

TEST REPORT

of

FCC CFR 47 part 1, 1.1307(b), 1.1310

FCC ID: GKM-XVD-302

Equipment Under Test : Video Telematics
Model Name : XVD-302
Variant Model Name(s) : XVD-302NA
Applicant : Xirgo Technologies LLC
Manufacturer : Xirgo Technologies LLC
Date of Receipt : 2026.04.08
Date of Test(s) : 2026.04.14
Date of Issue : 2026.04.14

In the configuration tested, the EUT complied with the standards specified above. This test report does not assure KOLAS accreditation.

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1. General Information

1.1. Testing Laboratory

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1.2. Details of Applicant

Applicant : Xirgo Technologies, LLC

Address : 2100 GOLF RD, STE 290, Rolling Meadows, ILL, United States, 60008

Contact Person : Michael, Donaghy

Phone No. : + 1 44 7710 307599

1.3. Details of Manufacturer

Company : Same as applicant

Address : Same as applicant

1.4. Description of EUT

Kind of Product	Video Telematics	
Model Name	XVD-302	
Variant Model Name	XVD-302NA	
Power Supply	DC 12, 24 V	
Frequency Range	2 402 MHz ~ 2 480 MHz (Bluetooth) 2 402 MHz ~ 2 480 MHz (Bluetooth Low Energy) 2 412 MHz ~ 2 462 MHz (11b/g/n_HT20) 5 180 MHz ~ 5 240 MHz (Band 1: 11a/n_HT20, 11ac_VHT20) 5 190 MHz ~ 5 230 MHz (Band 1: 11n_HT40, 11ac_VHT40) 5 210 MHz (Band 1: 11ac_VHT80) 5 260 MHz ~ 5 320 MHz (Band 2A: 11a/n_HT20, 11ac_VHT20) 5 270 MHz ~ 5 310 MHz (Band 2A: 11n_HT40, 11ac_VHT40) 5 290 MHz (Band 2A: 11ac_VHT80) 5 500 MHz ~ 5 700 MHz (Band 2C: 11a/n_HT20, 11ac_VHT20) 5 510 MHz ~ 5 670 MHz (Band 2C: 11n_HT40, 11ac_VHT40) 5 530 MHz ~ 5 610 MHz (Band 2C: 11ac_VHT80) 5 745 MHz ~ 5 825 MHz (Band 3: 11a/n_HT20, 11ac_VHT20) 5 755 MHz ~ 5 795 MHz (Band 3: 11n_HT40, 11ac_VHT40) 5 775 MHz (Band 3: 11ac_VHT80)	
	LTE Band 2: 1 850 MHz ~ 1 910 MHz LTE Band 4: 1 710 MHz ~ 1 755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2 500 MHz ~ 2 570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 14: 788 MHz ~ 798 MHz	LTE Band 17: 704 MHz ~ 716 MHz LTE Band 25: 1 850 MHz ~ 1 915 MHz LTE Band 26: 824 MHz ~ 849 MHz LTE Band 41: 2 496 MHz ~ 2 690 MHz LTE Band 66: 1 710 MHz ~ 1 780 MHz LTE Band 71: 663 MHz ~ 698 MHz
Modulation Technique	DSSS, OFDM, GFSK, $\pi/4$ DQPSK, 8DPSK, QPSK, 16QAM	
Antenna Type	Ant. 1: F-PCB Carrier Ant. 2: F-PCB Carrier Ant. 3: PCB Pattern	
Antenna Gain^{**}	Refer to the clause 1.6	
H/W Version	V100	
S/W Version	1.0.0	

1.5. Manufacturer Declaration

The device operates using three dedicated antennas with the following configurations

Antenna 1 serves as the Main antenna for LTE FDD bands and functions as the Diversity antenna for LTE TDD bands.

Antenna 2 serves as the Main antenna for LTE TDD bands and functions as the Diversity antenna for LTE FDD bands.

Antenna 3 is dedicated to Bluetooth (BT&BLE) and Wi-Fi operations.

1.6. Antenna Information

Ant. No.	Ant. Type	Support Band
Ant. 1	F-PCB Carrier	LTE B2, B4, B5, B7, B12, B13, B14, B17, B25, B26, B41, B66, B71
Ant. 2	F-PCB Carrier	LTE B41
Ant. 3	PCB pattern	Bluetooth, Bluetooth Low Energy, WLAN 2.4, WLAN 5

