

Electromagnetic Compatibility Test Report

Tests Performed on a New Cosmos Electric Co., Ltd., DBA DeNova Detect

Methane Detector with Radio Transciever, Model 810NLR

Radiometrics Document RP-10101



Product L FCC IE Equipm 900 MH	Product Detail: FCC ID: 2ARF2ML-340LR Equipment type: DSS 900 MHz									
Test Star US CF FCC Pa	Test Standards: US CFR Title 47, Chapter I, FCC Part 15 Subpart C FCC Part 15 CFR Title 47: 2025									
This re FCC P	This report concerns: Original Grant for Certification FCC Part 15.247									
Tests Per	formed For:		Test Facility:							
New C	osmos Electric Co., L	.td.	Radiometrics Midwest Corporation							
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Osaka	5320036		(815) 293-0772							
Test Date	e(s):									
Januar	y 16 to February 11, 20	025								
Docum	ent RP-10101 Revisio	ns:								
Rev.	ev. Issue Date Revised By									
0	March 25, 2025	-								

Testing of: New Cosmos Electric Co., Ltd. DBA DeNova Detect, Model 810NLR, Methane Detector with Radio

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Testing of: New Cosmos Electric Co., Ltd. DBA DeNova Detect, Model 810NLR, Methane Detector with Radio

1.0 ADMINISTRATIVE DATA

Equipment Under Test:									
A New Cosmos Electric Co., Ltd. DBA DeNova Detect, Methane Detector with Radio									
Model: 810NLR Serial Number: RMC-03									
This will be referred to as the EUT in this Report									
Date EUT Received at Radiometrics:	Test Date(s):								
January 15, 2025	January 16 to February 11, 2025								
Test Report Written and Authorized By:	Test Witnessed By:								
Joseph Strzelecki	The tests were not witnessed by personnel from								
Senior EMC Engineer	New Cosmos Electric Co., Ltd.								
Radiometrics' Personnel Responsible for Test:	EUT Checked By:								
Joseph Strzelechi 03/25/2025	Joseph Strzelecki Radiometrics								
Date									
Joseph Strzelecki									
Senior EMC Engineer									
NARTE EMC-000877-NE									
Chris D'Alessio									
EMC Technician									

2.0 TEST SUMMARY AND RESULTS

The EUT (Equipment Under Test) is a Methane Detector with Radio, Model 810NLR, manufactured by New Cosmos Electric Co., Ltd. DBA DeNova Detect. The detailed test results are presented in a separate section. The following is a summary of the test results.

Er	nissions Tests Resul	ts
Environmental Phenomena	Frequency Range	Test Result
Carrier Frequency Separation	902-928 MHz	Pass
Number of Hopping Frequencies	902-928 MHz	Pass
Time of Occupancy (Dwell Time)	902-928 MHz	Pass
20 dB Bandwidth Test	902-928 MHz	Pass
Peak Output Power	902-928 MHz	Pass
Band-edge Compliance of RF	902-928 MHz	Pass
Conducted Emissions		
Spurious RF Conducted Emissions	30-9300 MHz	Pass
Spurious Radiated Emissions	30-9300 MHz	Pass
RF Radiated Emissions (Unintential	30-5,000 MHz	Pass
Radiation Receive mode)		
AC conducted Emissions	0.15-30 MHz	Not Required; No AC Power
		Battery powered

IEC 17025 Decision Rule:

The declaration of pass or fail is based on the specifications listed above. The declaration of pass or fail did not consider measurement uncertainty.

3.0 EQUIPMENT UNDER TEST (EUT) DETAILS

3.1 EUT Description

The EUT is a Methane Detector with Radio, Model 810NLR, manufactured by New Cosmos Electric Co., Ltd. DBA DeNova Detect. The EUT was in good working condition during the tests, with no known defects.

3.1.1 FCC Section 15.203 & RSS-GEN Antenna Requirements

The antenna is permanently attached to the printed circuit board. The antenna is internal to the EUT and it is not readily available to be modified by the end user. Therefore, it meets the 15.203 Requirements.

Since the measurements at the antenna port are used to determine the RF output power, RSS-GEN section 6.8 requires that the effective gain of the products antenna be stated, based on a measurement or on data from the antenna's manufacturer.

4.0 TESTED SYSTEM DETAILS

4.1 Tested System Configuration

The system was configured for testing in a typical fashion. The EUT was placed on an 80-cm or 150 cm high, nonconductive test stand. The testing was performed in conditions as close as possible to installed conditions. Wiring was consistent with manufacturer's recommendations.

The EUT was tested as a stand-alone device. Power was supplied with a new battery.

Tested System Configuration List

Item	Description Typ	e*	Manufacturer	Model Number	Serial Number
1	Methane Detector with Radio	E	New Cosmos Electric Co., Ltd. DBA DeNova Detect	810NLR	RMC-03

* Type: E = EUT, P = Peripheral, S = Support Equipment; H = Host Computer

Type of modulation including the bit rate and symbol rate	LoRa modulation(SF10):122.1Sps, 976.6bps
Name and version of the test software used to exercise	Software: FSKLoRaCmd.exe
the device	Version: v0.0.02
Power settings used for the purpose of exercising the	22dBm
device	
Firmware number of the transmitter	V0015

4.2 EUT Operating Modes

The EUT was in its normal LoRa modulation during the tests. It was tested as a stand-alone battery powered device, since that is the configuration in the final installation.

4.3 Special Accessories

No special accessories were used during the tests in order to achieve compliance.

4.4 Equipment Modifications

No modifications were made to the EUT at Radiometrics' test facility in order to comply with the standards listed in this report.

5.0 TEST SPECIFICATIONS

Document	Date	Title
FCC	2025	Code of Federal Regulations Title 47, Chapter 1, Federal
CFR Title 47		Communications Commission, Part 15 - Radio Frequency Devices

6.0 TEST PROCEDURE DOCUMENTS

The tests were performed using the procedures from the following specifications:

Document	Date	Title
ANSI C63.4-2014	2014	Methods of Measurement of Radio Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
ANSI C63.10-2013	2013	American National Standard for Testing Unlicensed Wireless Devices
558074 D01 DTS Meas Guidance	2019	Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247; v05r02

7.0 RADIOMETRICS' TEST FACILITIES

The results of these tests were obtained at Radiometrics Midwest Corp. in Romeoville, Illinois, USA. Radiometrics is accredited by A2LA (American Association for Laboratory Accreditation) to conform to ISO/IEC 17025: 2017 "General Requirements for the Competence of Calibration and Testing Laboratories". Radiometrics' Lab Code is 121191 and Certification Number is 1495.01. Radiometrics' scope of accreditation includes all of the test methods listed herein. A copy of the accreditation can be accessed on our web site (www.radiomet.com). Radiometrics accreditation status can be verified at A2LA's web site (www.a2la2.org).

The following is a list of shielded enclosures located in Romeoville, Illinois used during the tests:

- Chamber E: Is a custom-made anechoic chamber that measures 52' L X 30' W X 18' H. The walls and ceiling are fully lined with RF absorbers. Pro-shield of Collinsville, Oklahoma manufactured the chamber. The floor has a 9' x 9' section of microwave absorber for testing above 1 GHz.
- Test Station F: Is an area that measures 10' D X 12' W X 10' H. The floor and back wall are metal shielded. This area is used for conducted emissions measurements.

