

FCC RF Exposure Evaluation

Report Number:

F230730E12

Equipment under Test (EUT):

Weighing Indicator with various I/Os

MiNexx ® Indicator L

Applicant:

Minebea Intec GmbH

Manufacturer:

Minebea Intec GmbH



Deutsche
Akkreditierungsstelle
D-PL-17186-01-00

References

- [1] **CFR 47 Rule part 1** Practice and Procedure
- [2] **CFR 47 Rule part 2** Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
- [3] **KDB 447498 D01 General RF Exposure Guidance v06**

Assessed and
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20.02.2026

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1 Identification

1.1 Applicant

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1.2 Manufacturer

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Applicant represented during the evaluation by the following person:	-

1.3 Test Laboratory

The evaluation was carried out by: **PHOENIX TESTLAB GmbH**
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accredited by *Deutsche Akkreditierungsstelle GmbH (DAkkS)* according to DIN EN ISO/IEC 17025:2018. The accreditation is only valid for the scope of accreditation listed in the annex of the certificate D-PL-17186-01-00. FCC Test Firm Designation Number DE0004, FCC Test Firm Registration Number 469623, CAB Identifier DE0003 and ISED# 3469A.

1.4 EUT (Equipment under Test)

Test object: *	Weighing Indicator with various I/Os
Model name: *	MiNexx ® Indicator L
Model number: *	NICL
Order number: *	NICL
Contains FCC ID: (Bluetooth® / WLAN) *	MCQ-CCIMX6UL
Contains IC certification number: (Bluetooth® / WLAN) *	1846A-CCIMX6UL
FCC ID: *	2BPI4-NICL
IC certification number: *	34282-NICL
PMN: *	Weight indicator MiNexx® L
HVIN: *	NICLL1
FVIN: *	Bluetooth® / WLAN part: 82004060
	NFC part: 10.01.A0

* Declared by the applicant

		EUT number	
		1	2
Serial number: *		47164022	-
PCB identifier: *	Mainboard:	2409-070105-110083	-
	Connection board:	2406-070158-090029	-
Hardware version: *	Mainboard:	M/L, Rev. 11	-
	Connection board:	Rev. 09	-
Software version: *		00.02.00-trunk.596860	-

* Declared by the applicant

1.5 Technical Data of Equipment

General EUT data			
Power supply EUT: *	AC		
Supply voltage EUT: *	U _{nom} = 120 V _{AC}	U _{min} = 100 V _{AC}	U _{max} = 240 V _{AC}
Temperature range: *	-10 °C to +40 °C		
Lowest / highest internal frequency: *	32.768 kHz / 5.835 GHz		

* Declared by the applicant

Ports / Connectors				
Identification	Connector		Length during test	Shielding (Yes / No)
	EUT	Ancillary		
AC mains	Cable gland	CEE7	3 m	No
Digital I/O Relais	M12	Cable gland	2 m	Yes
Digital WP	Cable gland	Round plug	2 m	Yes
Analog WP 7195	Cable gland	Ferrule	2 m	Yes
Analog WP 7195	Cable gland	Ferrule	2 m	Yes
Ethernet/IP	M12	RJ-45	5 m	Yes
USB	Cable gland	USB-A socket	2 m	Yes
Ethernet	Cable gland	RJ-45	5 m	Yes

* Declared by the applicant

NFC part	
Operating frequency: *	13.56 MHz
Number of channels: *	1
Type of modulation: *	ASK
Data rate: *	106 kbps
Antenna type: *	Flex print type 14 mm x 16 mm
Antenna connector: *	FCC Conector Samtec ZF1-04-01-T-WT

* Declared by the applicant

Bluetooth® / WLAN part			
Radio module: * ¹	DIGI ConnectCore® 6UL		
Antenna type: * ²	WLAN / BT / Zigbee Tunable Embedded PCB Antenna		
Antenna name: * ²	Ethertronics 1001932PT		
Antenna gain:	2.5 dBi @ 2.4 GHz 4.4 dBi @ 5 GHz		
Antenna connector: * ¹	U.FL		
Supply voltage radio module: * ¹	U _{nom} = 4.4 V _{DC}	U _{min} = 4.3 V _{DC}	U _{max} = 4.55 V _{DC}

