



Becton, Dickinson and Company

Pyxis Pro

FCC 2.1093:2025

RFID

Report: CRDN1144.2, Issue Date: September 3, 2025



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CERTIFICATE OF EVALUATION

Last Date of Evaluation: September 3, 2025
Becton, Dickinson and Company
EUT: Pyxis Pro

RF Exposure Evaluation

Standards

Specification	Method
FCC 2.1093:2025	FCC 447498 D01 General RF Exposure Guidance v06

Results

Method Clause	Description	Applied	Results	Comments
4.3.1	SAR Test Exclusion	yes	Compliant	None

Deviations From Evaluation Standards

None

Approved By:



Donald Facteau, Process Architect

Product compliance is the responsibility of the client; therefore, the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test. This report reflects only those tests from the referenced standards shown in the certificate of test. It does not include inspection or verification of labels, identification, marking or user information. As indicated in the Statement of Work sent with the quotation, Element's standard process is to always use the latest published version of the test methods even when earlier versions are cited in the test specification. Issuance of a purchase order was de facto acceptance of this approach. Otherwise, the client would have advised Element in writing of the specific version of the test methods they wanted applied to the subject testing

REVISION HISTORY



Revision Number	Description	Date (yyyy-mm-dd)	Page Number
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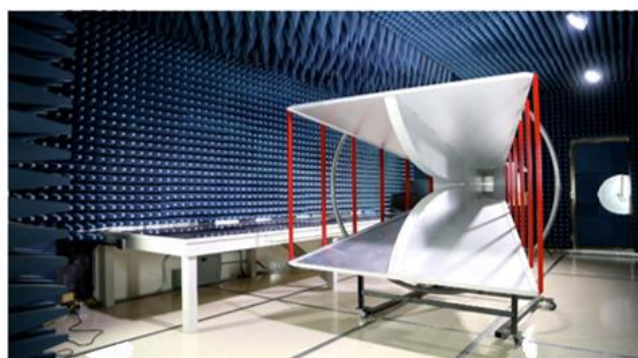
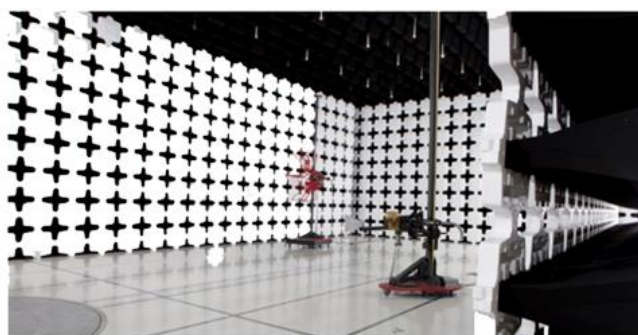
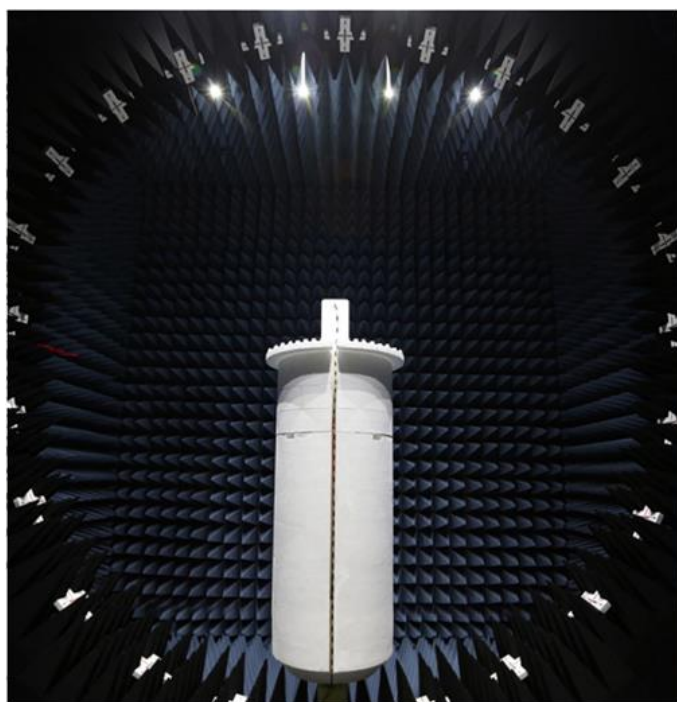
FACILITIES