A separate ten-foot long, brass plated, steel ground rod attached via a 6-inch copper braid grounds each of the above chambers. Each enclosure is also equipped with low-pass power line filters.

The FCC has accepted these sites as test site number US1065. The FCC test site Registration Number is 732175. Details of the site characteristics are on file with the Industry Canada as site number IC 3124A with a CAB ID of US0224.

A complete list of the test equipment is provided herein. The calibration due dates are indicated on the equipment list. The equipment is calibrated in accordance to ANSI/NCSL Z540-1 with traceability to the National Institute of Standards and Technology (NIST).

8.0 DEVIATIONS AND EXCLUSIONS FROM THE TEST SPECIFICATIONS

There were no deviations or exclusions from the test specifications.

9.0 CERTIFICATION

Radiometrics Midwest Corporation certifies that the data contained herein was taken under conditions that meet or exceed the requirements of the test specification and the data contained herein was taken with calibrated test equipment. The results relate only to the EUT listed herein.

10.0 TEST EQUIPMENT TABLE

					Frequency	Cal	
RMC ID	Manufacturer	Description	Model No.	Serial No.	Range	Period	Cal Date
AMP-05	RMC/Celeritek	Pre-amplifier	MW110G	1001	1.0-12 GHz	12 Mo.	01/31/24
ANT-66	ETS-Lindgren	Horn Antenna	3115	62580	1.0-18 GHz	24 Mo.	03/16/23
ANT-68	EMCO	Log-Periodic Ant.	93146	9604-4456	200-1000 MHz	24 Mo.	01/30/24
ANT-80	AH Systems	Bicon Antenna	SAS-540	294	20-330 MHz	24 Mo.	01/27/25
ATT-45	Narda	Attenuator (10 dB)	779C-10dB	03078	DC-18 GHz	24 Mo.	05/31/24
ATT-66	Inmet	Attenuator(6dB)	6B10W-6dB	ATT-66	DC-10 GHz	24 Mo	05/31/24
CAB-1221	Storm	Coaxial Cable	N/A	1221	DC-18 GHz	24 Mo.	12/18/23
CAB-114G	Teledyne	Coaxial Cable	N/A	N/A	DC-25 GHz	24 Mo.	12/18/23
CAB-160B	Teledyne	Coaxial Cable	N/A	N/A	DC-25 GHz	24 Mo.	12/18/23
CAB-507A	Teledyne	Coaxial Cable	N/A	N/A	DC-25 GHz	24 Mo.	12/18/23
HPF-07	Mini-Circuits	High Pass Filter	VHF-1500+	31121	1.7-10 GHz	24 Mo.	05/22/24
REC-31	Agilent	Spectrum Analyzer	E7402A	US41160415	9kHz-3 GHz	24 Mo.	06/23/23
REC-44	Agilent	Spectrum Analyzer	E4440A	US40420673	3Hz-26.5 GHz	24 Mo.	07/18/24
THM-03	Fluke	Temp/Humid Meter	971	95850465	N/A	24 Mo.	04/14/23

Note: All calibrated equipment is subject to periodic checks.

Software Company	Test Software Name	Version	Applicable Tests
Radiometrics	REREC11D	07.21.22	RF Radiated Emissions (FCC Part 15 & EN 55032)
Agilent	PSA/ESA-E/L/EMC	2.4.0.42	Bandwidth and screen shots

11.0 TEST SECTIONS

11.1 Carrier Frequency Separation

The EUT has its hopping function enabled. The spectrum analyzer was set to the MAX HOLD mode to read peak emissions. The sweep was set to AUTO. The trace was allowed to stabilize. The marker-delta function was used to determine the separation between the peaks of the adjacent channels.

As per FCC 15.247 (a) (1), frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Since the 20 dB bandwidth is 128.1 kHz, the minimum seperation shall be at least 128.1 kHz.

Tested by: Joseph Strzelecki Test Date: February 11, 2025 Test Equipment: REC-44; ATT-45



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11.2 Number of Hopping Frequencies

The EUT has its hopping function enabled. The spectrum analyzer was set to the MAX HOLD mode to read peak emissions. The sweep was set to AUTO. The trace was allowed to stabilize.

Tested by: Joseph Strzelecki Test Date: February 11, 2025 Test Equipment: REC-44; ATT-45



32 channels from 902 to 908.6 MHz



Testing of: New Cosmos Electric Co., Ltd. DBA DeNova Detect, Model 810NLR, Methane Detector with Radio



11.3 Time of Occupancy (Dwell Time)

The EUT has its hopping function enabled. The spectrum analyzer was set to the MAX HOLD mode to read peak emissions. The span was set to zero. The marker-delta function to determine the dwell time. The spectrum analyzer was connected to the EUT Directly. The test procedures are in accordance with ANSI C63.10 section 7.8.4.

In accordance with FCC 15.247 (a)(1), the time of occupancy should be less than 400 mSec in a period of 20 seconds.

The time of occupancy was measured to be at most 372.9 mS. On any given channel, this pulse will occur less than once every 30 seconds in normal operation. This is set in firmware and cannot be changed by the end user.

Tested by: Joseph Strzelecki Test Date: March 13, 2025 Test Equipment: REC-31; ATT-45

🔆 🔆 A	jilent	11:38:28 M	ar 13, 2025	5				RΙ	-		
Time of Ref 5 d	^r Occupa I Bm	ncy	At	ten 15 dB						Mkr1 ∆ 3 -1.	71.9 ms 415 dB
Peak Log											*
10 dB/	1vvv	WWWWW	YW WYY	YVYYW	WWW.	(WWWW)	WWWW	rwn			
W1 S2	1R							:			
S3 VC	ч								D raft	fungtingun, Hérétanék	an a
Start 9 Res BV	02.3 MH: V 120 kH	z z		<u> </u>	/BW 300 k	Hz		Swee	ep 5	Stop 90 00 ms (10)2.3 MHz 00 pts)
Undefi	ned head	ler									
🔆 Aç	gilent	12:22:54 M	ar 13, 2025	5				RI	-		
Time of Ref5d	Occupa I Bm	ncy	At	ten 15 dB						Mkr1∆ 3 1	72.9 ms .205 dB
Peak Log											*
dB/	MM	WWW	NW WM	VVV VVV	WWWW	rwww.	WAMAN	WW			
V1 S2	1R										
53 VC AA	••••								arbaica.	an fall and a state of the stat	X/AD-9-9-4-4-447
Start 9 Res BV	08.9 MH; V 120 kH				/BW 300 k	:Hz		Swee	ep 5	Stop 90 00 ms (10)8.9 MHz 00 pts)

Testing of: New Cosmos Electric Co., Ltd. DBA DeNova Detect, Model 810NLR, Methane Detector with Radio

🔆 Ag	ilent 12	2:09:55 Ma	ar 13, 2025	5				R T	-		
Time of Ref 5 d	Occupano Bm	зy	Att	ten 15 dB						Mkr1 ∆	371.9 ms 52.12 dB
Peak Log 10 dB/	1000000	MMMM	rwrwrwr	vvvvv	WAY WAY	MANA	VINWW	www	>		
V1 S2 S3 VC AA	12								(notife		
Start 91 Res BW	I4.9 MHz / 120 kHz 1ed heade	r			/BW 300 k	Hz		Swee	2p 5	Stop 9 600 ms (19	14.9 MHz 000 pts)

Judgement: Pass

11.4 Occupied Bandwidth Data

The occupied bandwidth of the RF output was measured using a spectrum analyzer. The bandwidth was measured using the peak detector function and a narrow resolution bandwidth. A broadband antenna was used to receive the modulated signal. The spectrum analyzer was set to the MAX HOLD mode to record the worst case of the modulation. The spectrum analyzer display was digitized and plotted. The plots of the occupied bandwidth for the EUT are supplied on the following pages.

