47 CFR FCC Part 15 Subpart C
Section 15.249
Test Report

Product： Transceiver

Trade Name： N/A

Model Number： CARF-LCD95; SLRF-LCD95

FCC ID： ELVMTRUB

Prepared for

Nutek Corporation

No.167, Lane 235, Bauchiau Rd., Xindian District,
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Prepared by

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Testing Laboratory
1113

Remark:

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The test result in this report is only subjected to the test sample.

Table of Contents

Statement of Compliance

Applicant:	Nutek Corporation
Manufacturer:	Nutek Corporation
Product:	Transceiver
Model No.:	CARF-LCD95; SLRF-LCD95
Tested Power Voltage:	DC 3V
Date of Final Test:	May 25, 2021
Revision of Report:	Rev. 00

Configuration of Measurements and Standards Used：

FCC Rules and Regulations Part 15 Subpart C

I HEREBY CERTIFY THAT: The data shown in this report were made in accordance with the procedures given in ANSI C63.10, and the energy emitted by the device was founded to be within the limits applicable. I assume full responsibility for accuracy and completeness of these data.

Note: 1. The result of the testing report relate only to the item tested.
2. This report shall not be partial reproduced without written approval by Interocean EMC Technology Corporation.
3. Judgment of conformity is based on test result, regardless of measurement uncertainty.

Report Issued: 2021/06/07

Prepared by: Ivan Wang Approved: Jerry Chang

Ivan Wang Jerry Chang

1 General Information

1.1 Description of Equipment Under Test

Product	:	Transceiver
Model Number	:	CARF-LCD95; SLRF-LCD95
Applicant	:	**Nutek Corporation** No.167, Lane 235, Bauchiau Rd., Xindian District, New Taipei City 23145, Taiwan
Manufacturer	:	**Nutek Corporation** No.167, Lane 235, Bauchiau Rd., Xindian District, New Taipei City 23145, Taiwan
Power Supply	:	DC 3V
Operating Frequency	:	903.966 MHz - 917.196 MHz
Output Power	:	94.06 dBμV/m
Channel Number	:	50 channels
Type of Modulation	:	GFSK
Antenna Description	:	Helix Antenna. maximum Peak gain: 0dBi.
Measurement Software	:	e3; Ver: 8.120803a7-2
Receipt Date of EUT	:	Apr. 13, 2021
Date of Test	:	Apr. 22 ~ May 25, 2021
Additional Description	:	1) The test model is “**CARF-LCD95**”, designated by the applicant and included in this report. 2) The differences of all models included in this report are provided by the applicant, and the lab disclaims any liability related to reporting, if incorrect, from such provision. The difference of all models is only for different market. 3) For more detailed specification about EUT, please refer to the user’s manual.

1.2 Table for Channel Frequencies

	FC (MHz)		FC (MHz)		FC (MHz)		FC (MHz)
CH0	903.966	**CH13**	907.476	**CH26**	910.986	**CH39**	914.496
CH1	904.236	**CH14**	907.746	**CH27**	911.256	**CH40**	914.766
CH2	904.506	**CH15**	908.016	**CH28**	911.526	**CH41**	915.036
CH3	904.776	**CH16**	908.286	**CH29**	911.796	**CH42**	915.306
CH4	905.046	**CH17**	908.556	**CH30**	912.066	**CH43**	915.576
CH5	905.316	**CH18**	908.826	**CH31**	912.336	**CH44**	915.846
CH6	905.586	**CH19**	909.096	**CH32**	912.606	**CH45**	916.116
CH7	905.856	**CH20**	909.366	**CH33**	912.876	**CH46**	916.386
CH8	906.126	**CH21**	909.636	**CH34**	913.146	**CH47**	916.656
CH9	906.396	**CH22**	909.906	**CH35**	913.416	**CH48**	916.926
CH10	906.666	**CH23**	910.176	**CH36**	913.686	**CH49**	917.196
CH11	906.936	**CH24**	910.446	**CH37**	913.956		
CH12	907.206	**CH25**	910.716	**CH38**	914.226		

1.3 Test Facility

Site Description : ☒Chamber 3

Name of Firm : Interocean EMC Technology Corp.

Company web : http://www.ietc.com.tw

Location : No. 5-2, Lin 1, Tin-Fu, Lin-Kou Dist., New Taipei City, Taiwan 244, R.O.C.