Testing was performed at the following location(s)

	Location	Labs ⁽¹⁾	Address	A2LA ⁽²⁾	ISED ⁽³⁾	BSMI ⁽⁴⁾	VCCI ⁽⁵⁾	CAB	FDA ⁽⁶⁾
☒	California	OC01-17	41 Tesla Irvine, CA 92618 (949) 861-8918	3310.04	2834B	SL2-IN-E-1154R	A-0029	US0158	TL-55
☐	Minnesota	MN01-11	9349 W Broadway Ave. Brooklyn Park, MN 55445 (612) 638-5136	3310.05	2834E	SL2-IN-E-1152R	A-0109	US0175	TL-57
☐	Oregon	EV01-12	6775 NE Evergreen Pkwy #400 Hillsboro, OR 97124 (503) 844-4066	3310.02	2834D	SL2-IN-E-1017	A-0108	US0017	TL-56
☐	Washington	NC01-05	19201 120th Ave NE Bothell, WA 98011 (425) 984-6600	3310.06	2834F	SL2-IN-E-1153R	A-0110	US0157	TL-67
☐	Offsite	N/A	See Product Description	N/A	N/A	N/A	N/A	N/A	N/A

See data sheets for specific labs

- (1) The lab designations denote individual rooms within each location. (OC01, OC02, OC03, etc.)
- (2) A2LA Certificate No.
- (3) ISED Company No.
- (4) BSMI No.
- (5) VCCI Site Filing No.
- (6) FDA ASCA No.



PRODUCT DESCRIPTION



Client and Equipment Under Evaluation Information

Company Name:	Becton, Dickinson and Company
Address:	c/o Becton, Dickinson and Company
City, State, Zip:	Rantoul, IL 61866-5200
Evaluation Requested By:	Celiflora Palma
EUT:	Pyxis Pro
Date of Evaluation:	9/3/2025

Information Provided by the Party Requesting the Evaluation

Functional Description of the Equipment:

Medical device containing two Bluetooth Acc Det FCC ID SQGBL654, one Bluetooth Barcode Scanner FCC ID UZ7CR6080PC, Wi-Fi 802.11 a/b/g/n/ac FCC ID TX2-RTL8852BE, RFID Card Reader FCC ID M9MF80100 and 13.56 MHz smart card reader (HID Omnikey 5122)

Objective:

To demonstrate compliance with FCC RF exposure requirements for 2.1093 portable devices.

RF EXPOSURE CONDITION

The following RF Exposure conditions were used for the assessment documented in this report:	
Intended Use	Portable
Location on Body (if applicable)	Head/Torso
How is the Device Used	Device is used at a distance less than 20cm from the user.
Radios Contained in the Same Host Device	RFID Bluetooth 802.11 n/ac WPT
Simultaneous Transmitting Radios	None
Body Worn Accessories	None
Environment	General Population/Uncontrolled Exposure

All radios have been treated as standalone devices. This is due to the >20cm separation distances between radio devices. Refer to Appendix B - Pyxis Pro Radio Distances.

A summary of RF exposure conditions for Bluetooth, WPT and 802.11 devices is located in Appendix A - Summary of Previous Results.

SAR TEST EXCLUSION



OVERVIEW

Human exposure to RF emissions from portable devices (47 CFR §2.1093) used with the radiating antenna closer than 20 cm to the user requires Specific Absorption Rate (SAR) to evaluate the environmental impact of human exposure to radiofrequency (RF) radiation.

COMPLIANCE WITH FCC REQUIREMENTS IN 47 CFR §2.1093

The EUT will be used with a separation distance of less than 20 centimeters between the radiating antenna and the body of the user or nearby persons and must therefore be considered a portable transmitter per 47 CFR 2.1093(b).

47 CFR §2.1093

“(b) For purposes of this section, the definitions in §1.1307(b)(2) of this chapter shall apply. A portable device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that the RF source's radiating structure(s) is/are within 20 centimeters of the body of the user.”

COMPLIANCE WITH FCC KDB 447498 D01 GENERAL RF EXPOSURE GUIDANCE V06

“KDB 447498 D01 General RF Exposure Guidance v06” provides the procedures, requirements, and authorization policies for mobile and portable devices.

Standalone radio SAR test exclusion is covered under section 4.3.1. Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Test Exclusion Thresholds are met as shown in the Limits section below.

