



Radio Frequency Exposure

Applicant : Comtrend Corporation

Address : 3F-1, 10 Lane 609, Chongxin Rd., Section 5,
Sanchong Dist, New Taipei City 241405, Taiwan

Equipment : Optical Network Terminals (ONTs)

Model No. : GRG-4366u, VG-8043u

Trade Name : **COMTREND**

FCC ID : L9VGRG4366

I HEREBY CERTIFY THAT :

The sample was received on Jan. 15, 2026 and the testing was completed on Mar. 19, 2026 at Cerpass Technology Corp. The test result refers exclusively to the test presented test model / sample. Without written approval of Cerpass Technology Corp., the test report shall not be reproduced except in full.

Approved by:

Mark Liao / Supervisor

Laboratory Accreditation:

Cerpass Technology Corporation Test Laboratory





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**History of this test report**

Report No.	Issued Date	Description
25120403-TRFCC04	Apr. 24, 2026	Original
25120403-TRFCC04-A	Oct. 01, 2026	Update application models: GRG-4366u, VG-8043u



1. Summary of Test Procedure and Test Results

1.1. Applicable Standards

FCC Rules and Regulations Part 2.1091

FCC Rule	Description of Test	Result
2.1091	Radio Frequency Exposure	PASS

*The lab has reduced the uncertainty risk factor from test equipment, environment and staff technicians which according to the standard on contract. Therefore, the test result will only be determined by standard requirement, measurement uncertainty evaluation is not considered.



2. Test Configuration of Equipment under Test

2.1. Feature of Equipment under Test

Operation Frequency Range	802.11b/g/n/(Turbo QAM)/ax/be: 2400-2483.5MHz 802.11a/n/ac/ax/be: 5150-5250MHz, 5250-5350MHz, 5470-5725MHz, 5725-5850MHz
Center Frequency Range	802.11b/g/n/(Turbo QAM)/ax/be: 2412MHz~2462MHz 802.11a/n/ac/ax/be: 5180-5240MHz, 5260-5320MHz, 5500-5720MHz, 5745-5825MHz
Modulation Type	WLAN: 2.4GHz: 802.11b: CCK, DQPSK, DBPSK 802.11g/n: BPSK, QPSK, 16QAM, 64QAM, 256QAM(TurboQAM) 802.11ax: BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM 802.11be: BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM, 4096QAM 5GHz: 802.11n/a: BPSK, QPSK, 16QAM, 64QAM 802.11ac: BPSK, QPSK, 16QAM, 64QAM, 256QAM 802.11ax: BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM 802.11be: BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM, 4096QAM
Modulation Technology	DSSS, OFDM, OFDMA
Data Rate	WLAN: 2.4GHz: 802.11b: 1, 2, 5.5, 11Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps 802.11n: MCS0 – MCS31, HT20/40 MCS0 – MCS9, VHT20/40(TurboQAM) 802.11ax: MCS0 – MCS11, HE20/40 802.11be: MCS0 – MCS13, EHT20/40 5GHz: 802.11a: 6, 9, 12, 18, 24, 36, 48, 54Mbps 802.11n: MCS0 – MCS31, HT20/40 802.11ac: MCS0 – MCS9, VHT20/40/80/160 802.11ax: MCS0 – MCS11, HE20/40/80/160 802.11be: MCS0 – MCS13, EHT20/40/80/160
Antenna Type	Dipole antenna
Antenna Gain	2400-2483.5MHz: ANT A 5.2dBi, ANT B: 6.0dBi ANT C: 6.5dBi, ANT D: 3.8dBi 5150-5250MHz: ANT E: 4.5dBi, ANT F: 3.7dBi, ANT G: 5.6dBi, ANT H: 3.0dBi 5250-5350MHz: ANT E: 4.1dBi, ANT F: 3.7dBi, ANT G: 5.2dBi, ANT H: 2.6dBi 5470-5725MHz: ANT E: 4.4dBi, ANT F: 3.4dBi, ANT G: 4.0dBi, ANT H: 2.8dBi 5725-5850MHz: ANT E: 4.4dBi, ANT F: 4.3dBi, ANT G: 4.5dBi, ANT H: 2.9dBi
Adapter	Brand: Amigo, Model: AMS241-1203000FU

Note:

1. EUT support TPC Function.
2. EUT support Master Mode.
3. Indoor access point
4. ANT I : Wifi 2.4GHz RX only, ANT J: Wifi 5GHz RX only
5. 802.11ac/ax/be support Beamforming
6. For more details, please refer to the User's manual of the EUT.