*¹ Based on the document *ConnectCore® 6UL Hardware Reference Manual* provided by the applicant

Bluetooth® frequencies			
Channel 00	2402 MHz	Channel 01	2403 MHz
Channel 02	2404 MHz	Channel 03	2405 MHz
...	...	...	...
...	...	...	...
Channel 37	2439 MHz	Channel 38	2440 MHz
...	...	...	...
...	...	...	...
Channel 75	2477 MHz	Channel 76	2478 MHz
Channel 77	2479 MHz	Channel 78	2480 MHz

Bluetooth® radio mode	
Fulfil radio specification: *	Bluetooth 4.2
Type of modulation: *	BT (1 Mbps) GFSK
	BT (2 Mbps) $\pi/4$ -DQPSK
	BT (3 Mbps) 8DPSK
Operating frequency range: *	BT (1 Mbps) 2402 – 2480 MHz
	BT (2 Mbps) 2402 – 2480 MHz
	BT (3 Mbps) 2402 – 2480 MHz
Number of channels: *	BT (1 Mbps) 79 (1 MHz channel spacing)
	BT (2 Mbps) 79 (1 MHz channel spacing)
	BT (3 Mbps) 79 (1 MHz channel spacing)

* Based on the document *ConnectCore® 6UL Hardware Reference Manual* provided by the applicant

IEEE 802.11 frequencies (2.4 GHz)			
20 MHz		40 MHz	
Channel 1	2412 MHz	-	-
Channel 2	2417 MHz	-	-
Channel 3	2422 MHz	Channel 3	2422 MHz
Channel 4	2427 MHz	Channel 4	2427 MHz
Channel 5	2432 MHz	Channel 5	2432 MHz
Channel 6	2437 MHz	Channel 6	2437 MHz
Channel 7	2442 MHz	Channel 7	2442 MHz
Channel 8	2447 MHz	Channel 8	2447 MHz
Channel 9	2452 MHz	Channel 9	2452 MHz
Channel 10	2457 MHz	-	-
Channel 11	2462 MHz	-	-

IEEE 802.11 radio mode (2.4 GHz)				
Fulfil radio specification: *	IEEE 802.11 b IEEE 802.11 g IEEE 802.11 n (20 MHz) IEEE 802.11 n (40 MHz)			
Type of modulation: *	IEEE 802.11b	DSSS (1 Mbps	BPSK)	
		DSSS (2 Mbps	DQPSK)	
	IEEE 802.11g	DSSS (5.5/11 Mbps	CCK)	
		OFDM (6/9 Mbps	BPSK)	
Type of modulation: *	IEEE 802.11g	OFDM (12 / 18 Mbps	QPSK)	
		OFDM (24/36 Mbps	16-QAM)	
	IEEE 802.11n 20 MHz (Spatial Stream: 1)	OFDM (48/54 Mbps	64-QAM)	
		MCS0	BPSK)	
Type of modulation: *	IEEE 802.11n 20 MHz (Spatial Stream: 1)	MCS1/2	OFDM (14 – 22 Mbps	
		MCS3/4	OFDM (28 – 43 Mbps	
	IEEE 802.11n 40 MHz (Spatial Stream: 2)	MCS5/6/7	OFDM (58 - 72 Mbps	
		MCS0	OFDM (15 Mbps	
Type of modulation: *	IEEE 802.11n 40 MHz (Spatial Stream: 2)	MCS1/2	OFDM (30 / 45 Mbps	
		MCS3/4	OFDM (60 – 90 Mbps	
	IEEE 802.11n 40 MHz (Spatial Stream: 2)	MCS5/6/7	OFDM (120 - 150Mbps	
		MCS0	OFDM (15 Mbps	
Operating frequency range: *	IEEE 802.11b		2412 – 2462 MHz	
	IEEE 802.11g		2412 – 2462 MHz	
	IEEE 802.11n 20 MHz		2412 – 2462 MHz	
	IEEE 802.11n 40 MHz		2422 – 2452 MHz	
Number of channels: *	IEEE 802.11b		11 (5 MHz channel spacing)	
	IEEE 802.11g		11 (5 MHz channel spacing)	
	IEEE 802.11n 20 MHz		11 (5 MHz channel spacing)	
	IEEE 802.11n 40 MHz		9 (5 MHz channel spacing)	