Tested by: Joseph Strzelecki Test Date: February 7, 2025 Test Equipment: REC-44; ATT-66

Channel	99% EBW kHz	20 dB EBW kHz
902.75	127.328	143.557
915.00	128.128	144.819
927.25	127.075	144.332









Judgement: Pass

11.5 Peak Output Power

The EUT antenna port was connected to the spectrum analyzer via a low loss coaxial cable. The power output test method from ANSI C63.10 section 12.3.1 was used for this test. Trace averaging was not used. The EUT was transmitting continously. The spectrum analyzer was set to the following settings:

Span = 5 MHz; RBW = 1 MHz; VBW = 8 MHz; Sweep = auto Detector function = peak; Trace = max hold

The trace was allowed to stabilize. The indicated level is the peak output power. Since the gain of the antenna is less than 6 dB, the limit is not reduced.

Tested by: Joseph Strzelecki Test Date: February 7, 2025 Test Equipment: REC-44; ATT-66

Frequency	Reading	Cable + Att	Total Power (dBm)		
(MHz)	(dBm)	Loss (dB)	dBm	Watts	Limit (dBm)
902.3	14.4	6.6	21.0	0.124	30.0
908.7	14.2	6.6	20.8	0.120	30.0
914.9	14.2	6.6	20.8	0.121	30.0

Judgment: Passed by 9.0 dB



Testing of: New Cosmos Electric Co., Ltd. DBA DeNova Detect, Model 810NLR, Methane Detector with Radio



11.6 Band-edge Compliance of RF Conducted Emissions

The spectrum analyzer was set to the MAX HOLD mode to record the worst case of the modulation at the band-edge, with the EUT set to the lowest frequency. The trace was allowed to stabilize.

Tested by: Joseph Strzelecki Test Date: February 11, 2025 Test Equipment: REC-44; ATT-45

	Reading at E	Band Edge	Minimum Allowed	
Channel	Freq. (MHz)	Delta (dB)	dB	Mode
902.3 Lower Band edge	902.0	49.3	20	Hopping
914.9 Upper Band edge	929.3	70.4	20	Hopping
902.3 Lower Band edge	902.0	48.7	20	Non Hopping
914.9 Upper Band edge	928.4	71.1	20	Non Hopping

Judgment: Passed by 28.7 dB

Testing of: New Cosmos Electric Co., Ltd. DBA DeNova Detect, Model 810NLR, Methane Detector with Radio

₩ A	gilent 15:	13:48 Fe	b 11, 20	25				RΤ			
Band E Ref 20	dge Low dBm		At	ten 30 di	3				▲ Mkr1	292.6 49.34	kHz dB
Peak Log 10 dB/							$\gamma\gamma\gamma$	$\wedge \wedge$	ŴŴ		V
LgAv											
M1 S2 S3 FC AA				-0bit	1						
f>50k Swp	mard	and and and a second	NN WWW								
Center #Res B	902.000 W 100 kH	0 MHz Iz			VBW 1 Mł		s	weep 1.0	Sr 966 ms (2) ban 5 M 2000 p	MHz its)_
норрі	ng ivioa	e									
₩ A Band E Ref 20	<mark>gilent</mark> 15: dge High dBm	16:33 F€	b 11, 20; At	25 ten 30 dl	3			R T ⊿Ì	Mkr1 –1	6.043 70.44	MHz dB
Peak Log 10 dB/	1										

Center 928.000 MHz

#Res BW 100 kHz

Hopping Mode

MAN

Philwhy .

LgAv

M1 S2 S3 FC AA £(f):

FTun

Swp

1 R

VBW 1 MHz

and very maker of the second and by her west

Sweep 2.799 ms (2000 pts)

Span 30 MHz

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* A	gilent 15:35:5	1 Feb 11, 20	25				RT		
Band E Ref 20	dge Low; Not dBm	Hopping Ati	ten 30 dB					∆ Mkr1	232.6 kHz 48.77 dB
Norm Log 10									*
dB/									
LgAv						<u> </u>			
V1 S2				1	>	1 00			
55 FC AA \$ (E):			ስለማ	ANNONNY		- when have a feature of the second s	When we a		
f>50k Swp	man	www.hvwnwnnhafr	wayyoware					Un wary	www.ww
Center	902.000 0 M	Hz						SI	pan 5 MHz
#Res B Non-⊦	N 100 kHz lopping Mo	de		'BW 1 MH	Z	S	weep 1.	066 ms (2000 pts)_



Non-Hopping Mode

Testing of: New Cosmos Electric Co., Ltd. DBA DeNova Detect, Model 810NLR, Methane Detector with Radio

11.7 Spurious RF Conducted Emissions at Antenna Port

The spectrum analyzer was set to the MAX HOLD mode to record all spurious emissions from the lowest frequency generated in the EUT up through the 10th harmonic. The trace was allowed to stabilize. The first two plots were made while stepping through three frequencies (Low middle and high). Each frequency was on for 30 seconds. The red dislplay line was set to 20 dB below the level of the fundamental.

Tested by: Joseph Strzelecki Test Date: February 7, 2025 Test Equipment: REC-44; ATT-66