Band	Operating Frequency (MHz)	Antenna Peak Gain (dB i)		
		Ant. 1	Ant. 2	Ant. 3
LTE 2/25	1 850 ~ 1 915	-2.35		
LTE 4/66	1 710 ~ 1 780	-5.79		
LTE 26/5	824 ~ 849	-7.51		
LTE 7	2 500 ~ 2 570	1.35		
LTE 12/17	699 ~ 716	-3.59		
LTE 13	777 ~ 787	-4.58		
LTE 14	788 ~ 798	-4.58		
LTE 26	814 ~ 824	-6.63		
LTE 71	663 ~ 698	-4.73		
LTE 41	2 496 ~ 2 690		1.38	
Bluetooth	2 402 ~ 2 480			0.44
Bluetooth Low Energy	2 402 ~ 2 480			0.44
WLAN 2.4	2 412 ~ 2 462			0.44
WLAN 5	5 180 ~ 5 240			-1.31
	5 260 ~ 5 320			-0.35
	5 500 ~ 5 700			0.84
	5 745 ~ 5 825			-0.06

1.7. Summary of Test Results

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 1		
Section	Test Item(s)	Result
1.1307(b)(3)	RF Exposure Evaluation	Pass

1.8. Test Report Revision

Revision	Report Number	Date of Issue	Description
0	F690501-RF-RTL006874	2026.04.14	Initial

1.9. Description of Variant model(s)

Model	Model Name	Description
Basic	XVD-302	- Basic model
Variant	XVD-302NA	- The Bluetooth pairing button (a small physical button) has been removed for design considerations. - The Bluetooth pairing function is now included in the large physical button.

2. RF Exposure Evaluation

Test exemptions apply for devices used in general population/uncontrolled exposure environments, according to the SAR-based, or MPE-based exemption thresholds.

2.1. Blanket 1 mW Blanket Exemption

The 1 mW Blanket Exemption of § 1.1307(b)(3)(i)(A) applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power of no more than 1 mW, regardless of separation distance.

The 1 mW blanket exemption applies at separation distances less than 0.5 cm, including where there is no separation. This exemption shall not be used in conjunction with other exemption criteria other than those for multiple RF sources in paragraph § 1.1307(b)(3)(ii)(A).

The 1 mW exemption is independent of service type and covers the full range of 100 kHz to 100 GHz, but it shall not be used in conjunction with other exemption criteria or in devices with higher-power transmitters operating in the same time-averaging period. Exposure from such higher-power transmitters would invalidate the underlying assumption that exposure from the lower-power transmitter is the only contributor to SAR in the relevant volume of tissue.

2.2. MPE-based Exemption

General frequency and separation-distance dependent MPE-based effective radiated power (ERP) thresholds are in Table B.1 [Table 1 of § 1.1307(b)(1)(i)(C)] to support an exemption from further evaluation from 300 kHz through 100 GHz.

**Table 1: THRESHOLDS FOR SINGLE RF SOURCES
SUBJECT TO ROUTINE ENVIRONMENTAL EVALUATION**

RF Source Frequency			Minimum Distance			Threshold ERP
f_L (MHz)		f_H (MHz)	$\lambda_L / 2\pi$		$\lambda_H / 2\pi$	W
0.3	-	1.34	159 m	-	35.6 m	1 920 R ₂
1.34	-	30	35.6 m	-	1.6 m	3 450 R ₂ /f ²
30	-	300	1.6 m	-	159 mm	3.83 R ²
300	-	1 500	159 mm	-	31.8 mm	0.012 8 R ₂ f
1 500	-	100 000	31.8 mm	-	0.5 mm	19.2 R ²

Subscripts L and H are low and high; λ is wavelength.
From § 1.1307(b)(3)(i)(C), modified by adding Minimum Distance columns.

The table applies to any RF source (i.e., single fixed, mobile, and portable transmitters) and specifies power and distance criteria for each of the five frequency ranges used for the MPE limits. These criteria apply at separation distances from any part of the radiating structure of at least $\lambda/2\pi$. The thresholds are based on the general population MPE limits with a single perfect reflection, outside of the reactive near-field, and in the main beam of the radiator.

For mobile devices that are not exempt per Table B.1 [Table 1 of § 1.1307(b)(1)(i)(C)] at distances from 20 cm to 40 cm and in 0.3 GHz to 6 GHz, evaluation of compliance with the exposure limits in § 1.1310 is necessary if the ERP of the device is greater than ERP_{20 cm} in Formula (B.1) [repeated from § 2.1091(c)(1) and § 1.1307(b)(1)(i)(B)].

$$P_{th} \text{ (mW)} = ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases} \quad (\text{B. 1})$$

If the ERP is not easily obtained, then the available maximum time-averaged power may be used (i.e., without consideration of ERP only 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.

SAR-based exemptions are constant at separation distances between 20 cm and 40 cm to avoid discontinuities in the threshold when transitioning between SAR-based and MPE-based exemption criteria at 40 cm, considering the importance of reflections.

2.3. SAR-based Exemption

SAR-based thresholds are derived based on frequency, power, and separation distance of the RF source. The formula defines the thresholds in general for either available maximum time-averaged power or maximum time-averaged ERP, whichever is greater.