* Based on the document *ConnectCore® 6UL Hardware Reference Manual* provided by the applicant

IEEE 802.11 frequencies (5 GHz)					
20 MHz		40 MHz		80 MHz	
Channel 36	5180 MHz	Channel 38	5190 MHz	Channel 42	5210 MHz
Channel 40	5200 MHz				
Channel 44	5220 MHz	Channel 46	5230 MHz		
Channel 48	5240 MHz				
Channel 149	5745 MHz	Channel 151	5755 MHz	Channel 155	5775 MHz
Channel 153	5765 MHz				
Channel 157	5785 MHz	Channel 159	5795 MHz		
Channel 161	5805 MHz				
Channel 165	5825 MHz	-	-	-	-

IEEE 802.11 radio mode (5 GHz)		
Fulfils radio specification: *	IEEE 802.11 a, IEEE 802.11 n (20 MHz), IEEE 802.11 n (40 MHz) IEEE 802.11 ac (20 MHz), IEEE 802.11 ac (40 MHz) IEEE 802.11 ac (80 MHz)	
Type of modulation: *	IEEE 802.11 a	BPSK, QPSK, 16-QAM, 64-QAM (6/9/12/18/24/36/48/54 Mbit/s)
	IEEE 802.11 n20	BPSK, QPSK, 16-QAM, 64-QAM (up to 72.2 Mbit/s 1 spatial stream) (up to 144.4 Mbit/s 2 spatial stream)
	IEEE 802.11 n40	BPSK, QPSK, 16-QAM, 64-QAM (up to 150 Mbit/s 1 spatial stream) (up to 300 Mbit/s 2 spatial stream)
	IEEE 802.11 ac20	BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM (up to 86.65 Mbit/s 1 spatial stream) (up to 173.3 Mbit/s 2 spatial stream)
	IEEE 802.11 ac40	BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM (up to 200 Mbit/s 1 spatial stream) (up to 400 Mbit/s 2 spatial stream)
	IEEE 802.11 ac80	BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM (up to 433.35 Mbit/s 1 spatial stream) (up to 866.7 Mbit/s 2 spatial stream)
Operating frequency range: *	IEEE 802.11a	5180 – 5240 MHz, 5745 – 5825 MHz
	IEEE 802.11n 20 MHz	5180 – 5240 MHz, 5745 – 5825 MHz
	IEEE 802.11n 40 MHz	5190 – 5230 MHz, 5755 – 5795 MHz
	IEEE 802.11ac 20 MHz	5180 – 5240 MHz, 5745 – 5825 MHz
	IEEE 802.11ac 40 MHz	5190 – 5230 MHz, 5755 – 5795 MHz
	IEEE 802.11ac 80 MHz	5210, 5755 MHz
Number of channels: *	IEEE 802.11a	9
	IEEE 802.11n 20 MHz	9
	IEEE 802.11n 40 MHz	4
	IEEE 802.11ac 20 MHz	9
	IEEE 802.11ac 40 MHz	4
	IEEE 802.11ac 80 MHz	2

* Declared by the applicant

2 Evaluation Methods

2.1 RF exposure test exemptions for single sources

2.1.1 General Exemption CFR 47 §1.1307(b)(3)(i)(A)

The available maximum time-averaged power is no more than 1 mW, regardless of separation distance. This exemption may not be used in conjunction with other exemption criteria other than those in paragraph (b)(3)(ii)(A) of this section. Medical implant devices may only use this exemption and that in paragraph (b)(3)(ii)(A);

2.1.2 SAR Based Exemption CFR 47 §1.1307(b)(3)(i)(B)

The available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold P_{th} (mW) described in the following formula. This method shall only be used at separation distances (cm) from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz inclusive.