Site Filing :
- Federal Communication Commissions – USA
  Designation No.: TW1020 (Test Firm Registration #: 651092)
  Designation No.: TW1113 (Test Firm Registration #: 959554)
- Innovation, Science and Economic Development Canada (ISED)
  CAB identifier: TW1113 (Ref. No 14962756)
- Voluntary Control Council for Interference by Information Technology Equipment (VCCI) – Japan
  Member No.: 1349
  Registration No. (Conducted Room): C-11094
  Registration No. (Conducted Room): T-11562
  Registration No. (OATS 1): R-11040
  Registration No. (Chamber 3): G-20080

Site Accreditation :
- Bureau of Standards and Metrology and Inspection (BSMI) – Taiwan, R.O.C.
  Accreditation No.:
  SL2-IN-E-0026 for CNS 13438 / CISPR 22
  SL2-R1-E-0026 for CNS 13439 / CISPR 13
  SL2-R2-E-0026 for CNS 13439 / CISPR 13
  SL2-L1-E-0026 for CNS 14115 / CISPR 15
- Taiwan Accreditation Foundation (TAF)
  Accreditation No.: 1113
- American Association for Laboratory Accreditation (A2LA)
  Certificate Number: 4891.01
- Vehicle Safety Certification Center (VSCC)
  Approval No.: TW16-11

1.4 Test Equipment

Instrument	Manufacturer	Model	Serial No.	Next Cal. Date
Spectrum Analyzer	R&S	FSP40	100478	2021/07/28
Loop Antenna	Electro-Metrics	EM-6879	261	2021/09/16
Bilog Antenna	ETC	MCTD 2786B	BLB17S04020	2021/05/04
Horn Antenna	Schwarzbeck	BBHA9120	9120D-1051	2021/08/03
Pre-Amplifier	EMCI	EMC001150	980130	2021/08/02
Pre-Amplifier	EMCI	EMC051845	980110	2021/07/02
RF Cable	HARBOUR	27478LL142	CBL65	2021/07/28
RF Cable	Marvelous Microwave	MCBL-LL266.50	CBL70	2021/07/28
Measurement Software	AUDIX-e3			

Note: The above equipments are within the valid calibration period.

1.5 Measurement Uncertainty

Item	Value
Chamber 3:	
Radiated Emission Test (9 kHz to 30 MHz)	3.2 dB
Radiated Emission Test (30 MHz to 200 MHz)	4.6 dB
Radiated Emission Test (200 MHz to 1 GHz) (Antenna: without tilting)	5.9 dB
Radiated Emission Test (1 GHz to 18 GHz)	5.0 dB
Radiated Emission Test (18 GHz to 40 GHz)	5.4 dB
The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%	

1.6 Summary of Measurement

Test Parameter	Reference Document CFR47 Part15	Results
RF Radiated spurious emission test	§15.205, §15.209 §15.249	Pass
Emission on the Band Edge	§15.249(d)	Pass
AC Power Line Conducted Emission test	§15.207(a)	N/A
20 dB Bandwidth	§15.215(c)	Pass
Note: N/A is an abbreviation for Not Applicable.		

2 Test Specifications

2.1 Test Standard

The EUT was performed according to FCC Part 15 Subpart C Section 15.249 procedure and setup followed by ANSI C63.10-2013 requirements.

2.2 Operation Mode

By preliminary testing and verifying three axis (X, Y and Z) position of EUT transmitted status, it was found that “Y axis” position was the worst, then the final test was executed the worst condition and test data were recorded in this report.

2.3 Test Step of EUT

2.3.1 Set the fixture to EUT for power supplying.

2.3.2 Turn on the power of all equipments.

2.3.3 Let the EUT continuous transmission.

2.3.4 Execute the test.

3 20dB Bandwidth test

3.1 Limit

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

3.2 Test Procedure

The 20dB bandwidth per FCC §15.215 was measured using spectrum analyzer with the resolutions bandwidth set at 100 kHz, the video bandwidth≧RBW, and the SPAN may equal to approximately 2 to 3 time the 20 dB bandwidth.

3.3 Test Result

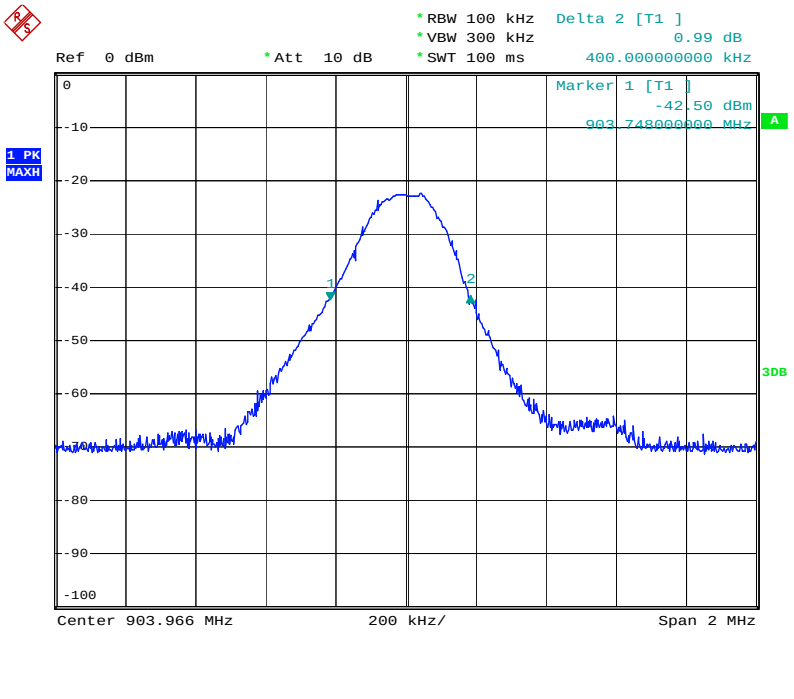
PASS.