🔆 А	gilent 15:5	56:30 Fe	b 7,202	5				RT		
Spuriou	is Emissior	ns; Low C	hannel							
Ref 30	dBm		At	ten 40 d	В					
Peak										
Log										
10										
dB/									DC	Coupled
DI										
-6.0										
dBm										
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M1 S2										
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Start 1	.0 MHz								Stop 2.50	00 0 GHz
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Log										
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dBm										
LgHv										
M1 S2	2									
S3 FC										
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FTun							الراويية.	للال المستحد الم	like a loo loor a taa	المحملين ال
Swp	alla dia a							the planting to prove		
Start	2 . 500 0 G	iHz							Stop 9.50	00 0 GHz
#Res E	3W 100 kH	z			VBW 1 M	Hz	S	weep 646	6.3 ms (80	000 pts)_
*	Agilent 15:	57:56 Fe	eb 7.202	5				RТ		
🔆 🦗 🖌	A <mark>gilent</mark> 15: us Emissio	57:56 Fe ns; Mid C	eb 7, 202 hannel	5				RT		
∰ A Spurio Ref 30 Poak	A <mark>gilent</mark> 15: us Emissio dBm	57:56 Fe ns; Mid C	eb 7, 202 hannel At	5 ten 40 di	В			RT		
<mark>₩</mark> Spurio Ref 30 Peak Log	A <mark>gilent</mark> 15: us Emissio dBm	57:56 Fe ns; Mid C	eb 7, 202 hannel At	5 ten 40 di	в			RT		
₩ A Spurio Ref 30 Peak Log 10	Agilent 15: us Emissio dBm	57:56 F∈ ns; Mid C	əb 7, 202 hannel At	5 ten 40 di	B			R T		
<mark>₩</mark> Spurio Ref 30 Peak Log 10 dB/	Agilent 15: us Emissio) dBm	57:56 Fe ns; Mid C	eb 7, 202 hannel At	5 ten 40 di	8			R T	DC	Coupled
<mark>₩</mark> Spurio Ref 30 Peak Log 10 dB/	Agilent 15: us Emissio dBm	57:56 F€ ns; Mid C	eb 7, 202 hannel At	5 ten 40 di	8			R T	DC	Coupled
¥ 7 Spurio Ref 30 Peak Log 10 dB/	Agilent 15: us Emissio) dBm	57:56 Fe ns; Mid C	eb 7, 202 hannel At	5 ten 40 df	8			R T	DC	Coupled
₩ A Spurio Ref 30 Peak Log 10 dB/ DI -6.0	Agilent 15: us Emissio dBm	57:56 Fe ns; Mid C	eb 7, 202 hannel At	5 ten 40 dl	3			R T	DC	Coupled
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₩ A Spurio Ref 30 Peak Log 10 dB/ DI -6.0 dBm LgAv	Agilent 15: us Emissio) dBm	57:56 Fe ns; Mid C	eb 7, 202 hannel At	5 ten 40 dl	В			RT	DC	Coupled
★ ₽ Spurio Ref 30 Peak Jog Log Jog 10 dB/ DI -6.0 dBm LgAv M1 S2	Agilent 15: us Emissio dBm	57:56 Fe ns; Mid C	eb 7, 202 hannel At	5 ten 40 dl	8			R T	DC	Coupled
₩ A Spurio Ref 30 Peak Log 10 dB/ DI -6.0 dBm LgAv M1 S2 S3 FC	Agilent 15: us Emissio dBm	57:56 Fe ns; Mid C	eb 7, 202 hannel At	5 ten 40 df	Β			RT	DC	Coupled
Spurio Ref 30 Peak Log 10 dB/ DI -6.0 dBm LgAv M1 S2 S3 FC AG	Agilent 15: us Emissio dBm	57:56 Fe ns; Mid C	eb 7, 202 hannel At	5 ten 40 dl	B			R T	DC	Coupled
# #	Agilent 15: us Emissio dBm	57:56 Fe ns; Mid C	eb 7, 202 hannel At	5 ten 40 df	B			R T	DC	Coupled
₩ ₽ Spurio Ref 30 Peak 10 Log 10 dB/ 0 DI -6.0 dBm LgAv M1 S2 S3 FC AF £(f): FTun Swp	Agilent 15: us Emissio dBm	57:56 Fe ns; Mid C	eb 7, 202 hannel At	5 ten 40 dl						Coupled
# # Spurio Ref 30 Peak 10 Log 10 dB/ DI -6.0 dBm LgAv S3 FC S3 FC AF £(f): FTun Swp	Agilent 15: us Emissio dBm	57:56 Fe ns; Mid C	ab 7, 202 hannel At	5 ten 40 dl						Coupled
₩ # Spurio Ref 30 Peak Log 10 dB/ DI -6.0 dBm LgAv M1 S3 FC AF £(f): FTun Swp	Agilent 15: us Emissio dBm	57:56 Fe ns; Mid C	eb 7, 202 hannel At	5 ten 40 dl						
₩ A Spurio Ref 30 Peak Log 10 dB/ DI -6.0 dBm LgAv M1 S2 S3 FC €(f): FTun Swp Start	Agilent 15: us Emissio dBm	57:56 Fe ns; Mid C	eb 7, 202 hannel At	5 ten 40 dl					DC	Coupled