The differences between all model numbers as follow:

Model	XGS-PON Fiber	10G-WAN	Remark
GRG-4366u	V	--	The WAN port uses a different interface.
VG-8043u	--	V	

Note: After engineering evaluation, GRG-4366u are worst case , hence are used at test report.



2.2. General Information of Test

Organization	Cerpass Technology Corp.		
☒ Test Site	Cerpass Technology Corporation Test Laboratory Address: No.10, Ln. 2, Lianfu St., Luzhu Dist., Taoyuan City 33848, Taiwan (R.O.C.) Tel: +886-3-3226-888 Fax: +886-3-3226-881		
	FCC	TW1439, TW1079	
	IC	4934E-1, 4934E-2	
Frequency Range Investigated	Conducted: from 150kHz to 30 MHz Radiation: from 30 MHz to 40,000MHz		
Test Distance	The test distance of radiated emission from antenna to EUT is 3 M.		

2.4G-Non-Beamforming

Test Item	Test Site	Test period	Environmental Conditions	Tested By
RF Conducted	RFCON02-NK	2026/03/05	27.3°C / 50%	Leon Huang
RF Conducted	RFCON02-NK	2026/03/06	25.5°C / 45%	Leon Huang
RF Conducted	RFCON02-NK	2026/03/07	23.5°C / 48%	Leon Huang
RF Conducted	RFCON02-NK	2026/03/08	24.5°C / 50%	Leon Huang
RF Conducted	RFCON02-NK	2026/03/09	24.8°C / 49%	Leon Huang

2.4G-Beamforming

Test Item	Test Site	Test period	Environmental Conditions	Tested By
RF Conducted	RFCON02-NK	2026/03/10	22.9°C / 46%	Leon Huang

**5G-Non-Beamforming**

Test Item	Test Site	Test period	Environmental Conditions	Tested By
RF Conducted	RFCON02-NK	2026/03/10	22.9°C / 46%	Leon Huang
RF Conducted	RFCON02-NK	2026/03/11	23.3°C / 48%	Leon Huang
RF Conducted	RFCON02-NK	2026/03/13	22.7°C / 51%	Leon Huang
RF Conducted	RFCON02-NK	2026/03/14	25.2°C / 47%	Leon Huang
RF Conducted	RFCON02-NK	2026/03/15	24.8°C / 46%	Leon Huang

5G-Beamforming

Test Item	Test Site	Test period	Environmental Conditions	Tested By
RF Conducted	RFCON02-NK	2026/03/10	22.9°C / 46%	Leon Huang
RF Conducted	RFCON02-NK	2026/03/11	23.3°C / 48%	Leon Huang
RF Conducted	RFCON02-NK	2026/03/13	22.7°C / 51%	Leon Huang
RF Conducted	RFCON02-NK	2026/03/14	25.2°C / 47%	Leon Huang
RF Conducted	RFCON02-NK	2026/03/15	24.8°C / 46%	Leon Huang
RF Conducted	RFCON02-NK	2026/03/19	24.9°C / 51%	Leon Huang



2.3. Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

2.4G

Measurement Item	Uncertainty
AC Power Line Conduction(150K~30MHz)	±3.2dB
Radiated Spurious Emission(9KHz~30MHz)	±3.4dB
Radiated Spurious Emission(30MHz~1GHz)	±5.2dB
Radiated Spurious Emission(1GHz~40GHz)	±5.2dB
Conducted Spurious Emission	±2.1dB
6dB Bandwidth	±4.4%
20dB Bandwidth	±4.5%
Occupied Bandwidth	±4.4%
Peak Output Power(Conducted Power Meter)	±1.1dB
Dwell Time / Deactivation Time	±3.5%
Power Spectral Density	±2.0dB
Duty Cycle	±3.5%