The final test data is shown as following pages.

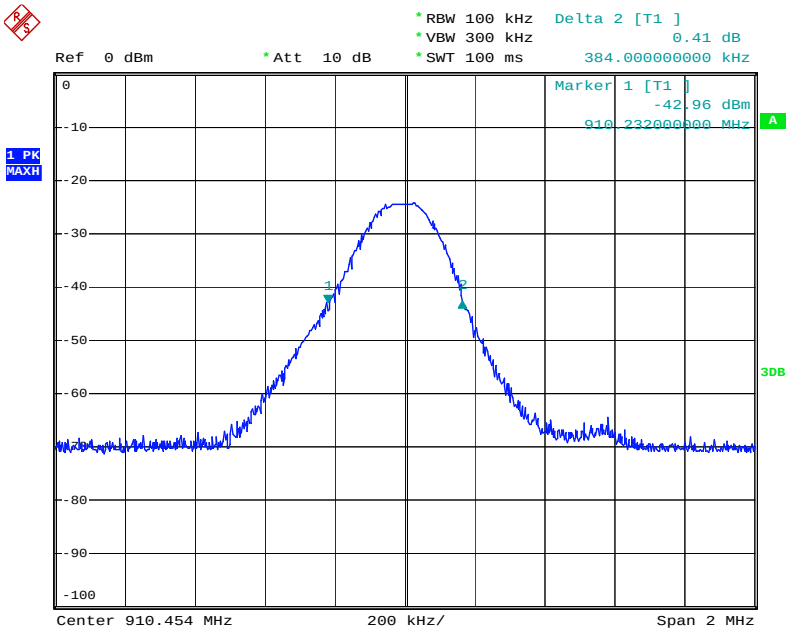
Test CH	Modulation	Frq. (MHz)	20dB Bandwidth (MHz)
Low	GFSK	903.966	0.400
MID	GFSK	910.446	0.384
HIGH	GFSK	917.196	0.388

Plot:

Low Channel:



Mid Channel:



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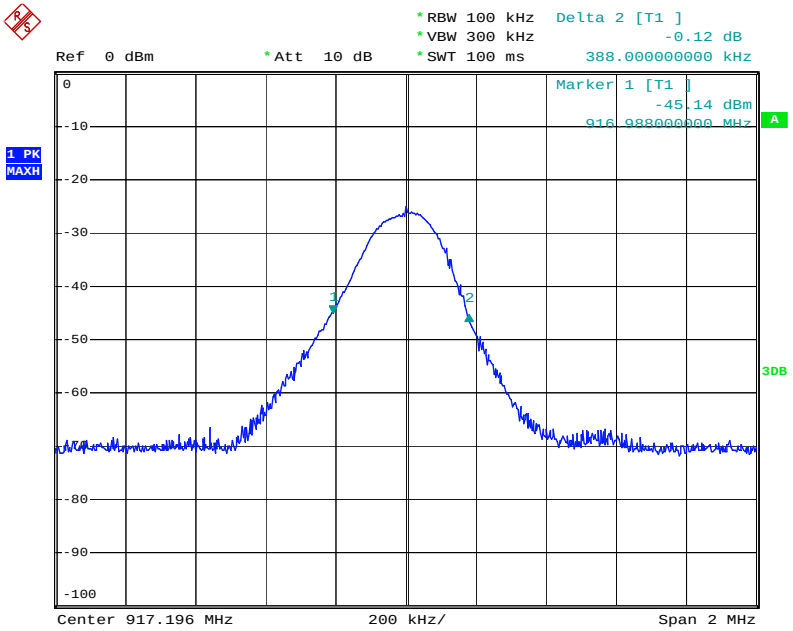
High Channel:



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4 RF Radiated spurious emission test

4.1 Limit

According to §15.249 (a), the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