*	Agilent 1	5:59:20 Fe	əb 7,202	5				RT		
Spuri	ious Emiss	ions; Mid C	hannel	. 40 1					Mkr1 7.7	08 7 GHz
кет. Peak	30 abm		Ht	ten 40 al	B 				-4/	.65 dBm
Log										
10 JD7										
aD/										
DI DI										
טו -6.0										
dBm										
LgAv	'									
M1 (s2									
\$3 F	ic internet									
۲ ۲۵۱ م)A									
FTun										
Swp										<u>itiya ahiya</u>
Stari	2.500 0	GHz								00 0 GHz
#Res	BW 100	kHz			VBW 1 M	-lz	S	weep 646	6.3 ms (80	000 pts)_
Niz	Autore 11	E.EE.40 E.	. 7 DOD	C				р т		
- ∰ Snuri	Agilent 1	5:55:40 Fe ions: High (eb 7, 202 Channel	5				RT		
¥¥ Spuri Ref∶	Agilent 1 ious Emiss 30 dBm	5:55:40 Fe ions; High (eb 7, 202 Channel At	5 ten 40 d	B			RT		
<mark>∦</mark> Spuri Ref∶ Peak	Agilent 1 ious Emiss 30 dBm	5:55:40 F€ ions; High (eb 7, 202 Channel At	5 ten 40 d	B			RT		
¥ Spuri Ref∶ Peak Log 10	Agilent 1 ious Emiss 30 dBm	5:55:40 F€ sions; High (eb 7, 202 Channel At	5 ten 40 d	B			RT		
¥ Spuri Ref : Peak Log 10 dB/	Agilent 1 ious Emiss 30 dBm	5:55:40 Fe sions; High (eb 7, 202 Channel At	5 ten 40 di	B			R T	DC	Coupled
¥ Spuri Ref∶ Peak Log 10 dB/	Agilent 1 ious Emiss 30 dBm	5:55:40 Fe sions; High (eb 7, 202 Channel At	5 ten 40 d	B			RT	DC	Coupled
Spuri Ref : Peak Log 10 dB/	Agilent 1 ious Emiss 30 dBm	5:55:40 Fe sions; High (eb 7, 202 Channel At	5 ten 40 di	B			RT	DC	Coupled
Spuri Ref : Peak Log 10 dB/	Agilent 1 ious Emiss 30 dBm	5:55:40 Fe ions; High (eb 7, 202 Channel At	5 ten 40 d	B			RT	DC	Coupled
Spuri Ref C Peak Log dB/ DI -6.0 dBm	Agilent 1 ious Emiss 30 dBm	5:55:40 Fe vions; High (eb 7, 202 Channel At	5 ten 40 d	B			R T	DC	Coupled
Spuri Ref : Peak Log dB/ DI -6.0 dBm LgAv	Agilent 1 ious Emiss 30 dBm	5:55:40 Fe sions; High (eb 7, 202 Channel At	5 ten 40 di	B			RT	DC	Coupled
∰ Ref∶ Peak Log 10 dB/ DI −6.0 dBm LgAv	Agilent 1 ious Emiss 30 dBm	5:55:40 Fe ions; High (eb 7, 202 Channel At	5 ten 40 d	B			RT	DC	Coupled
Spuri Ref: Log 10 dB/ DI dB/ LgAv M1 (Q3_C	Agilent 1 ious Emiss 30 dBm	5:55:40 Fe sions; High (eb 7, 202 Channel At	5 ten 40 di	B			RT		Coupled
₩ Spuri Ref: Peak Log 10 dB/ DI -6.0 dBm LgAv M1 S3 -	Agilent 1 ious Emiss 30 dBm 	5:55:40 Fe sions; High (eb 7, 202 Channel At	5 ten 40 d 	B			RT	DC	Coupled
** Spuri Ref : Log 10 dB/ DI -6.0 dBm LgAv S3 F S3 F £(f):	Agilent 1 ious Emiss 30 dBm 	5:55:40 Fe sions; High (eb 7, 202 Channel At	5 ten 40 di	B			R T	DC	Coupled
₩ Spuri Ref: Peak Log 10 dB/ DI -6.0 dB/ S3 F £(f): FTun Swp	Agilent 1 ious Emiss 30 dBm 	5:55:40 Fe sions; High (eb 7, 202 Channel At	5 ten 40 di	B					
★ Spuri Ref : Peak Log 10 dB/ DI -6.0 dBm LgAv M1 S3 F £(f): FTun Swp	Agilent 1 ious Emiss 30 dBm 	5:55:40 Fe sions; High (eb 7, 202 Channel At	5 ten 40 di						
★ Spuri Ref: Peak Log 10 dB/ DI dB/ S3 F f(f): FTun Swp	Agilent 1 ious Emiss 30 dBm Control (Control) Control (Contro) Control (Control) Control (Control) Control (Control)	5:55:40 Fe sions; High (eb 7, 202 Channel At	5 ten 40 di						
★ Spuri Ref: Peak Log 10 dB/ DI -6.0 dBm LgAv M1 S3 F fC(f): Swp	Agilent 1 ious Emiss 30 dBm 30 dBm	5:55:40 Fe sions; High (eb 7, 202 Channel At	5 ten 40 di				R T		
Spuri Ref: Log 10 dB/ dBm LgAv S3 F S3 F £(f): FTun Swp	Agilent 1 ious Emiss 30 dBm Control (Control) Control (Control)	5:55:40 Fe sions; High (eb 7, 202 Channel At	5 ten 40 di						
Spuri Ref: Peak Log 10 dB/ DI -6.0 dBm LgAv S3 F £(f): SWp Starf	Agilent 1 ious Emiss 30 dBm 30 dBm	5:55:40 Fe sions; High (eb 7, 202 Channel At	5 ten 40 di					DC	Coupled



Testing of: New Cosmos Electric Co., Ltd. DBA DeNova Detect, Model 810NLR, Methane Detector with Radio

* A	gilent 16:0	01:41 Fe	b 7,202		RT					
Spuriou	is Emissio	ns; High (Channel						Mkr1 7.4	80 2 GHz
Ref 30	dBm		At	ten 40 dl	B				-47	7.38 dBm
Peak										
LOG 10										
dB/										
וח										
-6.0										
dBm										
LgAv										
M1 S2										
33 FC 68										
£ (f):								1		
FTun								Š.		
Swp	a part a training			and the last	and the strength of the					a stalet i su din t nationalistication
Start 2	500 0 G	Hz							Stop 9.5	1 20 0 GHz
#Res R	<u>.</u>	7			URW 1 M	17	\$	ween 641	63 ms (8	00 0 012 000 nts)
The g	reen disi	olay Line	e on all r	olots was	s set to 2	20 dB be	low the	level of	the carri	er.

Judgement: Pass by at least 20 dB

11.8 Radiated RF Emissions

Radiated emission measurements were performed with linearly polarized broadband antennas. The results obtained with these antennas can be correlated with results obtained with a tuned dipole antenna. The radiated emission measurements were performed with a spectrum analyzer. The bandwidth used from 150 kHz to 30 MHz is 9 or 10 kHz and the bandwidth from 30 MHz to 1000 MHz is 100 or 120 kHz. Above 1 GHz, a 1 MHz bandwidth is used. A 10 dB linearity check is performed prior to start of testing in order to determine if an overload condition exists. Figure 4 herein lists the details of the test equipment used during radiated emissions tests.

In addition, a high pass filter was used to reduce the fundamental emission. The EUT was rotated through three orthogonal axis as per 5.10.1 of ANSI C63.10 during the radiated tests.

Final radiated emissions measurements were performed inside of an anechoic chamber at a test distance of 3 meters. The anechoic chamber is designated as Chamber E. This Chamber meets the Site Attenuation requirements of ANSI C63.4 and CISPR 16-1. Chamber E is located at 12 Devonwood Ave. Romeoville, Illinois EMI test lab.



Radiometrics Midwest Corporation Testing of: New Cosmos Electric Co., Ltd. DBA DeNova Detect, Model 810NLR, Methane Detector with Radio

The entire frequency range from 30 to 9300 MHz was slowly scanned. Measurements were performed using two antenna polarizations, (vertical and horizontal). The worst case emissions were recorded. All measurements may be performed using either the peak, average or guasi-peak detector functions. If the peak detector data exceeds or is marginally close to the limits, the measurements are repeated using a quasi-peak detector or average function as required by the specification for final determination of compliance. The QP and average detectors have a linear response.

The detected emission levels were maximized by rotating the EUT, adjusting the positions of all cables, and by scanning the measurement antenna from 1 to 4 meters above the ground.

11.8.1 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Loss, and by subtracting the Amplifier Gain from the measured reading. The basic equation is as follows:

FS = RA + AF + CF - AG + HPF + PKAWhere: FS = Field Strength RA = Receiver Amplitude AF = Antenna Factor CF = Cable Attenuation Factor AG = Amplifier Gain HPF = High pass Filter Loss

11.8.2 Radiated Emissions Test Results

Emissions Below 1 GHz

Test Date	Jan 17, 2025
Test Distance	3 Meters
Specification	FCC Part 15 Subpart C & RSS-247
Abbreviations	Pol = Antenna Polarization; V = Vertical; H = Horizontal; P = peak; Q = QP
Configuration	The EUT is in the transmit mode with the receiver on

This table includes all emissions except Fundamental, Band edge and Harmonics emissions.