For the following separation distances [d] and frequency ranges P_{th} is given by the following formulas.

	0.5 cm ≤ d ≤ 20cm	20 cm < d ≤ 40 cm
0.3 GHz ≤ f < 1.5 GHz	$P_{th}(mW) = ERP_{20cm} \left(\frac{d}{20} \right)^x$ $ERP_{20cm} (mW) = 2040f$ $x = -\log_{10} \left(\frac{60}{ERP_{20cm} \sqrt{f}} \right)$	$P_{th}(mW) = ERP_{20cm}$ $ERP_{20cm} (mW) = 2040f$
1.5 GHz ≤ f ≤ 6 GHz	$P_{th}(mW) = ERP_{20cm} \left(\frac{d}{20} \right)^x$ $ERP_{20cm} (mW) = 3060$ $x = -\log_{10} \left(\frac{60}{ERP_{20cm} \sqrt{f}} \right)$	$P_{th}(mW) = ERP_{20cm}$ $ERP_{20cm} (mW) = 3060$

Relaxation for extremities according to 2.1.1 [3]

Finally, if 10-g extremity SAR applies, SAR test exemption may be considered by applying a factor of 2.5 to the SAR-based exemption thresholds.

2.1.3 MPE Based Exemption CFR 47 §1.1307(b)(3)(i)(C)

By using Table 1 and the minimum separation distance (d in meters) from the body of a nearby person for the frequency (f in MHz) at which the source operates, the ERP (watts) is no more than the calculated value prescribed for that frequency. For the exemption in Table 1 to apply, d must be at least $\lambda/2\pi$, where λ is the free-space operating wavelength in meters. If the ERP of a single RF source is not easily obtained, then the available maximum time-averaged power may be used in lieu of ERP if the physical dimensions of the radiating structure(s) do not exceed the electrical length of $\lambda/4$ or if the antenna gain is less than that of a half-wave dipole (1.64 linear value).

RF Source frequency [MHz]	Threshold ERP [W]
0.3 - 1.34	$1920 d^2$
1.34 - 30	$3450 d^2/f^2$
30 - 300	$3.83 d^2$
300 - 1500	$0.0128 d^2/f$
1500 - 100000	$19.2 d^2$

d : Minimal separation distance from antenna to the user

2.1.4 Standalone MPE evaluation limits

The human exposure to RF emissions from such devices could be evaluated based on the MPE limits adopted by the FCC for electric and magnetic field strength and / or power density. The limits for General Population / Uncontrolled Exposure are given in the following table from CFR 47 §1.1310(e)1:

Frequency range [MHz]	Electric field strength (E) [V/m]	Magnetic field strength (H) [A/m]	Power density (S) [mW/cm ²]	Averaging time [min]
(i)Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	*(100)	≤6
3.0 – 30	1842/f	4.89/f	*(900/f ²)	<6
30 – 300	61.4	0.163	1.0	<6
300 – 1,500			f/300	<6
1,500 – 100,000			5	<6
(ii)Limits for General Population / Uncontrolled Exposure				
0.3 – 1.34	614	1.63	*(100)	< 30
1.34 – 30	824/f	2.19/f	*(180/f ²)	< 30
30 – 300	27.5	0.073	0.2	< 30
300 – 1500			f/1500	< 30
1500 – 100,000			1.0	< 30

Note: f = frequency in MHz; * Plane – wave equivalent power density

The power density is calculated as follows:

$$S = \frac{P \cdot G \cdot D}{4 \cdot \pi \cdot d^2}$$

Where:

P: conducted power

G: Antenna gain (linear)

D: Duty Cycle

d: Minimal separation distance from antenna to the user

2.2 RF exposure test exemptions for simultaneous transmission sources

2.2.1 1 mW Test Exemption for simultaneous transmission sources

As discussed in CFR 47 §1.1307(b)(3)(ii)(A) [1] the 1 mW exemption intended for single transmitters may be also applied to simultaneous transmission conditions, within the same host device, according one of the following criteria:

- If the maximum available power of each individual transmitting antenna with the same time averaging period is ≤ 1 mW, and the nearest parts of the antenna structures of the simultaneously operating transmitters are separated by at least 2 cm
- If the aggregate maximum available power of all transmitting antennas is ≤ 1 mW in the same time-averaging period

This exemption may not be combined with any other exemption.