5G

Measurement Item	Uncertainty
AC Power Line Conduction(150K~30MHz)	±3.2dB
Radiated Spurious Emission(9KHz~30MHz)	±3.4dB
Radiated Spurious Emission(30MHz~1GHz)	±5.2dB
Radiated Spurious Emission(1GHz~40GHz)	±5.2dB
6dB Bandwidth	±4.4%
26dB Bandwidth	±4.5%
Occupied Bandwidth	±4.4%
Peak Output Power(Conducted Power Meter)	±1.1dB
Power Spectral Density	±2.0dB
Duty Cycle	±3.5%
Frequency Stability	±223.073Hz



3. Test Equipment and Ancillaries Used for Tests

Test Item	RF Conducted				
Test Site	RFCON02-NK				
Instrument	Manufacturer	Model No	Serial No	Calibration Date	Valid Date
CAX Signal Analyzer	KEYSIGHT	N9000B	MY57100339	2025/10/23	2026/10/22
Attenuator	KEYSIGHT	8491B	MY39250705	2025/09/04	2026/09/03
Power Meter	Anritsu	ML2495A	2034001	2025/08/27	2026/08/26
Power Sensor	Anritsu	MA2411B	1911175	2025/08/27	2026/08/26



4. Radio Frequency Exposure

4.1. Applicable Standards

☐ §1.1307(b)(3)(i)(A)	The available maximum time-averaged power is no more than 1 mW, regardless of separation distance.																																																	
☒ §1.1307(b)(3)(i)(c)	ERP is below a threshold calculated based on the distance , R between the person and t antenna / radiating structure, where $R > \lambda / 2 \pi$. TABLE B.1—THRESHOLDS FOR SINGLE RF SOURCES SUBJECT TO ROUTINE ENVIRONMENTAL EVALUATION <table><tr><th colspan="3">RF Source Frequency</th><th colspan="3">Minimum Distance</th><th>Threshold ERP</th></tr><tr><th>f_L MHz</th><th></th><th>f_H MHz</th><th>$\lambda_L / 2\pi$</th><th></th><th>$\lambda_H / 2\pi$</th><th>W</th></tr><tr><td>0.3</td><td>–</td><td>1.34</td><td>159 m</td><td>–</td><td>35.6 m</td><td>1,920 R²</td></tr><tr><td>1.34</td><td>–</td><td>30</td><td>35.6 m</td><td>–</td><td>1.6 m</td><td>3,450 R²/<i>f</i>²</td></tr><tr><td>30</td><td>–</td><td>300</td><td>1.6 m</td><td>–</td><td>159 mm</td><td>3.83 R²</td></tr><tr><td>300</td><td>–</td><td>1,500</td><td>159 mm</td><td>–</td><td>31.8 mm</td><td>0.0128 R²<i>f</i></td></tr><tr><td>1,500</td><td>–</td><td>100,000</td><td>31.8 mm</td><td>–</td><td>0.5 mm</td><td>19.2R²</td></tr></table> Subscripts L and H are low and high; λ is wavelength. From § 1.1307(b)(3)(i)(C), modified by adding Minimum Distance columns.	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 / <i>f</i> ²	30	–	300	1.6 m	–	159 mm	3.83 R ²	300	–	1,500	159 mm	–	31.8 mm	0.0128 R ² <i>f</i>	1,500	–	100,000	31.8 mm	–	0.5 mm	19.2R ²
RF Source Frequency			Minimum Distance			Threshold ERP																																												
f_L MHz		f_H MHz	$\lambda_L / 2\pi$		$\lambda_H / 2\pi$	W																																												
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300	–	1,500	159 mm	–	31.8 mm	0.0128 R ² <i>f</i>																																												
1,500	–	100,000	31.8 mm	–	0.5 mm	19.2R ²																																												
☒ § 1.1307(b)(3)(i)(B).	Device operates between 300 MHz and 6 GHz and the maximum time-averaged power or effective radiated power (ERP), whichever is greater, $\leq P_{th}$ $P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$ Where $x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right) \text{ and } f \text{ is in GHz;}$ and $ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases}$ d = the separation distance (cm);																																																	