	Meter			Ant		Dist			Margin	
Freq.	Reading		Ant.	Factor	Cbl/amp	Fact	EUT	Limit	Under	
MHz	dBuV	Dect.	Pol.	dB/m	Factors	dB	dBuV/m	dBuV/m	Limit dB	Note
35.3	15.3	Р	Н	11.8	0.7	0.0	27.8	40.0	12.2	
52.1	10.9	Р	Н	9.0	0.8	0.0	20.7	40.0	19.3	
68.3	10.7	Р	Н	8.8	1.0	0.0	20.5	40.0	19.5	
88.4	12.6	Р	Н	9.4	1.1	0.0	23.1	43.5	20.4	
96.4	19.9	Р	Н	9.8	1.1	0.0	30.8	43.5	12.7	
119.8	14.7	Р	Н	11.5	1.3	0.0	27.5	43.5	16.0	
124.9	15.5	Р	Н	11.7	1.3	0.0	28.5	43.5	15.0	
161.8	12.8	Р	Н	12.8	1.5	0.0	27.1	43.5	16.4	
188.6	12.4	Р	Н	13.7	1.6	0.0	27.7	43.5	15.8	
218.3	12.3	Р	Н	14.7	1.7	0.0	28.7	46.0	17.3	
235.3	13.2	Р	Н	15.0	1.8	0.0	30.0	46.0	16.0	
272.7	11.8	Р	Н	13.0	1.9	0.0	26.7	46.0	19.3	
309.5	9.9	Р	Н	14.7	2.1	0.0	26.7	46.0	19.3	
336.3	9.3	Р	Н	14.2	2.2	0.0	25.7	46.0	20.3	
364.5	10.0	Р	Н	14.5	2.2	0.0	26.7	46.0	19.3	
390.0	11.3	Р	Н	15.2	2.3	0.0	28.8	46.0	17.2	



	Meter			Δnt		Dist			Margin	
Freq	Reading		Ant	Factor	Cbl/amp	Fact	FUT	Limit	Under	
MHz	dBuV	Dect.	Pol.	dB/m	Factors	dB	dBuV/m	dBuV/m	Limit dB	Note
417.5	11.3	P	H	15.6	2.4	0.0	29.3	46.0	16.7	
441.2	13.2	P	Н	16.2	2.5	0.0	31.9	46.0	14.1	
485.9	11.1	P	H	17.3	2.6	0.0	31.0	46.0	15.0	
530.5	10.6	P	H	17.6	2.7	0.0	30.9	46.0	15.1	
583.1	10.7	P	H	18.5	2.8	0.0	32.0	46.0	14.0	
640.1	10.2	P	H	19.7	3.0	0.0	32.9	46.0	13.1	
707.7	10.3	P	H	21.1	3.1	0.0	34.5	46.0	11.5	
784.8	11.0	P	H	21.2	3.3	0.0	35.5	46.0	10.5	
869.4	10.4	Р	Н	22.8	3.5	0.0	36.7	46.0	9.3	
965.5	10.4	Р	Н	23.5	3.7	0.0	37.6	54.0	16.4	
1158.2	37.5	Р	Н	24.7	-31.7	0.0	30.5	74.0	43.5	1
1322.3	37.9	Р	Н	25.0	-31.5	0.0	31.4	74.0	42.6	1
1508.5	38.9	Р	Н	25.2	-31.4	0.0	32.7	74.0	41.3	1
1713.7	37.9	Р	Н	26.4	-31.0	0.0	33.3	74.0	40.7	1
1863.9	38.2	P	H	27.0	-30.8	0.0	34.4	74.0	39.6	1
2180.2	36.6	P	H	27.7	-30.2	0.0	34.1	74.0	39.9	1
2374.4	37.3	P	H	28.2	-30.0	0.0	35.5	74.0	38.5	1
2512.5	36.7	P	H	28.5	-29.7	0.0	35.5	74.0	38.5	1
2713.7	37.4	P	H	29.0	-29.3	0.0	37.1	74.0	36.9	1
2892.9	39.5	P	H	29.5	-29.1	0.0	39.9	74.0	34.1	1
3192.2	36.1	P	H	30.9	-28.2	0.0	38.8	74.0	35.2	1
3372.4	35.0	P	H	31.2	-27.9	0.0	38.3	74.0	35.7	1
3546.5	35.5	P	H	31.3	-27.6	0.0	39.2	74.0	34.8	1
3745.7	36.0	P	H	32.3	-27.4	0.0	40.9	74.0	33.1	1
4158.2	37.2	P	H	32.4	-26.7	0.0	42.9	74.0	31.1	1
4626.6	35.0	P	H	33.2	-25.5	0.0	42.7	74.0	31.3	1
35.5	17.3	P	V	11.7	0.7	0.0	29.7	40.0	10.3	
51.7	10.3	Р	V	9.1	0.8	0.0	20.2	40.0	19.8	
62.5	10.4	Р	V	9.0	0.9	0.0	20.3	40.0	19.7	
69.4	20.2	Р	V	8.9	1.0	0.0	30.1	40.0	9.9	
90.4	11.8	Р	V	9.6	1.1	0.0	22.5	43.5	21.0	
134.6	11.9	Р	V	12.2	1.4	0.0	25.5	43.5	18.0	
153.9	11.4	Р	V	12.6	1.4	0.0	25.4	43.5	18.1	
196.4	12.3	Р	V	14.1	1.6	0.0	28.0	43.5	15.5	
225.3	12.8	Р	V	14.9	1.8	0.0	29.5	46.0	16.5	
246.6	12.3	Р	V	15.2	1.8	0.0	29.3	46.0	16.7	
263.9	15.1	Р	V	12.4	1.9	0.0	29.4	46.0	16.6	
291.6	17.6	Р	V	14.1	2.0	0.0	33.7	46.0	12.3	
314.6	14.0	Р	V	14.3	2.1	0.0	30.4	46.0	15.6	
342.3	14.6	Р	V	14.3	2.2	0.0	31.1	46.0	14.9	
381.9	10.8	Р	V	15.0	2.3	0.0	28.1	46.0	17.9	
429.1	11.2	Р	V	16.0	2.4	0.0	29.6	46.0	16.4	
465.2	11.2	Р	V	16.8	2.5	0.0	30.5	46.0	15.5	
493.7	11.7	Р	V	17.5	2.6	0.0	31.8	46.0	14.2	
521.0	10.8	Р	V	17.7	2.7	0.0	31.2	46.0	14.8	
588.6	11.4	Р	V	18.6	2.9	0.0	32.9	46.0	13.1	
611.1	10.6	Р	V	19.0	2.9	0.0	32.5	46.0	13.5	
713.2	10.9	Р	V	21.0	3.1	0.0	35.0	46.0	11.0	
840.8	10.7	Р	V	22.1	3.4	0.0	36.2	46.0	9.8	
895.4	13.4	Р	V	22.8	3.6	0.0	39.8	46.0	6.2	
988.0	10.9	Р	V	24.1	3.7	0.0	38.7	54.0	15.3	
1242.2	46.6	Р	V	24.9	-31.7	0.0	39.8	74.0	34.2	1
1307.3	42.8	P	V	25.0	-31.6	0.0	36.2	74.0	37.8	1

Testing of: New Cosmos Electric Co., Ltd. DBA DeNova Detect, Model 810NLR, Methane Detector with Radio

