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Sine Advanced Engineering, Inc. RF EXPOSURE REPORT

SCOPE OF WORK

RF EXPOSURE CALCULATION
ON THE DATA LINK SINE.LINK MONO

REPORT NUMBER

106453082LEX-005

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RF EXPOSURE TEST REPORT

Report Number: 106453082LEX-005

Project Number: G106453082

Report Issue Date: 1/27/2026

Product Name: Data link Sine.link mono

Product Model: Sine.link mono

Standards: FCC Title 47 CFR 2.1091
FCC Title 47 CFR Part 1.1310(e)(1) Limits for
Maximum Permissible Exposure (MPE)

Tested by:
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Client:
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1 Introduction and Conclusion

The tests indicated in Section 2 were performed on the product constructed as described in Section 4. The remaining test sections are the verbatim text from the actual data sheets used during the investigation. These test sections include the test name, the specified test Method, a list of the actual Test Equipment Used, documentation Photos, Results and raw Data. No additions, deviations, or exclusions have been made from the standard(s) unless specifically noted.

Based on the results of our investigation, we have concluded the product tested **complies** with the requirements of the standard(s) indicated. The results obtained in this test report pertain only to the item(s) tested. Intertek does not make any claims of compliance for samples or variants which were not tested.

2 Test Summary

Section	Test full name	Result
9	FCC Title 47 CFR Part 1.1310(e)(1) Limits for Maximum Permissible Exposure (MPE) (Limits for General Population / Uncontrolled Exposure)	Pass



3 Client Information

This product was tested at the request of the following:

Client Information	
Client Name:	Sine Advanced Engineering, Inc.
Address:	140 Sage Hen Rd Big Sky, MT 59716 USA
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Manufacturer Information	
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4 Description of Equipment under Test and Variant Models

Equipment Under Test	
Product Name	Data link Sine.link mono
Model Number	Sine.link mono
US SKU	FG00033002
Software Version	v1.7.2-5-g9af0cd8d10c7f309
Wireless Technology	904MHz – 926MHz LoRa (Chirp Spread Spectrum, CSS)
Antenna Gain ¹	2dBi
Maximum Output Power ¹	-12.66dBm
Ratings	5VDC
Description of Equipment Under Test (provided by client)	
Data links Sine.link mono is a secure, anti-jamming radio communication components designed for control and telemetry transmission in various unmanned systems, including UAVs (Unmanned Aerial Vehicles) and UGVs (Unmanned Ground Vehicles).	

4.1 Variant Models:

There were no variant models covered by this evaluation.

¹ Values are taken from documents provided by client, Intertek makes no claims of compliance for values other than those shown.



5 Output Power

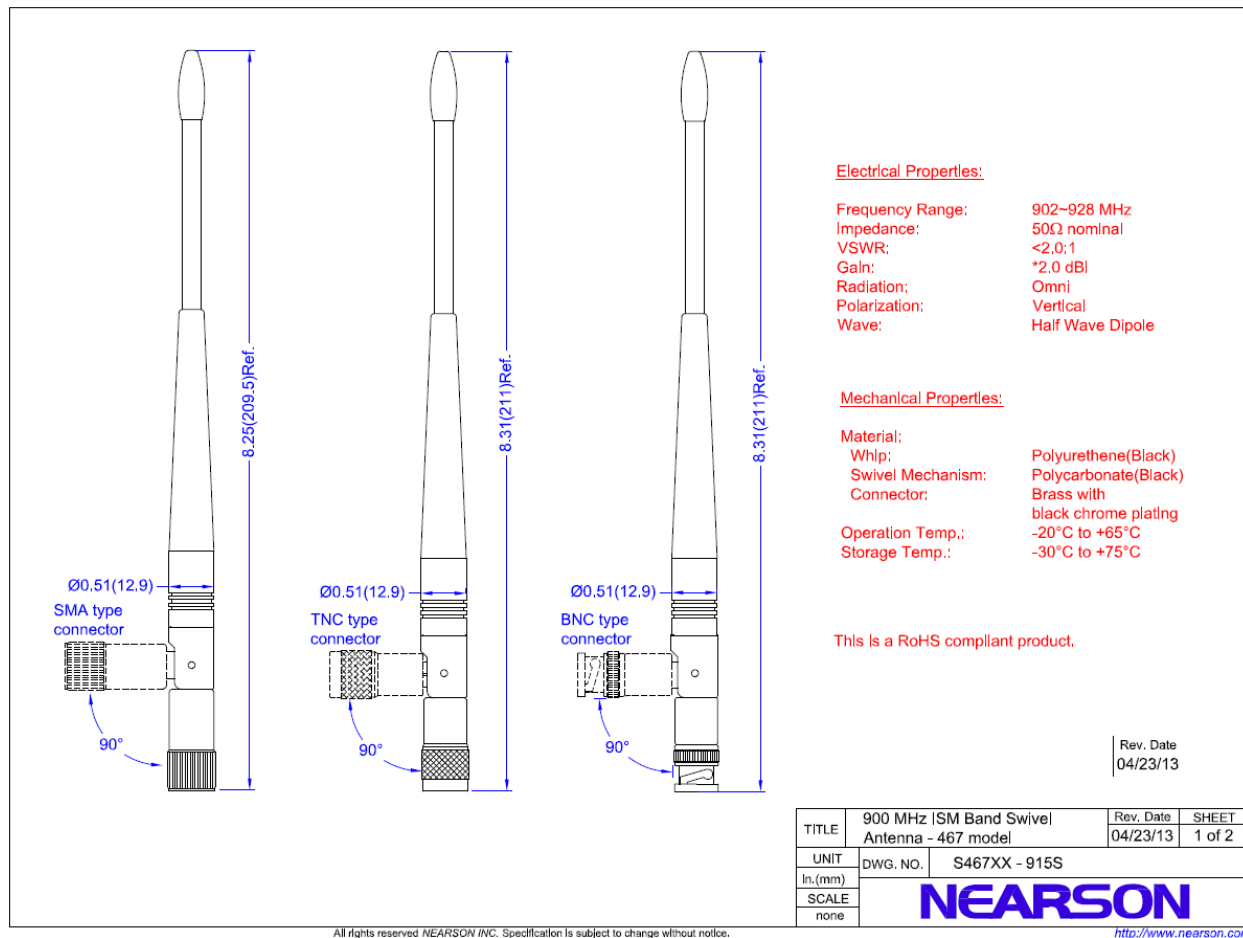
The output power for the Sine.link Mono was taken from Intertek report 106453082LEX-005. Deviations from the values below may affect compliance. Intertek does not make any claims of compliance for values other than shown below.

