



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.

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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/cm²)	Averaging Time (minutes)		
0.3-1.34	614	1.63	*(100)	30		
1.34–30	824/f	2.19/f	*(180/f²)	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/cm²)	MPE Limit (mW/cm²)
		(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:

$$\sum_{i} \frac{S_{i}}{S_{Limit,i}} \leq 1$$

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

=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.

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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 *****

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