2.2.2 Simultaneous transmission SAR based and MPE based test exemptions

In CFR 47 §1.1307(b)(3)(ii)(B) that covers the situations where both SAR-based and MPE-based exemption may be considered for test exemption in fixed, mobile, or portable device the exposure conditions are described in detail. For these cases, a device with multiple RF sources transmitting simultaneously will be considered an RF exempt device if the condition of the following formular is satisfied.

$$\sum_{i=1}^a \frac{P_i}{P_{th,i}} + \sum_{j=1}^b \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^c \frac{Evaluated_k}{Exposure Limit_k} \leq 1$$

For these test exemptions to apply, the maximum output power, duty factor, and other applicable parameters used in the standalone ERP determination tests, must be the same, or corresponding to a more conservative choice, than those required for simultaneous transmission.

Simultaneous transmission MPE test exclusion applies if the sum of the MPE ratios for all simultaneously transmitting antennas incorporated in a host device is ≤ 1.0 , according to calculated/estimated, numerically modelled, or measured field strengths or power density. The MPE ratio of each antenna is determined at the minimum test separation distance required by the operating configurations and exposure conditions of the host device, according to the ratio of field strengths or power density to the MPE limit at the test frequency.

2.2.3 Test exemption based on the SAR to Peak Location Separation Ratio

If the ERP-based condition in the previous section does not apply, a test exemption may be still applicable based on the SAR to peak location separation ratio (SPLSR) procedure.

In this case, the simultaneously transmitting antennas in each operating mode and exposure condition combination must be considered one pair at a time to determine the SPLSR that qualifies for the additional test exemption.

This ratio is defined as:

$$SPLSR = (SAR_1 + SAR_2)^{\frac{1.5}{R_i}}$$

Where: SAR_1 and SAR_2 = highest reported SAR or estimated SAR values for the two sources in the pair i , and R_i is their distance in mm.

If $SPLSR \leq 0.04$ (rounded to two decimal digits), for all antenna pairs in the configuration, then the device qualifies for 1 g SAR test exemption.

If 10 g SAR applies (e.g. for extremities) the corresponding test exemption condition is $SPLSR \leq 0.10$.

If any antenna pair does not qualify for simultaneous transmission SAR test exemption, then the device must be tested for SAR compliance, according to the enlarged zoom scan and volume scan post-processing procedures in KDB Pub. 865664 D01.

3 Results of evaluation

3.1 Used evaluation methods

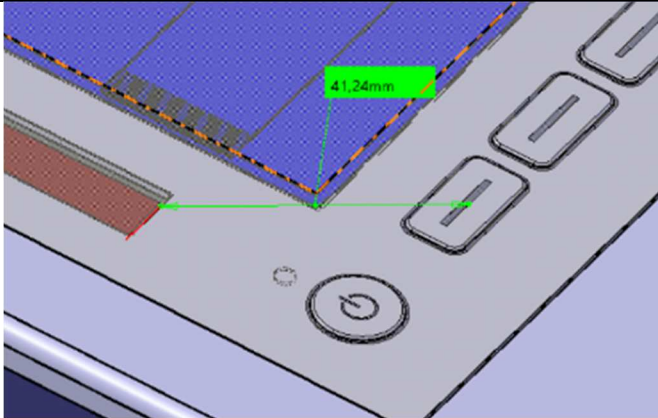
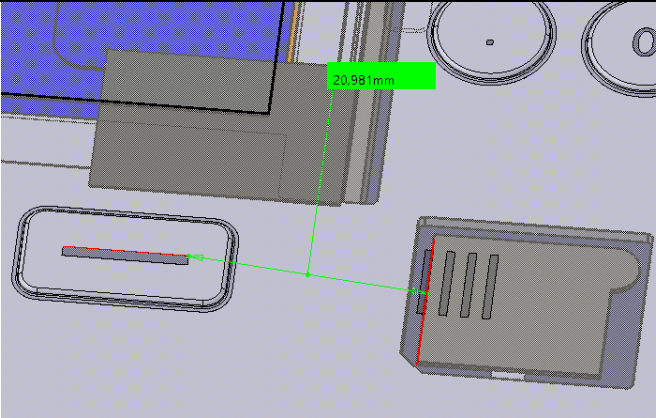
RF Exposure test exemptions for single sources			
Used	Method	See sub-clause	Comment
☐	General Exemption acc. CFR 47 §1.1307(b)(3)(i)(A)	2.1.1	-
☐	SAR Based Exemption acc. CFR 47 §1.1307(b)(3)(i)(B)	2.1.2	-
☐	MPE Based Exemption acc. CFR 47 §1.1307(b)(3)(i)(C)	2.1.3	-
☐	MPE Calculation	2.1.4	-