4.2. EUT Specification

Frequency band (Operating)	☒ WLAN: 2412MHz ~ 2462MHz ☒ WLAN: 5150MHz ~ 5250MHz ☒ WLAN: 5250MHz ~ 5350MHz ☒ WLAN: 5470MHz ~ 5725MHz ☒ WLAN: 5725MHz ~ 5850MHz ☐ Bluetooth: 2402MHz ~ 2480MHz
Device category	☐ Portable (<20cm separation) ☒ Mobile (>20cm separation)
Antenna diversity	☐ Single antenna ☒ Multiple antennas ☐ Tx diversity ☐ Rx diversity ☒ Tx/Rx diversity
Evaluation applied	☐ Blanket 1 mW Blanket Exemption ☒ MPE-based Exemption ☐ SAR-based Exemption
Remark: The maximum conducted output power is <u>27.10dBm (513.111mW)</u> at <u>2437MHz</u> (with <u>6.5dBi antenna</u> Non-Beamforming 2.4G The maximum conducted output power is <u>23.90dBm (245.681mW)</u> at <u>2437MHz</u> (with <u>6.5dBi antenna</u> Beamforming 2.4G The maximum conducted output power is <u>28.41dBm (693.318mW)</u> at <u>5795MHz</u> (with <u>4.5dBi antenna</u> Non-Beamforming 5G The maximum conducted output power is <u>24.76dBm (299.050mW)</u> at <u>5795MHz</u> (with <u>4.5dBi antenna</u> Beamforming 5G	



4.3. Result

MIMO

Non-Beamforming 2.4G

Channel Frequency (MHz)	Max. Conducted output power(dBm)	Max. Tune up power (dBm)	Antenna Gain(dBi)	Max.Tune up e.r.p. Power (dBm)	Max.Tune up e.r.p. Power (mW)	Limit (mW)
2412-2462	27.10	27.60	6.5	31.95	1567.51	3060

No non-compliance noted.

Beamforming 2.4G

Channel Frequency (MHz)	Max. Conducted output power(dBm)	Max. Tune up power (dBm)	Antenna Gain(dBi)	Max.Tune up e.r.p. Power (dBm)	Max.Tune up e.r.p. Power (mW)	Limit (mW)
2412-2462	23.90	24.40	9.5	31.75	1497.52	3060

No non-compliance noted.

Non-Beamforming 5G

Channel Frequency (MHz)	Max. Conducted output power(dBm)	Max. Tune up power (dBm)	Antenna Gain(dBi)	Max.Tune up e.r.p. Power (dBm)	Max.Tune up e.r.p. Power (mW)	Limit (mW)
5180-5240	27.31	27.81	5.6	31.26	1336.60	3060
5260-5320	23.98	24.48	5.2	27.53	565.90	3060
5500-5720	23.88	24.38	4.4	26.63	460.52	3060
5745-5825	28.41	28.91	4.5	31.26	1336.39	3060

No non-compliance noted.

Beamforming 5G

Channel Frequency (MHz)	Max. Conducted output power(dBm)	Max. Tune up power (dBm)	Antenna Gain(dBi)	Max.Tune up e.r.p. Power (dBm)	Max.Tune up e.r.p. Power (mW)	Limit (mW)
5180-5240	23.82	24.32	8.5	30.67	1165.85	3060
5260-5320	20.20	20.70	8.8	27.35	543.76	3060
5500-5720	21.16	21.66	8.6	28.11	647.14	3060
5745-5825	24.76	25.26	8.1	31.21	1320.52	3060

No non-compliance noted.



SISO

2.4G-ANT A

Channel Frequency (MHz)	Max. Conducted output power(dBm)	Max. Tune up power (dBm)	Antenna Gain(dBi)	Max.Tune up e.r.p. Power (dBm)	Max.Tune up e.r.p. Power (mW)	Limit (mW)
2412-2462	20.87	21.37	5.2	24.42	276.69	3060

2.4G-ANT B

Channel Frequency (MHz)	Max. Conducted output power(dBm)	Max. Tune up power (dBm)	Antenna Gain(dBi)	Max.Tune up e.r.p. Power (dBm)	Max.Tune up e.r.p. Power (mW)	Limit (mW)
2412-2462	21.44	21.94	6	25.79	379.31	3060

