

Module integration instruction

Section 2.2: List of applicable FCC rules

FCC Part 15.247,

FCC Part 2.1093 (SAR).

Section 2.3: Summarize the specific operational use conditions

No restrictions have been imposed for this handheld device, per its SAM Nozzle Operator Instructions. The transmitter and antenna are encapsulated inside the assembled device, as sold to the customer.

Section 2.4: Limited module procedures

The module limiting condition, as I understand it, is that the modular transmitter was tested (along with its affixed antenna) as part of a final, assembled product, fully encapsulated and inaccessible. To this end, per the AB 6055 – PAG for MODLIM:

“Regarding assembly and installation, notes have been included in the applicable drawings to ensure that this radio module, as covered under FCC ID 2A679-XBPSX6065, will only be used in the designated 6055 SAM Smart Nozzle. Specifically, the relevant drawing for the radio module features a note that states: FCC ID 2A679-XBPSX6065 only applies to this module, combined with the 6065 antenna assembly (D49445), when used in the 6055 SAM Smart Nozzle. A corresponding note is also included in the antenna assembly’s drawing: FCC ID 2A679-XBPSX6065 only applies when this antenna assembly is combined with the Digi XBee PRO SX radio module (B49444) for use in the 6055 SAM Smart Nozzle.”

Additionally, per Section 1 of the SAM Nozzle Operator Instructions:

“The following is intended to provide the basic instructions for installation, operation and maintenance of the Akron Brass SAM™ SMART NOZZLE with N2P Technology, and to assist in attaining the best possible performance from the unit. IMPORTANT: PLEASE READ THESE INSTRUCTIONS CAREFULLY, NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS, AND CAUTIONS. USE THIS PRODUCT CORRECTLY, AND WITH CARE FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE OR PERSONAL INJURY AND WILL INVALIDATE THE WARRANTY!”

In other words, to ensure the module limiting conditions are satisfied, controls have been implemented in the assembly and installation of the device in question (while the device is in the possession of the manufacturer), and a deterrent—the voiding of the warranty—has been established to help dissuade the customer from tampering with this costly device. An additional deterrent is that this device is used in genuine life-and-death situations, so it is in the customer’s best interest not to tamper with it or deviate from the standard operating procedures.

Section 2.5: Trace antenna designs

Not applicable.

Section 2.6: RF exposure considerations

Regarding RF exposure information, details of the application conditions are captured in the SAM Nozzle Operator Instructions and the AB 6055 – PAG for MODLIM. The AB 6055 is a firefighting handline nozzle. Firefighters use this nozzle in a similar manner to a typical nozzle when combatting a fire or related emergency. Details of the electrical characteristics associated with this device are captured in the SAM Nozzle Operator Instructions, a draft of which has been included with this application. The reported SAR value has been added to the updated SAM Nozzle Operator Instructions.

Section 2.7: Antennas

Per material provided with this application, this device features a custom PCB trace antenna affixed to the radio module via a 50 mm U.FL-to-U.FL coaxial cable. The assembly process is covered in previously submitted (and reattached) drawing AB 6055 Assembly – D49374_02.pdf. Again, this affixed antenna is fully encapsulated in the nozzle housing during the device's manufacturing assembly process, leaving no separate antenna installation required for the device on the part of the end customer.

Section 2.8: Label and compliance information

This is addressed by the previously submitted (and reattached) document AB 6055 - Label and Location - FCC and IC - External.pdf. The FCC ID (and IC ID) is also included in the SAM Nozzle Operator Instructions.

Section 2.9: Information on test modes and additional testing requirements

To support the EMC and SAR testing, a test mode version of the device's firmware was created to provide continual radio transmission. This test mode is not functional and cannot be initiated in the manufactured product that the end customer receives.

Section 2.10: Additional testing, Part 15 Subpart B disclaimer

The applicable FCC (and ISDE) notices have been provided via the SAM Nozzle Operator Instructions, which have been reattached to this e-mail (modified to now include the reported SAR value, per Section 2.6).

Section 2.11: Note EMI Considerations

FCC document 996369 D04 MODULAR TRANSMITTER INTEGRATION GUIDE GUIDANCE FOR HOST PRODUCT MANUFACTURERS was referenced and followed to help ensure device compliance.

Section 2.12: How to make changes

The device is not to be used in a different manner than what is being granted, so contact information for the host manufacturer is not deemed to be necessary.