RF Exposure test exemptions for simultaneous transmission sources			
Used	Method	See sub-clause	Comment
☐	Not applicable	-	No simultaneous possible
☐	1 mW test exemption acc. CFR 47 §1.1307(b)(3)(ii)(A)	2.2.1	-
☒	Exemption acc. [3], clause 4.3.2b)1)	-	-

3.2 Evaluation Distance

According to the CFR47 §1.1307(b)(2) the device as declared by the applicant is a portable device and in the intended use there are at least the following separation distances between the device (control buttons) and the user:

Antenna	Min separation distance as declared by the applicant
Antenna 1 (WLAN / Bluetooth)	41.2 mm
Antenna 2 (NFC)	20.9 mm
WLAN / Bluetooth	NFC

3.3 Output power of stand-alone radio transmitters

First, the maximum power values for the calculation of the estimated SAR values are calculated:

3.3.1 Bluetooth emissions

The following information are based on test report 1-3116/16-01-18-A of the radio module issued by CTC advanced GmbH.

P _{con} [dBm] incl. tune-up	P _{con} [mW] incl. tune-up	Antenna gain [dBi]	Cable attenuation [dB]	P _{e.i.r.p} [dBm]	P _{e.i.r.p} [mW]	P _{e.r.p} * [dBm]	P _{e.r.p} [mW]
5.70	3.72	2.50	0	8.20	6.61	6.05	4.03

* P_{e.r.p.} = P_{con} [dBm] + antenna gain [dBi] - cable attenuation [dB] - 2.15 dB

3.3.2 WLAN (2.4 GHz emissions)

The following information are based on test report 1-3116/16-01-17-A of the radio module issued by CTC advanced GmbH.

P _{con} [dBm] incl. tune-up	P _{con} [mW] incl. tune-up	Antenna gain [dBi]	Cable attenuation [dB]	P _{e.i.r.p} [dBm]	P _{e.i.r.p} [mW]	P _{e.r.p} *2 [dBm]	P _{e.r.p} [mW]
21.30	134.90	2.50	0	23.80	239.88	21.65	146.27

* P_{e.r.p.} = P_{con} [dBm] + antenna gain [dBi] - cable attenuation [dB] - 2.15 dB

3.3.3 WLAN (5 GHz emissions)

The following information are based on test report 1-3116/16-01-20 of the radio module issued by CTC advanced GmbH.

P _{con} [dBm] incl. tune-up	P _{con} [mW] incl. tune-up	Antenna gain [dBi]	Cable attenuation [dB]	P _{e.i.r.p} [dBm]	P _{e.i.r.p} [mW]	P _{e.r.p} *2 [dBm]	P _{e.r.p} [mW]
11.40	13.80	4.40	0	15.80	38.02	13.65	23.18

* P_{e.r.p.} = P_{con} [dBm] + antenna gain [dBi] - cable attenuation [dB] - 2.15 dB

3.3.4 NFC emissions

General exemption CFR 47 §1.1307(b)(3)(i)(A)

The following information is based on test report *F230730E10* by PHOENIX TESTLAB GmbH.