Frequency (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Output Power Limit (W)	EIRP Limit (W)
904	-12.66	0.0001	2	-10.66	0.0001	1	4
915	-12.69	0.0001	2	-10.69	0.0001	1	4
926	-12.90	0.0001	2	-10.90	0.0001	1	4



6 Antenna Gain

The antenna gain power for the 900 MHz ISM Band Swivel Antenna - 467 model, was taken from 900 MHz ISM Band Swivel Antenna - 467 model Data Sheet. Deviations from the values below may affect compliance. Intertek does not make any claims of compliance for values other than shown below.





7 FCC RF Exposure Limits

Title 47 CFR Part 1.1310(d)(2):

For operations within the frequency range of 300 kHz and 6 GHz (inclusive), the limits for maximum permissible exposure (MPE), derived from whole-body SAR limits and listed in Table 1 in paragraph (e)(1) of this section, may be used instead of whole-body SAR limits as set forth in paragraphs (a) through (c) of this section to evaluate the environmental impact of human exposure to RF radiation as specified in § 1.1307(b) of this part, except for portable devices as defined in § 2.1093 of this chapter as these evaluations shall be performed according to the SAR provisions in § 2.1093.

Table 1 to § 1.1310(e)(1)—Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(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
300–1,500			f/1500	<30
1,500–100,000			1.0	<30

f = frequency in MHz. * = Plane-wave equivalent power density.



8 Test Procedure

An RF exposure calculation was performed to show that the device was compliant with the general population exposure limits from FCC Title 47 CFR Part 1.1310(e)(1). The maximum power density was calculated for each transmitter at a separation distance of 20cm using the maximum conducted output power (including tune up tolerance) plus antenna gain, or measured EIRP.

For each transmitter the maximum power density at a 20cm distance using the formula:

$$EIRP(dBm) = \text{Conducted Power}(dBm) + \text{Antenna Gain}(dBi)$$

$$EIRP(mW) = 10^{EIRP(dBm)/10}$$

$$\text{Power Density} \left(\frac{mW}{cm^2} \right) = \frac{EIRP(mW)}{4\pi \cdot (20cm)^2}$$

$$\text{Power Density} \left(\frac{W}{m^2} \right) = \left(\frac{100cm}{1m} \right)^2 \left(\frac{1W}{1000mW} \right) \text{Power Density} \left(\frac{mW}{cm^2} \right)$$



9 Results:

The calculated maximum power density at 20cm was less than or equal to the limits for general population exposure in FCC Title 47 CFR Part 1.1310(e)(1).



9.1 FCC RF Exposure Data

Frequency (MHz)	Max Cond. Power (Inc. Tolerance) (dBm)	Antenna Gain (dB)	MPE Value @ 20cm (mW/cm ²)	MPE Limit (mW/cm ²)
904	-12.66	2	0.000017	0.6027
915	-12.69	2	0.000017	0.6100
926	-12.9	2	0.000016	0.6173

1 The EUT RFID calculations represent testing at 30cm. The EUT maximum conducted power does not exceed 27.5dBm.



10 Revision History

Revision Level	Date	Report Number	Prepared By	Reviewed By	Notes
0	1/27/2026	106453082LEX-005	JP	MC	Original Issue



END OF REPORT