Simultaneous transmission SAR test exclusion is covered under section 4.3.2. SAR test exclusion is determined for each operating configuration and exposure condition according to the reported standalone SAR of each applicable simultaneously transmitting antenna. When the sum of 1-g or 10-g SAR of all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit, SAR test exclusion applies to that simultaneous transmission configuration.

SAR TEST EXCLUSION

LIMITS

Limits for General Population /Uncontrolled Exposure: 47 CFR §1.1310 (c)

The SAR limits for general population/uncontrolled exposure are 0.08 W/kg, as averaged over the whole body, and a peak spatial-average SAR of 1.6 W/kg, averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the parts of the human body treated as extremities, such as hands, wrists, feet, ankles, and pinnae, where the peak spatial-average SAR limit is 4 W/kg, averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube). Exposure may be averaged over a time period not to exceed 30 minutes to determine compliance with general population/uncontrolled SAR limits.

For 100 kHz to 6 GHz and test separation distances ≤ 50 mm, the SAR test exclusion thresholds are 1-g for head and body SAR and 10-g SAR for extremity SAR.

ASSESSMENT (KDB 447498 D01 GENERAL RF EXPOSURE GUIDANCE V06)

For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

$$\left[\frac{(\text{max. power of channel, including tune-up tolerance, mW})}{(\text{min. test separation distance, mm})} \right] \cdot [\sqrt{f(\text{GHz})}] = \begin{matrix} 3.0 \text{ for 1-g SAR} \\ 7.5 \text{ for 10-g extremity SAR} \end{matrix}$$

Where:

- $f(\text{GHz})$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to 4.1f) is applied to determine SAR test exclusion.

APPARENT POWER

When the transmitted signal is measured as a field strength value (dB μ V/m), this value is converted to a power level using the following derivation:

Step 1 – Per ANSI C63.10:2020 section 10.3.9 equation (34), the relationship between EIRP and field strength is as follows:

$$EIRP_{meas} = E_{meas} - 95.3$$

Where:

$EIRP_{meas}$ is the equivalent isotropically radiated power in dBm as converted from a measured value

E_{meas} is the field strength at a 3 m measurement distance in dB μ V/m. Measurements at distances other than 3m were distance corrected to 3 m by 40 dB/decade.

Step 2 – If a power tolerance or a tune-up value is provided, the reported power should be scaled accordingly:

$$EIRP = EIRP_{meas} + \text{Tolerance}$$

Where:

EIRP is the maximum equivalent isotropically radiated power in dBm

$EIRP_{meas}$ is the equivalent isotropically radiated power in dBm as converted from a measured value

SAR TEST EXCLUSION



Tolerance is either the tolerance provided in dB or the positive tune-up tolerance range in dB

Step 3 – Convert the EIRP value to linear terms

$$EIRP(mW) = 10^{\frac{EIRP(dBm)}{10}}$$

Where:

EIRP is the maximum equivalent isotropically radiated power, in terms of either mW or dBm

When the transmitted field strength value is reported as a magnetic field strength value, (dBμA/m), the value is converted to an electric field strength, (dBμV/m), by adding the free-space impedance, $20\log(377 \text{ ohm}) \sim 51.5$ dBohm to the magnetic field strength (in logarithmic terms).

ASSESSMENT

By operating below the SAR Test Exclusion Threshold, the standalone radio is compliant with the requirements of 47 CFR §1.1310. If applicable, collocated radios are further assessed later in this document. The SAR Test Exclusion Threshold is summarized in the following table(s):

Radio	Frequency Range (MHz)	Conducted Output Power	Power Tolerance (dB)	Duty Cycle	Antenna Assembly Gain (dBi)	Minimum Separation Distance (mm)	Exclusion Threshold	Limit	Compliant
RFID: Omnikey 5122	13.56	0.0671 uW	N/A	100.0%	1	5	0.0	236.7	yes

The information in the table above was obtained from:

A measured value was used in these calculations. Assessment based on customer supplied information and Element report CRDN1144.0.

Radio	Frequency Range (MHz)	Radiated Output Power or Field Strength	Power Tolerance (dB)	Duty Cycle	Antenna Assembly Gain (dBi)	Minimum Separation Distance (mm)	Exclusion Threshold	Limit	Compliant
RFID: Omnikey 5122	13.56	31.8 dBuV/m @ 30m	N/A	100.0%	1	5	0.0	236.7	yes

The information in the table above was obtained from:

A measured value was used in these calculations. Assessment based on customer supplied information and Element report CRDN1144.0.

