered for the host product to confirm compliance.
- 2.12 How to make changes:** Only the Grantee is permitted to make permissive changes. The Grantee may seek permissive changes to permit use of the radio module within additional SMART host products following the same procedure as identified in 2.4.
Each host product model will require Spurious Radiated Emissions and conducted output power verification. A C2PC will be completed for the integration into additional host models.

Please contact me if you have additional questions. Your attention to this matter is greatly appreciated.

Sean MacKellar

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SMART Technologies Inc.