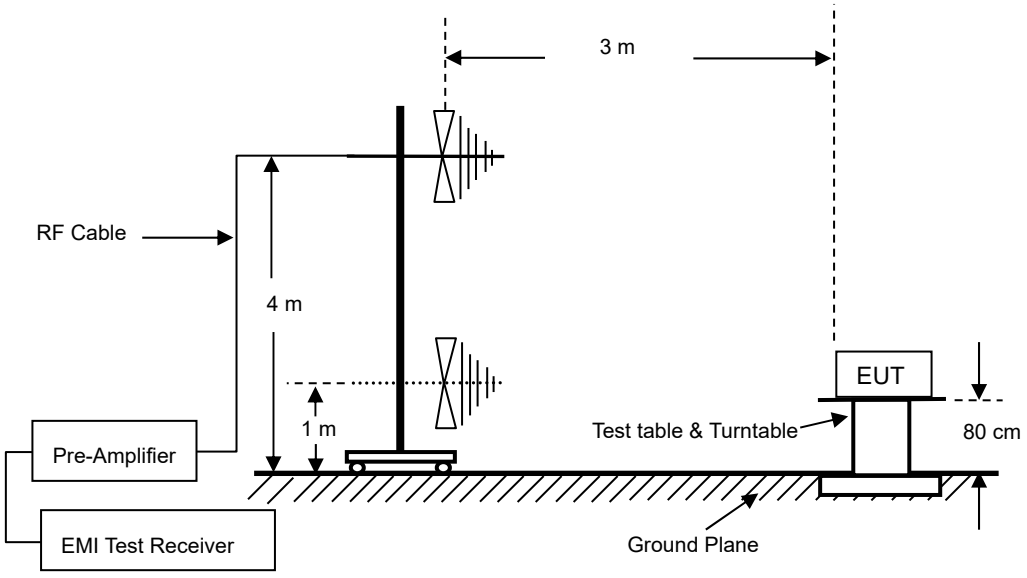
Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902 - 928 MHz	50	500
2400 - 2483.5 MHz	50	500
5725 - 5875 MHz	50	500
24.0 - 24.25 GHz	250	2500

For intentional radiator, the radiated emission shall comply with §15.209(a).

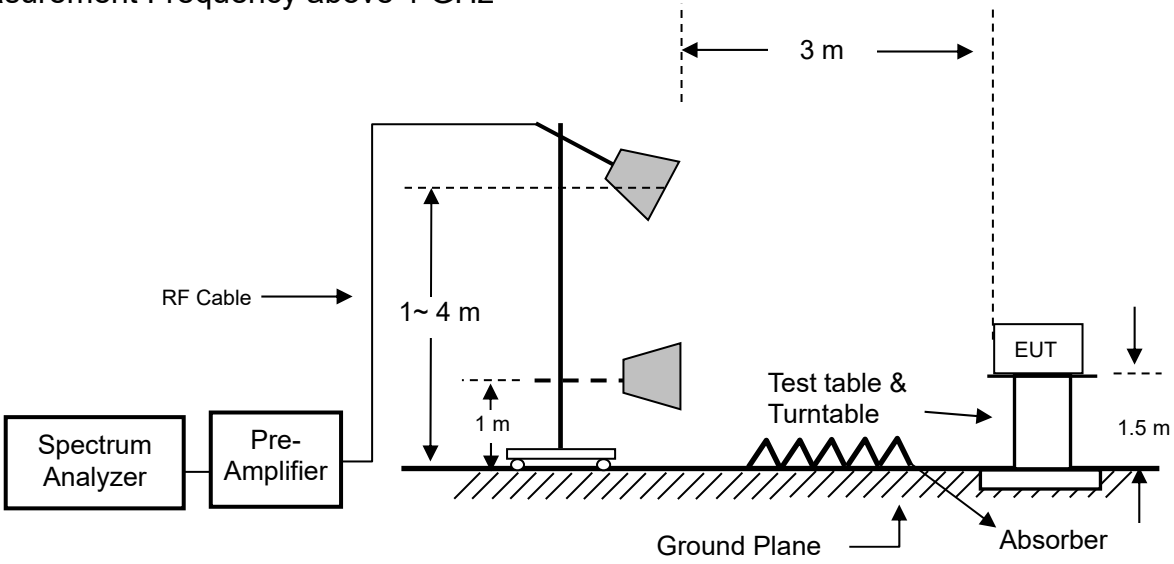
Frequency (MHz)	Field strength dB(μV/m)	Measurement distance (meters)
1.705 - 30.0	29.5	30
30 - 88	40	3
88 - 216	43.5	3
216 - 960	46	3
Above 960	54	3

4.2 Configuration of Measurement

Measurement Frequency under 1 GHz



Measurement Frequency above 1 GHz



4.3 Test Procedure

The EUT was setup to ANSI C63.10-2013.
Radiated emission measurements were performed from 30 MHz to 25 GHz. Spectrum Analyzer set as below: For frequency range from 30 MHz to 1 GHz: RBW=100 kHz or greater. For frequencies above 1 GHz: set RBW=VBW=1 MHz for peak detector and RBW=1 MHz, VBW=10 Hz for average detector.
The EUT for testing is arranged on a wooden turntable. If some peripherals apply to the EUT, the peripherals will be connected to EUT and the whole system. During the test, all cables were arranged to produce worst-case emissions. The signal is maximized through rotation. The height of antenna and polarization is changing constantly for exploring for maximum signal level. The height of antenna can be up to 4 meter and down to 1 meter.

4.4 The description of operation mode

Setup EUT to continuously transmit signal with 100% duty cycle during the test period.