		1		. .						
	Meter			Ant		Dist			Margin	
Freq.	Reading		Ant.	Factor	Cbl/amp	Fact	EUT	Limit	Under	
MHz	dBuV	Dect.	Pol.	dB/m	Factors	dB	dBuV/m	dBuV/m	Limit dB	Note
1393.4	40.7	Р	V	25.0	-31.4	0.0	34.3	74.0	39.7	1
1699.7	46.0	Р	V	26.3	-31.0	0.0	41.3	74.0	32.7	1
1891.9	41.0	Р	V	27.1	-30.8	0.0	37.3	74.0	36.7	1
2157.2	40.8	Р	V	27.7	-30.3	0.0	38.2	74.0	35.8	1
2222.2	39.5	Р	V	27.8	-30.3	0.0	37.0	74.0	37.0	1
2614.6	41.8	Р	V	28.8	-29.5	0.0	41.1	74.0	32.9	1
2891.9	39.9	Р	V	29.5	-29.1	0.0	40.3	74.0	33.7	1
3180.2	36.1	Р	V	30.8	-28.2	0.0	38.7	74.0	35.3	1
3379.4	36.5	Р	V	31.2	-27.8	0.0	39.9	74.0	34.1	1
3572.6	35.7	Р	V	31.4	-27.5	0.0	39.6	74.0	34.4	1
3844.8	35.5	Р	V	32.7	-27.2	0.0	41.0	74.0	33.0	1
4370.4	36.5	Р	V	32.6	-26.4	0.0	42.7	74.0	31.3	1
4525.5	35.6	Р	V	33.0	-25.8	0.0	42.8	74.0	31.2	1

Judgment: Passed by at least 10 dB

No other emissions were detected in the restricted bands.

Restricted Band Emissions

	Тx		Spe	ectrum	n Analyzer Readings dBuV						EUT	Peak	Ave	Peak	Ave	Margin
hrm	Freq		Peak		Ave	Peak Ave		Ave	Corr.	Emission	Tot. FS		Limit		Under	
		Ve	rtical P	olariza	tion	Hori	zontal	Polariz	ation	Fact	Freq					Limit
#	MHz	Х	Y	ΖN	/lax	Х	Y	Ζ	Max	dB/m	MHz	dBu	V/m	dBu	V/m	dB
3	902	45.4	42.9	44.2	45.4	43.8	41.1	42.7	43.8	0.0	2706.9	45.4	45.4	74	54	8.6
4	902	38.8	41.3	35.8	41.3	39.0	38.6	40.2	40.2	4.2	3609.2	45.5	45.5	74	54	8.5
5	902	37.4	37.5	38.2	38.2	37.4	37.2	37.5	37.5	8.3	4511.5	46.5	46.5	74	54	7.5
3	909	42.3	40.7	42.1	42.3	44.7	42.1	41.1	44.7	0.2	2726.1	44.9	44.9	74	54	9.1
4	909	39.7	41.7	38.6	41.7	41.3	39.3	39.0	41.3	4.4	3634.8	46.1	46.1	74	54	7.9
5	909	37.8	38.4	38.7	38.7	37.6	38.0	37.8	38.0	8.6	4543.5	47.3	47.3	74	54	6.7
3	915	42.6	40.4	43.2	43.2	37.3	42.9	39.2	42.9	0.1	2744.7	43.3	43.3	74	54	10.7
4	915	34.0	32.2	33.8	34.0	31.7	32.0	30.6	32.0	4.5	3659.6	38.5	38.5	74	54	15.5
5	915	32.4	30.6	30.9	32.4	29.2	30.4	32.3	32.3	8.5	4574.5	40.9	40.9	74	54	13.1
6	915	28.5	0.0	0.0	28.5	28.6	28.8	0.0	28.8	11.9	5489.4	40.7	40.7	95	75	34.3
					Colu	umn nu	mbers	(see b	elow fo	r expla	nations)					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

Column #1. hrm = Harmonic; BE = Band Edge emissions

Column #2. Frequency of Transmitter.

Column #3. Uncorrected readings from the spectrum analyzer with First Axis Rotation.

Column #4. Uncorrected readings from the spectrum analyzer with Second Axis Rotation.

Column #5. Uncorrected readings from the spectrum analyzer with Third Axis Rotation.

Column #6. Average Reading based on peak reading reduced by the Duty cycle correction

Column #7. Uncorrected readings from the spectrum analyzer with First Axis Rotation.

Column #8. Uncorrected readings from the spectrum analyzer with Second Axis Rotation.

Column #9. Uncorrected readings from the spectrum analyzer with Third Axis Rotation.

Column #10. Average Reading based on peak reading reduced by the Duty cycle correction

Column #11. Corr. Factors = Cable Loss – Preamp Gain + Antenna Factor + HPF

Column #12. Frequency of Tested Emission

Column #13. Highest peak field strength at listed frequency.

Column #14. Highest Average field strength at listed frequency.

Column #15. Peak Limit.

Column #16. Average Limit.

Column #17. The margin (last column) is the worst-case margin under the peak or average limits for that row.

All emissions outside of the band from 902 to 928 were below the limits of 15.209. The peak emissions met the average limits so an average detector was not used.

Overall Judgment: Passed by at least 6 dB

No other Emissions in the restricted bands were detected from 30 to 9300 MHz within 10 dB of the limits.

Figure 1. Drawings of Radiated Emissions Setup

Chamber E, anechoic



• AC cords not shown. They are connected to AC outlet with low-pass filter on turntable

	Receive	Pre-	Spectrum	High Pass
Frequency Range	Antenna	Amplifier	Analyzer	Filter
30 to 200 MHz	ANT-80	Internal	REC-21	None*
200 to 1000 MHz	ANT-68	Internal	REC-21	None*
1 to 10 GHz	ANT-66	AMP-05	REC-21	HPF-07

* A high pass filter was not needed since the fundamental frequency was outside of the amplifiers pass band.

Testing of: New Cosmos Electric Co., Ltd. DBA DeNova Detect, Model 810NLR, Methane Detector with Radio

Radiated Emissions Test Setup for Frequencies from 30MHz to 1000MHz (Side View)



Radiated Emissions Test Setup for Frequencies over 1000MHz (Side View)



Testing of: New Cosmos Electric Co., Ltd. DBA DeNova Detect, Model 810NLR, Methane Detector with Radio

11.9 Unintentional Emissions (Receive Mode)

Manufacturer	New Cosmos Electric Co., Ltd	Specification	FCC Part 15.209 & RSS-GEN				
	DBA DeNova Detect						
Model	810NLR	Test Date	January 16-17, 2025				
Serial Number	RMC-03	Test Distance	3 Meters				
Abbreviations	Pol = Antenna Polarization; V = Vertical; H = Horizontal; P = peak; Q = QP						
Notes	Corr. Factors = Cable Loss – Preamp Gain						
Configuration	Receive mode						