The radiated field strength of the transmitter determined in the test report shown above is -9.7 dBμV/m at a distance of 30 m. This value is converted into an EIRP power using ANSI C63-10, equation (39):

$$EIRP = E_{Meas} + 20 \log(d_{Meas}) - 104.8$$

Where

EIRP	is the equivalent isotropically radiated power
E_{Meas}	is the field strength of the emission at the measurement distance, in dBμV/m
d_{Meas}	is the measurement distance, in m

$$EIRP = -9.7 \text{ dB}\mu\text{V/m} + 20 \log(30 \text{ m}) - 104.8 = -85.0 \text{ dBm}$$

This value is converted into an ERP power with formula according to ANSI C63-10, equation (G.5):

$$ERP = EIRP - 2.15 = -87.2 \text{ dBm}$$

The ERP power of the transmitter is -87.2 dBm or 1.9 pW.

3.4 Simultaneous transmission

As declared by the applicant, the WLAN / Bluetooth module and the NFC module can transmit simultaneously. Bluetooth, WLAN 2.4 GHz and WLAN (5 GHz) cannot transmit simultaneously. Only NFC and Bluetooth, NFC and WLAN (2.4 GHz) or NFC and WLAN (5 GHz) can transmit simultaneously. As shown in clauses 3.3.1 and 3.3.2 of this evaluation report, the output power of WLAN (2.4 GHz) is higher than the output power of Bluetooth. Therefore, the estimated SAR values are calculated for WLAN (2.4 GHz), WLAN (5 GHz) and NFC.

Calculation of the estimated SAR values according to KDB 447498 D01 General RF Exposure Guidance v06 4.3.2. b) 1):

	Frequency [GHz]	Max power incl tune-up [mW]	Min. separation distance [mm]	Estimated 10 g SAR [W/kg]
WLAN (2.4 GHz)	2.462	146.27	41.2 (<50)	1.286
WLAN (5 GHz)	5.825	23.18	41.2 (<50)	0.314
NFC 13.56 MHz	0.013560	0.000000002	20.9 (<50)	0.000000000003

Calculation was done as follows:

$$\frac{[(\text{max. power of channel, including tune - up tolerance, mW})]}{\text{min. test separation distance, mm}} \sqrt{\frac{f(\text{GHz})}{x} \frac{\text{W}}{\text{kg}}} \text{ for test separation distances } \leq 50 \text{ mm}$$

where $x = 7.5$ for 1 - g SAR and 18.75 for 10 - g SAR

The estimated 10 - g SAR of WLAN (2.4 GHz) is higher than the estimated 10 - g SAR of WLAN (5 GHz). Therefore, the estimated 10 - g SAR of WLAN (2.4 GHz) is considered for the evaluation.

Limit:

1.0 W/kg for 10-g SAR respectively 0.4 W/kg for 1-g SAR for separation distance > 50 mm. For extremities as in this case, the limit is 4.0 W/kg for 10-g SAR according to CFR 47 §1.1310(c).

Sum of estimated 10g SAR limb-worn according to 2.2.2:

$$\sum_{\text{SAR}}^{\text{all TX}} \left(\frac{\text{estimated SAR1}}{4 \text{ W/kg}} + \frac{\text{estimated SAR2}}{4 \text{ W/kg}} + \frac{\text{estimated SAR3}}{4 \text{ W/kg}} + \dots \right) \leq 1$$

$$\frac{1.286 \text{ W/kg}}{4 \text{ W/kg}} + \frac{0.000000000003 \text{ W/kg}}{4 \text{ W/kg}} = 0.32 < 1$$

4 Conclusion

The EUT complies in all operational modes to the limits given in [3] in a separation distance of 41.2 mm for antenna 1 and 20.9 mm for antenna 2.

5 Report History

Report Number	Date	Comment
F230730E12	20.02.2026	Initial evaluation report
-	-	-
-	-	-

----- end of evaluation report -----