4.5 Test Result

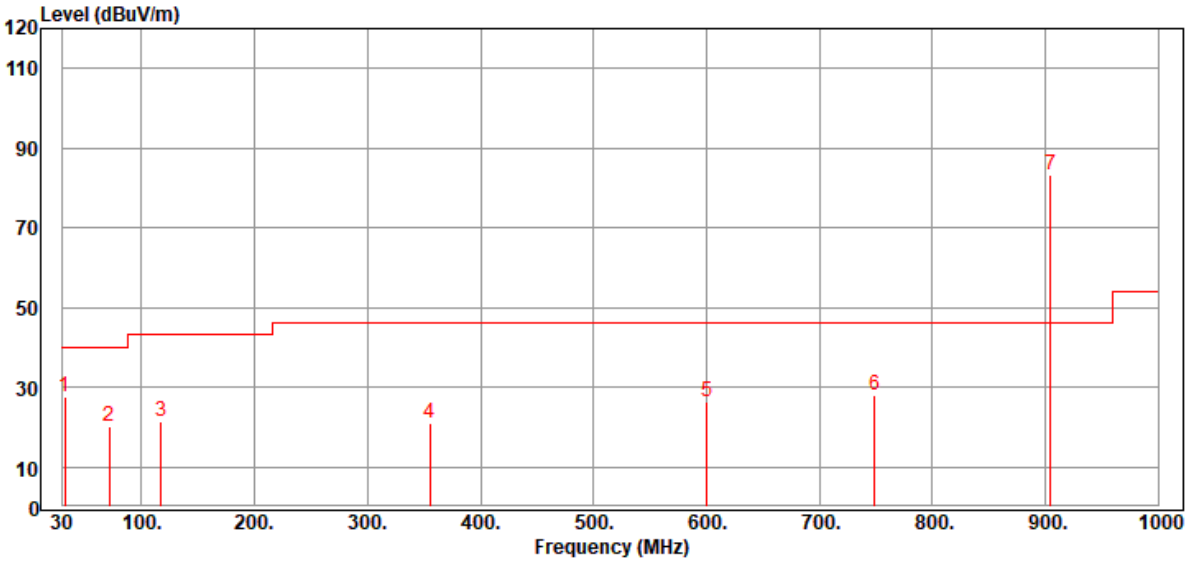
PASS.

The frequency range from 9 kHz to 30 MHz was pre-scanned and the results were 20 dB lower than the limit line which according to FCC 15.31(o) needs not be recorded.
The final test emission data is shown as following tables.

Radiated Emission Below 1 GHz

CLIENT: Nutek Corporation
EUT: Transceiver
MODEL: CARF-LCD95
RATING: DC 3V
COMMENT: Low Channel
Data:130

OPERATOR : Scott
TEST SITE : Chamber 3
TEST DISTANCE : 3 m
POLARIZATION : HORIZONTAL
TEMP/HUM : 24.4℃/45%
2021-04-22

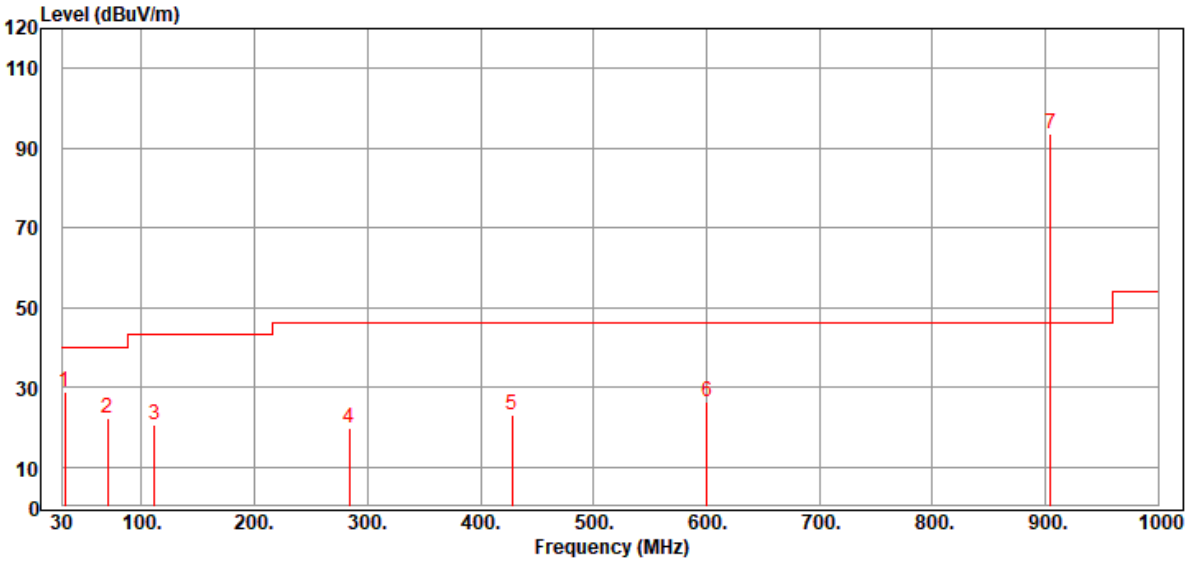


	Item	Freq.	Reading	Factor	Level	Limit	Margin	Remark
	Mark	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
	1	31.940	58.88	-31.33	27.55	40.00	-12.45	Peak
	2	71.710	58.97	-38.71	20.26	40.00	-19.74	Peak
	3	117.300	51.00	-29.52	21.48	43.50	-22.02	Peak
	4	354.950	49.82	-28.81	21.01	46.02	-25.01	Peak
	5	600.360	51.72	-25.52	26.20	46.02	-19.82	Peak
	6	748.770	50.99	-23.11	27.88	46.02	-18.14	Peak
*	7	904.940	104.17	-20.67	83.50	94.00	-10.50	Peak