Evaluator: Chuck Heller

APPENDIX

SUMMARY OF PREVIOUS RESULTS

For Informational Use Only



RF EXPOSURE EVALUATION REPORT NUMBER FA050614-01A, SPORTON LAB, TAIWAN

Zebra CR6080-PC
HC Cradle
FCC ID: UZ7-CR6080PC

FCC CFR 47 Part 1, 1.1307(b) and 1.1310
FCC KDB 680106 D01v03

All test modes measured at 10cm distance; all H-field test points < 50% of MPE limit of 1.63A/m (0.815).

RF EXPOSURE EVALUATION REPORT NUMBER FA050617-01B, SPORTON LAB, TAIWAN

Zebra CR6080-PC
HC Cradle
FCC ID: UZ7-CR6080PC

FCC CFR 47 Part 2, 2.1093
FCC KDB 447498 D01 v06

With a separation distance of 5mm at 2.48GHz and 6.47dBm Max Power, the test exclusion threshold was 1.4 (less than limit of 3 therefore SAR testing not required).

RF EXPOSURE EVALUATION REPORT NUMBER FA042916, SPORTON LAB, TAIWAN

Zebra CS6080
Scanner
FCC ID: UZ7-CS6080

FCC CFR 47 Part 2, 2.1093
FCC KDB 447498 D01 v06

With a separation distance of 5mm at 2.48GHz and 5.7dBm Max Power, the test exclusion threshold was 1.17 (less than limit of 7.5 therefore SAR testing not required).

SUMMARY OF PREVIOUS RESULTS

For Informational Use Only



FCC GRANT OF EQUIPMENT AUTHORIZATION, DATE OF GRANT: 09/06/2022

Realtek RTL8852BE
Combo Module

FCC ID: TX2-RLT8852BE

Single Modular Approval. Output power listed is conducted. This device has 20MHz, 40MHz and 80MHz bandwidth modes. The RF exposure compliance is addressed for 1.1310 and 2.1091 MPE limits – this filing complies with KDB 447498 and is approved for mobile/fixed operation.

FCC Rule Parts	Frequency Range (MHz)	Output Watts
15E	5180.0 – 5240.0	0.247
15E	5260.0 – 5320.0	0.249
15E	5500.0 – 5720.0	0.245
15E	5745.0 – 5825.0	0.348
15E	5845.0 – 5885.0	0.764

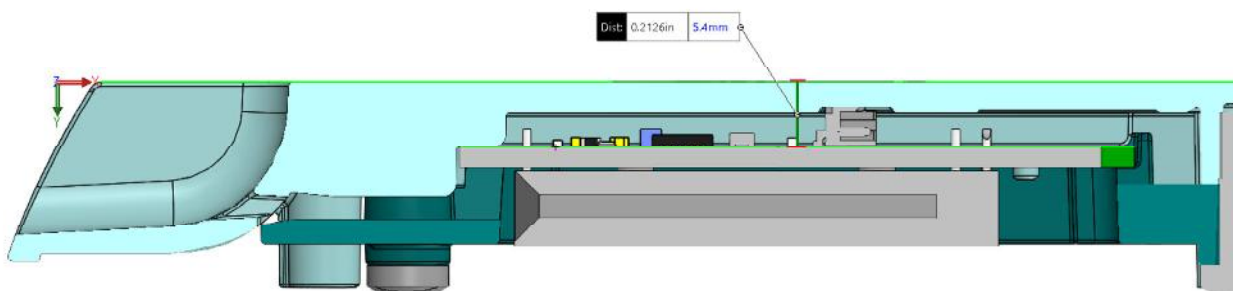
Class II Permissive Change: to enable the U-NII-4 and U-NII-3 & -4 span channels through software change and to address the SAR evaluation at 5mm minimum test separation distance as documented in this filing. The highest reported SAR for body exposure conditions and simultaneous transmission exposure conditions are 0.73 W/kg and 1.01 W/kg, respectively.

HID Omnikey 5122 Reader

Looking down at the system, the HID Smart Card Reader “Omnikey 5122 Reader” sits next to the Keyboard.