2.4G-ANT C

Channel Frequency (MHz)	Max. Conducted output power(dBm)	Max. Tune up power (dBm)	Antenna Gain(dBi)	Max.Tune up e.r.p. Power (dBm)	Max.Tune up e.r.p. Power (mW)	Limit (mW)
2412-2462	21.46	21.96	6.5	26.31	427.56	3060

2.4G-ANT D

Channel Frequency (MHz)	Max. Conducted output power(dBm)	Max. Tune up power (dBm)	Antenna Gain(dBi)	Max.Tune up e.r.p. Power (dBm)	Max.Tune up e.r.p. Power (mW)	Limit (mW)
2412-2462	20.94	21.44	3.8	23.09	203.70	3060



SISO

5G-ANT E

Channel Frequency (MHz)	Max. Conducted output power(dBm)	Max. Tune up power (dBm)	Antenna Gain(dBi)	Max.Tune up e.r.p. Power (dBm)	Max.Tune up e.r.p. Power (mW)	Limit (mW)
5180-5240	21.36	21.86	4.5	24.21	263.63	3060
5260-5320	17.63	18.13	4.1	20.08	101.86	3060
5500-5720	17.58	18.08	4.4	20.33	107.89	3060
5745-5825	22.17	22.67	4.4	24.92	310.46	3060

5G-ANT F

Channel Frequency (MHz)	Max. Conducted output power(dBm)	Max. Tune up power (dBm)	Antenna Gain(dBi)	Max.Tune up e.r.p. Power (dBm)	Max.Tune up e.r.p. Power (mW)	Limit (mW)
5180-5240	21.15	21.65	3.7	23.20	208.93	3060
5260-5320	17.85	18.35	3.7	19.90	97.72	3060
5500-5720	17.68	18.18	3.4	19.43	87.70	3060
5745-5825	22.12	22.62	4.3	24.77	299.92	3060

5G-ANT G

Channel Frequency (MHz)	Max. Conducted output power(dBm)	Max. Tune up power (dBm)	Antenna Gain(dBi)	Max.Tune up e.r.p. Power (dBm)	Max.Tune up e.r.p. Power (mW)	Limit (mW)
5180-5240	21.26	21.76	5.6	25.21	331.89	3060
5260-5320	18.06	18.56	5.2	21.61	144.88	3060
5500-5720	17.69	18.19	4	20.04	100.93	3060
5745-5825	22.27	22.77	4.5	25.12	325.09	3060

5G-ANT H

Channel Frequency (MHz)	Max. Conducted output power(dBm)	Max. Tune up power (dBm)	Antenna Gain(dBi)	Max.Tune up e.r.p. Power (dBm)	Max.Tune up e.r.p. Power (mW)	Limit (mW)
5180-5240	21.03	21.53	3	22.38	172.98	3060
5260-5320	17.96	18.46	2.6	18.91	77.80	3060
5500-5720	17.75	18.25	2.8	18.90	77.62	3060
5745-5825	22.09	22.59	2.9	23.34	215.77	3060

**Maximum Permissible Exposure (Co-location)**

Non-Beamforming

Modulation Type	Channel Frequency (MHz)	Max. Conducted output power (dBm)	Max. Tune up power (dBm)	Antenna Gain(dBi)	Distance (cm)	Max.Tune up e.r.p. Power(mW)	Limit (mW)	MPE Ratio
11b	2412-2462	27.10	27.60	6.5	20	1567.51	3060.00	0.51
11a	5180-5240	27.31	27.81	5.6	20	1336.60	3060.00	0.44
Co-location Total								0.95
Σ MPE ratios Limit								1.00

Beamforming

Modulation Type	Channel Frequency (MHz)	Max. Conducted output power (dBm)	Max. Tune up power (dBm)	Antenna Gain(dBi)	Distance (cm)	Max.Tune up e.r.p. Power(mW)	Limit (mW)	MPE Ratio
11be EHT20	2412-2462	23.90	24.40	9.5	20	1497.52	3060.00	0.49
11be40	5745-5825	24.76	25.26	8.1	20	1320.52	3060.00	0.43
Co-location Total								0.92
Σ MPE ratios Limit								1.00

-----THE END OF REPORT-----