

MAXIMUM PERMISSIBLE EXPOSURE EVALUATION REPORT

Applicant: Sveaverken Intelligent Technology (shenzhen) Co., Ltd.

Address: Building 13, Nangang Second Industrial Park, Xili Street,
Nanshan District, Shenzhen, China

Product Name: Auto Steer System

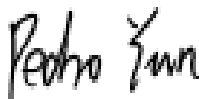
FCC ID: 2A9NI-F200

Standard(s): 47 CFR §1.1310, 47 CFR §2.1091,
47 CFR §15.247(i)

Report Number: 2502Q44550E-RF-00E

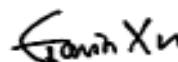
Report Date: 2025/4/10

The above device has been tested and found compliant with the requirement of the relative standards by Bay Area Compliance Laboratories Corp. (Dongguan).



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1. GENERAL INFORMATION

1.1 General Description of Equipment under Test

EUT Name:	Auto Steer System
EUT Model:	F200
Rated Input Voltage:	DC 9-36V Typical voltage: DC 12V
EUT Received Date:	2025/2/18
EUT Received Status:	Good

1.2 Accessory Information

EUT Main Components			
Accessory Description	Manufacturer	Model	Parameters
Control Terminal	Sveaverken	T2	Supply Voltage: 9-36VDC
GNSS Receiver	Sveaverken	G2	Operating Voltage: 9-36VDC
Electric Steering Wheel	Sveaverken	M2	Power Supply: 12VDC or 24VDC
Power Wiring Harness (With Switch Key)	Sveaverken	/	Unshielded without ferrite, 3.0Meter
Main Wiring Harness	Sveaverken	/	Unshielded without ferrite, 2.5Meter
Spare Main Wiring Harness	Sveaverken	/	Unshielded without ferrite, 2.0Meter
GNSS Receiver Wiring Harness	Sveaverken	/	Unshielded without ferrite, 4.0Meter
Angle Sensor (With Wiring Harness)	Sveaverken	/	Unshielded without ferrite, 3.5Meter
Angle Sensor Extension Wiring Harness	Sveaverken	/	Unshielded without ferrite, 2.0Meter
Radio Antenna (With Coaxial Harness)	Sveaverken	/	Unshielded without ferrite, 4.5Meter

1.3 Output Power and Antenna Gain Information

Operation Modes	Frequency (MHz)	Antenna Gain (dBi)	Conducted output power including Tune-up Tolerance [▲] (dBm)	EIRP/ERP (dBm)	Limit (dBm)
GSM 850	824-849	1.54	33	32.39	38.45
GSM 1900	1850-1910	1.41	31.5	32.91	33
WCDMA B2	1850-1910	1.41	25	26.41	33
WCDMA B4	1710-1755	2.66	25	27.66	30
WCDMA B5	824-849	1.54	25	24.39	38.45
LTE B2	1850-1910	1.41	25	26.41	33
LTE B4	1710-1755	2.66	25	27.66	30
LTE B5	824-849	1.54	25	24.39	38.45
LTE B7	2500-2570	1.04	25	26.04	33
LTE B12	699-716	0.31	25	23.16	34.77
LTE B13	777-787	2.06	25	24.91	34.77
LTE B25	1850-1915	1.41	25	26.41	33
LTE B26	814-824	2.04	25	24.89	50
LTE B26	824-849	1.54	25	24.39	38.45
LTE B38	2570-2620	1.04	25	26.04	33
LTE B41	2496-2690	1.06	25	26.06	33
Note: 1. ERP is for operation below 1 GHz and EIRP for above 1 GHz.					

2. RF EXPOSURE EVALUATION

2.1 RF Exposure Evaluation

2.1.1 Applicable Standard

According to subpart 15.247(i) and subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minutes)
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

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

According to §1.1310 and §2.1091 RF exposure is calculated.

2.1.2 Calculation formula:

Prediction of power density at the distance of the applicable MPE limit

$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm²);

P = power input to the antenna (in appropriate units, e.g., mW);

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

2.1.3 Calculated Data:

Operation Modes	Frequency (MHz)	Antenna Gain		Conducted output power including Tune-up Tolerance [▲]		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
		(dBi)	(numeric)	(dBm)	(mW)			
BDR/EDR	2402-2480	1.22	1.32	7.5	5.62	20	0.0015	1
BLE	2402-2480	1.22	1.32	5	3.16	20	0.0008	1
2.4G Wi-Fi	2412-2462	0.86	1.22	21.5	141.25	20	0.0343	1
GSM 850	824-849	1.54	1.426	25.81	381.07	20	0.1081	0.55
GSM 1900	1850-1910	1.41	1.384	22.81	190.99	20	0.0526	1.00
WCDMA B2	1850-1910	1.41	1.384	25	316.23	20	0.0871	1.00
WCDMA B4	1710-1755	2.66	1.845	25	316.23	20	0.1161	1.00
WCDMA B5	824-849	1.54	1.426	25	316.23	20	0.0897	0.55
LTE B2	1850-1910	1.41	1.384	25	316.23	20	0.0871	1.00
LTE B4	1710-1755	2.66	1.845	25	316.23	20	0.1161	1.00
LTE B5	824-849	1.54	1.426	25	316.23	20	0.0897	0.55
LTE B7	2500-2570	1.04	1.271	25	316.23	20	0.0800	1.00
LTE B12	699-716	0.31	1.074	25	316.23	20	0.0676	0.47
LTE B13	777-787	2.06	1.607	25	316.23	20	0.1011	0.52
LTE B25	1850-1915	1.41	1.384	25	316.23	20	0.0871	1.00
LTE B26	814-824	2.04	1.600	25	316.23	20	0.1007	0.54
LTE B26	824-849	1.54	1.426	25	316.23	20	0.0897	0.55
LTE B38	2570-2620	1.04	1.271	25	316.23	20	0.0800	1.00
LTE B41	2496-2690	1.06	1.276	25	316.23	20	0.0803	1.00

Note:

The Conducted output power including Tune-up Tolerance provided by manufacturer.

The device contains a certified WWAN module, FCC ID: XMR201903EG25G, certified on 03/29/2019

Simultaneous transmission:

BT/BLE and 2.4G WIFI can transmit simultaneously with WWAN:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

$$S_{BT}/S_{limit-BT} + S_{2.4G\ WIFI}/S_{limit-2.4G\ WIFI} + S_{WWAN}/S_{limit-WWAN}$$

$$= 0.0015/1.0 + 0.0343/1.0 + 0.1081/0.55$$

$$= 0.232$$

$$< 1.0$$

Result: Compliant. The device compliant Simultaneous transmission at 20cm distances.

EXHIBIT A - EUT PHOTOGRAPHS

Please refer to the attachment 2502Q44550E-RF-EXP EUT EXTERNAL PHOTOGRAPHS and 2502Q44550E-RF-INP EUT INTERNAL PHOTOGRAPHS.

******* END OF REPORT *******