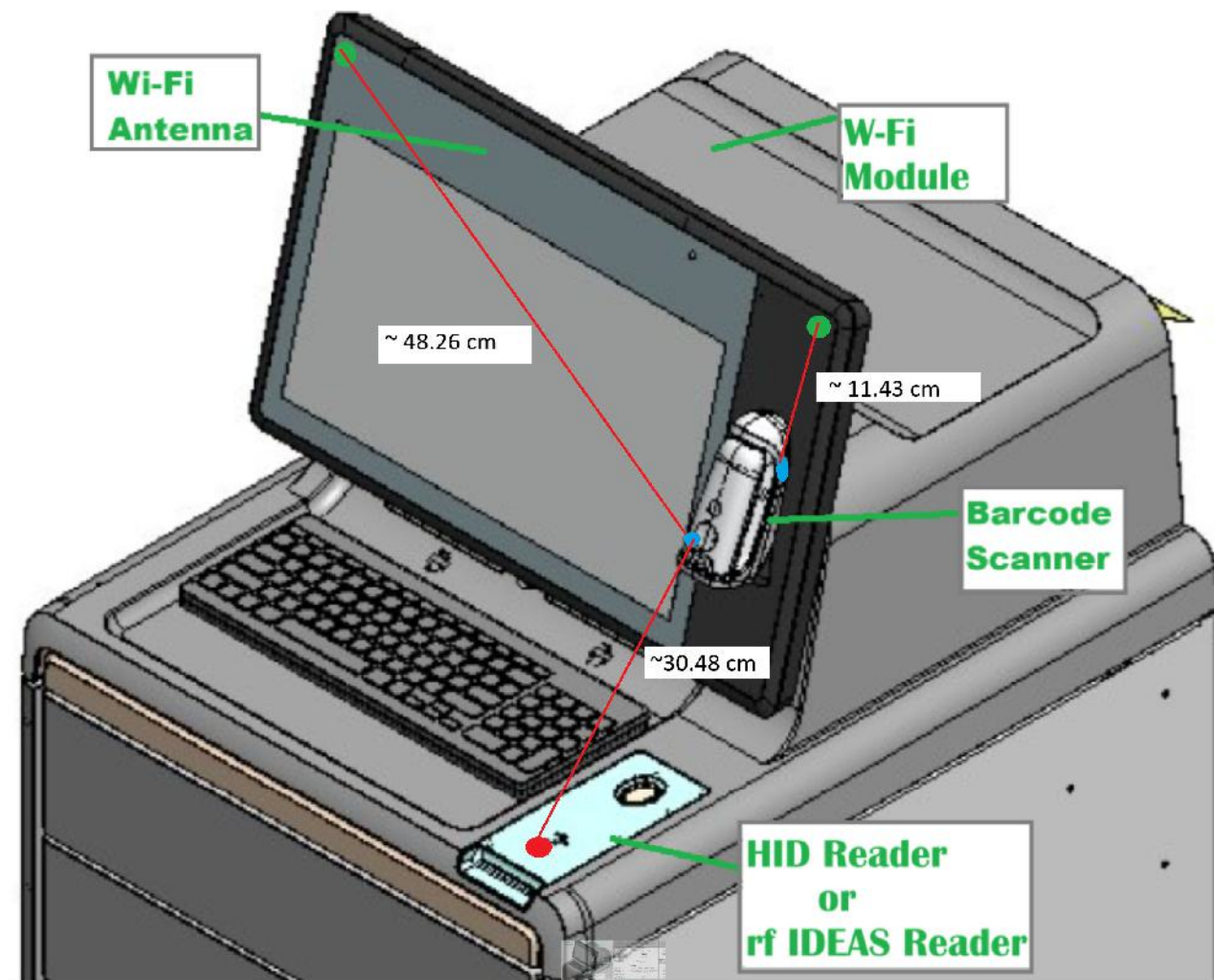
The HID Smart Card Reader sits against the cover .



All radios can be transmit simultaneously at some point. This could occur during user login.

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Radio (function)	Frequency	Transmit simultaneously with	Transmit simultaneously with
Wi-Fi Module (Wi-Fi only)	2.5Ghz/5Ghz	X	X
Barcode Scanner Cradle + Reader (Bluetooth)	2.4 Ghz	X	X
HID Reader (RFID)	13.56 Mhz	X	
rfIDEAS Reader (RFID)	13.56 Mhz/125Khz		X





End of Test Report