

## TEST REPORT (RF EXPOSURE)

**Applicant** : Sakamoto Electric MFG. Co., Ltd.  
**Address** : 3-27-55, Wajiro, Higashi-ku, Fukuoka 811-0202, Japan  
**Products** : XBee3  
**Model No.** : MOD-SELN131  
**Serial No.** : --  
**Test Standard** : CFR 47 FCC Rules and Regulations Part 2 (§ 2.1093)  
**FCC ID** : 2BE5W-SELN131  
**Test Results** : Passed  
**Date of Receipt** : --  
**Date of Test** : --



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- The test results in this test report was made by using the measuring instruments which are traceable to national standards of measurement in accordance with ISO/IEC 17025.
- The applicable standard, testing condition and testing method which were used for the tests are based on the request of the applicant.
- The test results presented in this report relate only to the offered test sample.
- The contents for the equipment under test (EUT) such as identification information in clause 2 of this report were provided by the applicant. JQA is not responsible for the test results affected by the incorrect information.
- The contents of this test report cannot be used for the purposes, such as advertisement for consumers.
- This test report shall not be reproduced except in full without the written approval of JQA.
- VLAC does not approve, certify or warrant the product by this test report.

**REVISION HISTORY**

File No.	Contents	Issue Date
KL80230803	Initial Issue	April 30, 2024

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## 1 Summary of Test Results

Applied Standard : CFR 47 FCC Rules and Regulations Part 2 – Frequency Allocations and Radio Treaty Matters; General Rules and Regulations  
§ 2.1093 Radiofrequency radiation exposure evaluation: portable devices

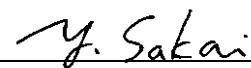
The test results are **passed** for exposure limits specified in FCC 47 CFR § 1.1310 and/or ANSI/IEEE Std. C95.1.

In the approval of test results,

- No deviations were employed from the applied standard.
- No modifications were conducted by JQA to achieve compliance to the limitations.

Reviewed by

Yasuhsisa Sakai / Deputy Senior Manager



Tested by

Yuji Shintaku / Assistant Manager



## 2 Description of Equipment Under Test (EUT)

### 2.1 General Information

Manufacturer	Digi International Inc. 11001 Bren Road East Minnetonka, MN 55343 USA
Products	XBee3
Model No.	MOD-SELN131
Serial No.	--
Power Rating	3.3VDC
Modulation Type	QPSK
Transmitting Frequency	2405 MHz (11CH) – 2480 MHz (26CH)
Device Category	Portable Device (§ 2.1093)
Exposure Environments	General Population/Uncontrolled Exposure
FCC Rule Part(s)	§15.247
Antenna Type	Integral PCB Antenna
Antenna Gain	0 dBi

### 2.2 Host Device Information

Manufacturer	Sakamoto Electric MFG. Co., Ltd. 3-27-55, Wajiro, Higashi-ku, Fukuoka 811-0202, Japan
Products	Digital Spirit Level Sensor
Model No.	SELN-131BTM
Power Rating	4.5VDC (AAA Lithium Battery ×3) 5VDC (supplied via USB)
Grounding	None

**3 Test Methods and Procedures**

All calculations in this report were made in accordance with FCC 47 CFR § 1.1307(b), § 2.1093 and the following FCC Published RF Exposure KDB Procedures..

# 447498 D01 General RF Exposure Guidance v06

**4 Test Location**

Japan Quality Assurance Organization (JQA)  
Kitakansai Testing Center Saito EMC Branch  
7-3-10, Saito-asagi, Ibaraki-shi, Osaka 567-0085, Japan

**5 Accreditation of Test Laboratory**

JQA Kitakansai Testing Center Saito EMC Branch is accredited under ISO/IEC 17025 by the following accreditation bodies and the test facility is registered by the following bodies. If the accreditation logo does not appear on this cover, it is outside the scope of ISO/IEC 17025.

VLAC Accreditation No. : VLAC-001-2 (Expiry date : April 30, 2024)  
A2LA Accreditation No. : 5498.01 (Expiry date : November 30, 2025)

VCCI Registration No. : A-0002 (Expiry date : April 30, 2024)  
FCC Registration No. : JP5008 (Expiry date : April 30, 2024)  
ISED Registration No. : JP0014 (Expiry date : November 30, 2025)  
BSMI Registration No. : SL2-IS-E-6006, SL2-IN-E-6006, SL2-R1/R2-E-6006, SL2-A1-E-6006  
(Expiry date : September 14, 2025)

Accredited as conformity assessment body for Japan electrical appliances and material law by METI.  
(Expiry date : February 22, 2025)

## 6 Test Requirements

### 6.1 Standard Applicability

According to § 1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

This is a portable device with its physical nature to be used nearby, the distance between radiating structure and human is less than 20 cm.

### 6.2 Evaluation Results

The 1 g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances*  $\leq$  50 mm are determined by;

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f_{(\text{GHz})}}]$   
 $\leq 3.0$  for 1 g SAR and  $\leq 7.5$  for 10 g extremity SAR, 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.
- When the minimum test separation distance is  $< 5$  mm, a distance of 5 mm is applied.

Band	Freq. (MHz)	Max. Power		Distance (mm)	Threshold	Test Exclusion
		(dBm)	(mW)			
ZigBee	2480	8.0	6	< 5	1.9	YES

The minimum user separation distance was assumed to be 0 mm for the purpose of the SAR exclusion calculations.

#### **Conclusion:**

The device qualifies for the Standalone SAR test exclusion because the computed value is  $< 3$ .

--- END OF REPORT ---