Remark ： Corrected Level = Reading + Correction Factor – Preamp
Correction Factor = Antenna Factor + Cable Loss
Margin = Corrected Level – Limits

CLIENT: Nutek Corporation
EUT: Transceiver
MODEL: CARF-LCD95
RATING: DC 3V
COMMENT: Low Channel
Data:131

OPERATOR : Scott
TEST SITE : Chamber 3
TEST DISTANCE : 3 m
POLARIZATION : VERTICAL
TEMP/HUM : 24.4℃/45%
2021-04-22

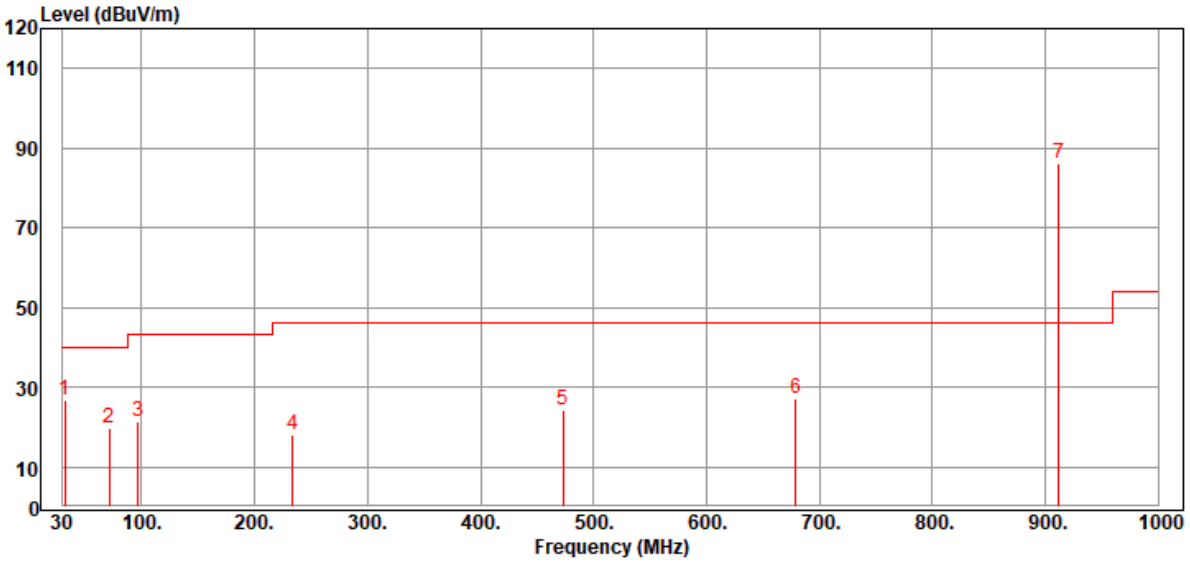


	Item	Freq.	Reading	Factor	Level	Limit	Margin	Remark
	Mark	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
	1	31.940	60.03	-31.33	28.70	40.00	-11.30	Peak
	2	69.770	60.74	-38.44	22.30	40.00	-17.70	Peak
	3	111.480	50.48	-29.94	20.54	43.50	-22.96	Peak
	4	284.140	50.10	-30.14	19.96	46.02	-26.06	Peak
	5	427.700	50.22	-27.04	23.18	46.02	-22.84	Peak
	6	600.360	51.84	-25.52	26.32	46.02	-19.70	Peak
*	7	904.940	114.22	-20.67	93.55	94.00	-0.45	Peak

Remark ： Corrected Level = Reading + Correction Factor – Preamp
Correction Factor = Antenna Factor + Cable Loss
Margin = Corrected Level – Limits

CLIENT: Nutek Corporation
EUT: Transceiver
MODEL: CARF-LCD95
RATING: DC 3V
COMMENT: Mid Channel
Data:139