If the ERP of a device is not easily determined, such as for a portable device with a small form factor, the applicant may use the available maximum time-averaged power exclusively if the device antenna or radiating structure does not exceed an electrical length of $\lambda/4$.

As for devices with antennas of length greater than $\lambda/4$ where the gain is not well defined, but always less than that of a half-wave dipole (length $\lambda/2$), the available maximum time-averaged power generated by the device may be used in place of the maximum time-averaged ERP, where that value is not known.

The separation distance is the smallest distance from any part of the antenna or radiating structure for all persons, during operation at the applicable ERP. In the case of mobile or portable devices, the separation distance is from the outer housing of the device where it is closest to the antenna.

The SAR-based exemption formula of § 1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold P_{th} (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by Formula (B.2).

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}}(d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases} \quad (\text{B.2})$$

where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right)$$

and f is in GHz, d is the separation distance (cm), and $ERP_{20 \text{ cm}}$ is per Formula (B.1).

2.4. Simultaneous Transmission SAR Test Exemption with Respect to Multiple Exemption Criteria

Either SAR-based or MPE-based exemption may be considered for test exemption for fixed, mobile, or portable device exposure conditions; therefore, the contributions from each exemption in conjunction with the measured SAR (Evaluated_k term) shall be used to determine exemption for simultaneous transmission according to Formula (C.1) [repeated from § 1.1307(b)(3)(ii)(B)].

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

3. Test Result

3.1. SAR-based Exemption

Mode	Frequency Range (MHz)	Minimum Separation Distance (cm)	Maximum Average Power		Ant. Gain (dB i)	ERP		Limits P _{th} (mW)	Ratio ¹⁾	Result
			(dB m)	(mW)		(dB m)	(mW)			
LTE Band 2/25	1 850 ~ 1 915	20	25.0	316.23	-2.35	20.50	112.20	3 060.00	0.103	Pass
LTE Band 4/66	1 710 ~ 1 780	20	25.0	316.23	-5.79	17.06	50.82	3 060.00	0.103	Pass
LTE Band 26/5	824 ~ 849	20	25.0	316.23	-7.51	15.34	34.20	1 680.96	0.188	Pass
LTE Band 26	814 ~ 824	20	25.0	316.23	-6.63	16.22	41.88	1 660.56	0.190	Pass
LTE Band 7	2 500 ~ 2 570	20	25.0	316.23	1.35	24.20	263.03	3 060.00	0.103	Pass
LTE Band 12/17	699 ~ 716	20	25.0	316.23	-3.59	19.26	84.33	1 425.96	0.222	Pass
LTE Band 13	777 ~ 787	20	25.0	316.23	-4.58	18.27	67.14	1 585.08	0.200	Pass
LTE Band 14	788 ~ 798	20	25.0	316.23	-4.58	18.27	67.14	1 607.52	0.197	Pass
LTE Band 41	2 496 ~ 2 690	20	25.0	316.23	1.38	24.23	264.85	3 060.00	0.103	Pass
LTE Band 71	663 ~ 698	20	25.0	316.23	-4.73	18.12	64.86	1 352.52	0.234	Pass
Bluetooth	2 402 ~ 2 480	20	10.5	11.22	0.44	8.79	7.57	3 060.00	0.004	Pass
Bluetooth Low Energy	2 402 ~ 2 480	20	10.5	11.22	0.44	8.79	7.57	3 060.00	0.004	Pass
WLAN 2.4	2 412 ~ 2 462	20	18.5	70.79	0.44	16.79	47.75	3 060.00	0.023	Pass
WLAN 5	5 180 ~ 5 240	20	17.5	56.23	-1.31	14.04	25.35	3 060.00	0.018	Pass
	5 260 ~ 5 320	20	17.5	56.23	-0.35	15.00	31.62	3 060.00	0.018	Pass
	5 500 ~ 5 700	20	17.5	56.23	0.84	16.19	41.59	3 060.00	0.018	Pass
	5 745 ~ 5 825	20	17.5	56.23	-0.06	15.29	33.81	3 060.00	0.018	Pass

Note;

- Maximum average power = Maximum average target power (dB m) + Maximum tune up (dB).
- ERP (dB m) = Maximum average power (dB m) + Ant. gain (dB i) - 2.15 (dB)

1) A greater value between the ERP(dB m) and the Maximum average power(dB m) is applied.

3.2. RF Exposure Test Exemptions for Simultaneous Transmission

Mode	P _i /P _{th} Ratio Mode A	P _i /P _{th} Ratio Mode B	P _i /P _{th} Ratio Mode C	Σ P _i /P _{th} Ratio Mode A+B+C	Result
Bluetooth + WLAN 2.4 + WWAN	0.004	0.023	0.234	0.261	Pass
Bluetooth + WLAN 5 + WWAN	0.004	0.018	0.234	0.256	Pass

Conclusion: No SAR is required.

- End of the Test Report -