	Meter			Ant	Cbl/amp	Dist			Margin	
Freq.	Reading		Ant.	Factor	Factors	Fact	EUT	Limit	Under	
MHz	dBuV	Dect.	Pol.	dB/m	dB	dB	dBuV/m	dBuV/m	Limit dB	Note
34.9	15.0	Р	Н	12.0	0.7	0.0	27.7	40.0	12.3	
68.2	11.5	Р	Н	8.8	1.0	0.0	21.3	40.0	18.7	
113.0	11.6	Р	Н	11.0	1.2	0.0	23.8	43.5	19.7	
181.3	16.7	Р	Н	13.5	1.6	0.0	31.8	43.5	11.7	
225.3	16.3	Р	Н	14.9	1.8	0.0	33.0	46.0	13.0	
275.7	9.8	Р	Н	13.2	1.9	0.0	24.9	46.0	21.1	
398.3	10.8	Р	Н	15.3	2.3	0.0	28.4	46.0	17.6	
560.6	11.1	Р	Н	18.3	2.8	0.0	32.2	46.0	13.8	
695.7	10.3	Р	Н	21.3	3.1	0.0	34.7	46.0	11.3	
826.8	10.5	Р	Н	21.8	3.4	0.0	35.7	46.0	10.3	
973.0	10.0	Р	Н	23.6	3.7	0.0	37.3	54.0	16.7	
1179.2	37.0	Р	Н	24.8	-31.6	0.0	30.2	74.0	43.8	1
1388.4	38.6	Р	Н	25.0	-31.4	0.0	32.2	74.0	41.8	1
1640.6	38.1	Р	Н	25.8	-31.2	0.0	32.7	74.0	41.3	1
1841.8	37.9	Р	Н	27.0	-30.9	0.0	34.0	74.0	40.0	1
2241.2	36.5	Р	Н	27.9	-30.4	0.0	34.0	74.0	40.0	1
2499.5	37.6	Р	Н	28.4	-29.7	0.0	36.3	74.0	37.7	1
2732.7	37.6	Р	Н	29.1	-29.3	0.0	37.4	74.0	36.6	1
2889.9	39.1	Р	Н	29.5	-29.1	0.0	39.5	74.0	34.5	1
3177.2	36.1	Р	Н	30.8	-28.2	0.0	38.7	74.0	35.3	1
3421.4	35.0	Р	Н	31.2	-27.7	0.0	38.5	74.0	35.5	1
3677.7	36.2	Р	Н	31.9	-27.6	0.0	40.5	74.0	33.5	1
3882.9	35.6	Р	Н	32.8	-27.1	0.0	41.3	74.0	32.7	1
4171.2	35.8	Р	Н	32.4	-26.7	0.0	41.5	74.0	32.5	1
4360.4	35.5	Р	Н	32.6	-26.5	0.0	41.6	74.0	32.4	1
4639.6	35.6	Р	Н	33.2	-25.5	0.0	43.3	74.0	30.7	1
35.3	16.0	Р	V	11.8	0.7	0.0	28.5	40.0	11.5	
68.5	17.2	Р	V	8.8	1.0	0.0	27.0	40.0	13.0	
137.5	15.6	Р	V	12.2	1.4	0.0	29.2	43.5	14.3	
200.1	15.7	Р	V	14.2	1.7	0.0	31.6	43.5	11.9	
290.9	11.3	Р	V	14.1	2.0	0.0	27.4	46.0	18.6	
353.4	11.0	Р	V	14.4	2.2	0.0	27.6	46.0	18.4	
408.4	12.8	Р	V	15.4	2.3	0.0	30.5	46.0	15.5	
580.6	12.7	Р	V	18.5	2.8	0.0	34.0	46.0	12.0	
701.7	11.0	Р	V	21.2	3.1	0.0	35.3	46.0	10.7	
819.3	10.4	Р	V	21.7	3.4	0.0	35.5	46.0	10.5	
938.4	9.3	Р	V	23.0	3.6	0.0	35.9	46.0	10.1	
1222.2	39.5	Р	V	24.9	-31.7	0.0	32.7	74.0	41.3	1
1417.4	38.2	Р	V	25.0	-31.5	0.0	31.7	74.0	42.3	1
1653.7	39.2	Р	V	25.9	-31.1	0.0	34.0	74.0	40.0	1
1888.9	38.9	Р	V	27.1	-30.8	0.0	35.2	74.0	38.8	1
2143.1	36.4	Р	V	27.6	-30.3	0.0	33.7	74.0	40.3	1

Testing of: New Cosmos Electric Co., Ltd. DBA DeNova Detect, Model 810NLR, Methane Detector with Radio

	Meter			Ant	Cbl/amp	Dist			Margin	
Freq.	Reading		Ant.	Factor	Factors	Fact	EUT	Limit	Under	
MHz	dBuV	Dect.	Pol.	dB/m	dB	dB	dBuV/m	dBuV/m	Limit dB	Note
2371.4	36.1	Р	V	28.2	-30.1	0.0	34.2	74.0	39.8	1
2515.5	38.0	Р	V	28.5	-29.7	0.0	36.8	74.0	37.2	1
2649.6	37.7	Р	V	28.9	-29.5	0.0	37.1	74.0	36.9	1
2828.8	38.7	Р	V	29.3	-29.1	0.0	38.9	74.0	35.1	1
3195.2	35.5	Р	V	30.9	-28.2	0.0	38.2	74.0	35.8	1
3385.4	36.1	Р	V	31.2	-27.8	0.0	39.5	74.0	34.5	1
3566.6	35.6	Р	V	31.3	-27.5	0.0	39.4	74.0	34.6	1
3766.8	36.2	Р	V	32.4	-27.4	0.0	41.2	74.0	32.8	1
4224.2	35.6	Р	V	32.4	-26.7	0.0	41.3	74.0	32.7	1
4395.4	35.2	Р	V	32.6	-26.1	0.0	41.7	74.0	32.3	1
4593.6	35.6	Р	V	33.1	-25.6	0.0	43.1	74.0	30.9	1

Note: All Peak readings above 1 GHz were under the Average limits, so average readings are not required. Judgment: Passed by at least 10 dB



Radiated emissions in a graphical format. The following chart is the same data as the previous table.

The peak limit is not shown, since the peak readings meet the lower average limit.

Frequency	Test Distance	Clas	ss B Limits				
Range (MHz)	(meters)	uV/m	dB(uV/m)				
30 - 88	3	100	40.0				
88 - 216	3	150	43.5				
216 - 960	3	200	46.0				
Above 960	3	500	54.0				

Radiated Emissions Field Strength Limits

11.9.1 Measurement Instrumentation Uncertainty

Measurement	Uncertainty
Radiated Emissions, E-field, 3 meters, 30 to 200 MHz	4.8 dB
Radiated Emissions, E-field, 3 meters, 200 to 1000 MHz	4.6 dB
Radiated Emissions, E-field, 3 meters, 1 to 6 GHz	5.0 dB
Radiated Emissions, E-field, 3 meters, 6 to 18 GHz	5.5 dB
Bandwidth using marker delta method at a span of 500 kHz	2 kHz
99% Occupied Bandwidth using REC-43	1% of frequency
	span
Amplitude measurement 1-10000 MHz	1.5 dB
Temperature THM-02	0.6 Deg C

The uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k=2 in accordance with CISPR 16-4-2.

12.0 REVISION HISTORY

Docur	Document RP-10101 Revisions:							
Rev.	Affected Sections	Description	Rationale					