OPERATOR : Scott
TEST SITE : Chamber 3
TEST DISTANCE : 3 m
POLARIZATION : HORIZONTAL
TEMP/HUM : 24.4℃/45%
2021-04-22

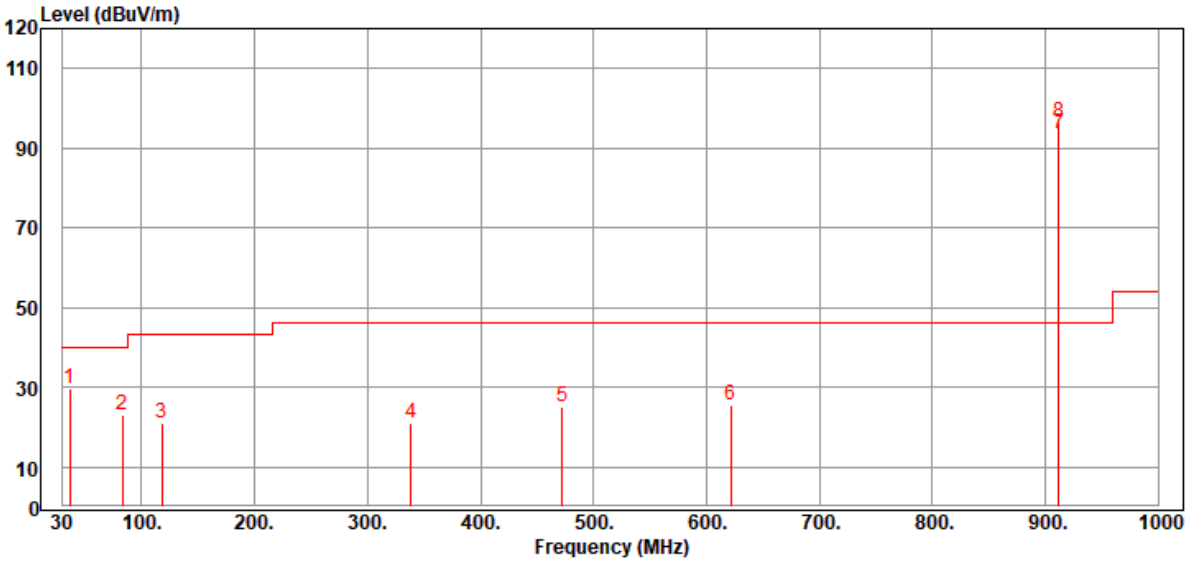


	Item Mark	Freq. MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark
	1	31.940	58.14	-31.33	26.81	40.00	-13.19	Peak
	2	71.710	58.57	-38.71	19.86	40.00	-20.14	Peak
	3	96.930	55.11	-33.52	21.59	43.50	-21.91	Peak
	4	233.700	50.85	-32.70	18.15	46.02	-27.87	Peak
	5	473.290	50.79	-26.64	24.15	46.02	-21.87	Peak
*	6	678.930	51.68	-24.51	27.17	46.02	-18.85	Peak
	7	911.730	106.77	-20.39	86.38	94.00	-7.62	Peak

Remark ： Corrected Level = Reading + Correction Factor – Preamp
Correction Factor = Antenna Factor + Cable Loss
Margin = Corrected Level – Limits

CLIENT: Nutek Corporation
EUT: Transceiver
MODEL: CARF-LCD95
RATING: DC 3V
COMMENT: Mid Channel
Data:138

OPERATOR : Scott
TEST SITE : Chamber 3
TEST DISTANCE : 3 m
POLARIZATION : VERTICAL
TEMP/HUM : 24.4℃/45%
2021-04-22

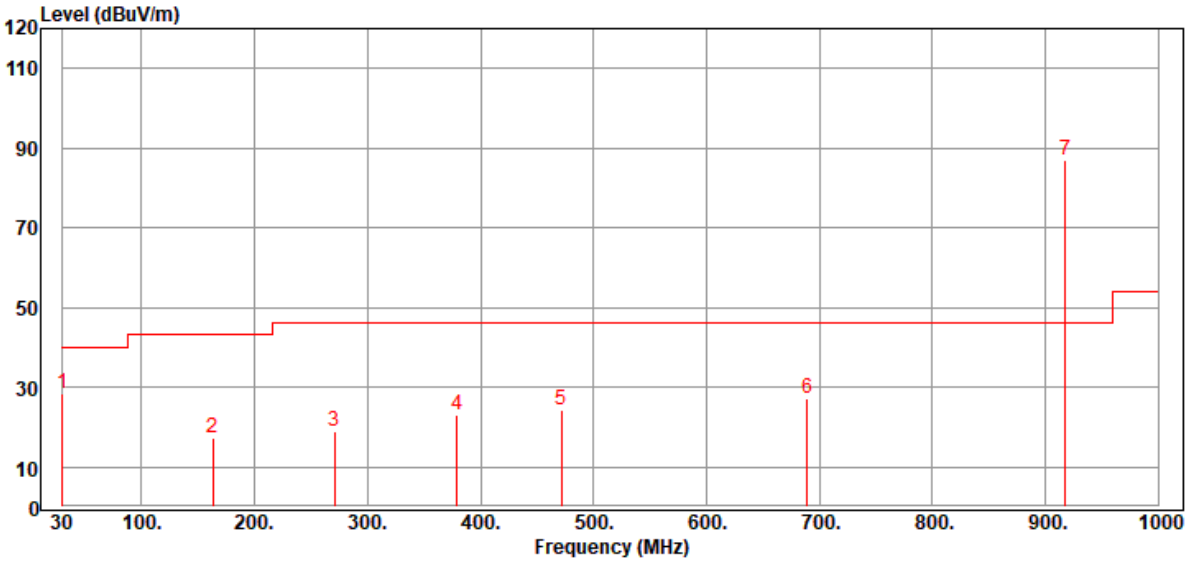


	Item Mark	Freq. MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark
	1	36.790	61.64	-32.05	29.59	40.00	-10.41	Peak
	2	83.350	60.90	-37.76	23.14	40.00	-16.86	Peak
	3	118.270	50.56	-29.51	21.05	43.50	-22.45	Peak
	4	338.460	49.86	-28.89	20.97	46.02	-25.05	Peak
	5	472.320	52.00	-26.68	25.32	46.02	-20.70	Peak
	6	621.700	50.41	-24.92	25.49	46.02	-20.53	Peak
*	7	911.730	114.20	-20.39	93.81	94.00	-0.19	QP
	8	911.730	116.81	-20.39	96.42	114.00	-17.58	Peak

Remark ： Corrected Level = Reading + Correction Factor – Preamp
Correction Factor = Antenna Factor + Cable Loss
Margin = Corrected Level – Limits

CLIENT: Nutek Corporation
EUT: Transceiver
MODEL: CARF-LCD95
RATING: DC 3V
COMMENT: High Channel
Data:146

OPERATOR : Scott
TEST SITE : Chamber 3
TEST DISTANCE : 3 m
POLARIZATION : HORIZONTAL
TEMP/HUM : 24.4℃/45%
2021-04-22

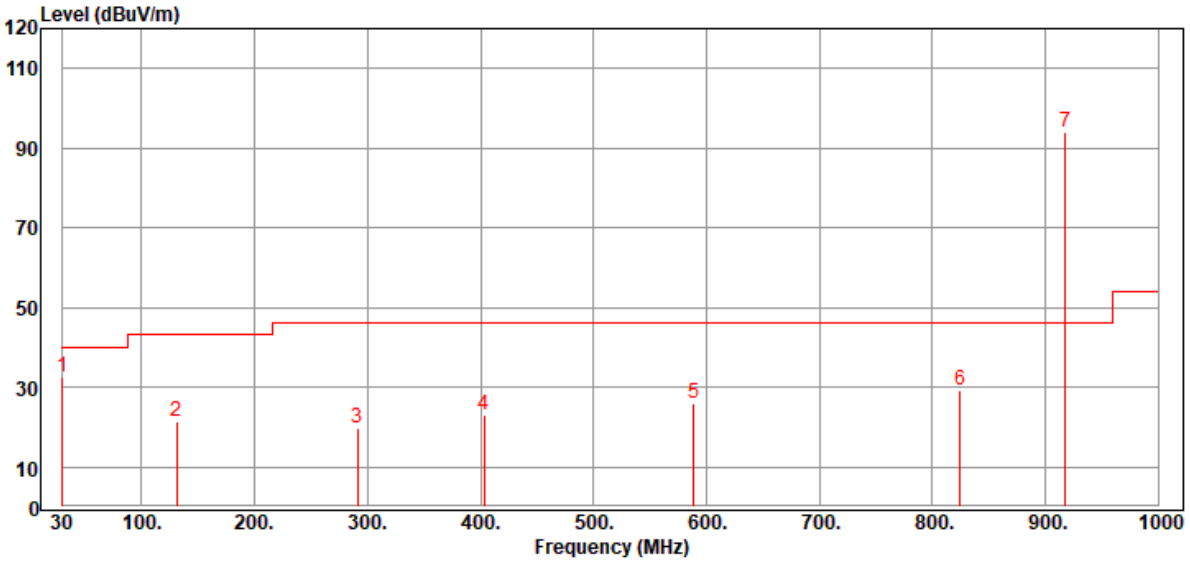


	Item Mark	Freq. MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark
	1	30.000	59.41	-30.97	28.44	40.00	-11.56	Peak
	2	162.890	50.58	-33.30	17.28	43.50	-26.22	Peak
	3	270.560	49.77	-30.66	19.11	46.02	-26.91	Peak
	4	379.200	50.93	-28.04	22.89	46.02	-23.13	Peak
	5	471.350	51.11	-26.70	24.41	46.02	-21.61	Peak
*	6	689.600	51.57	-24.34	27.23	46.02	-18.79	Peak
	7	917.550	107.14	-20.19	86.95	94.00	-7.05	Peak

Remark ： Corrected Level = Reading + Correction Factor – Preamp
Correction Factor = Antenna Factor + Cable Loss
Margin = Corrected Level – Limits

CLIENT: Nutek Corporation
EUT: Transceiver
MODEL: CARF-LCD95
RATING: DC 3V
COMMENT: High Channel
Data:215

OPERATOR : Scott
TEST SITE : Chamber 3
TEST DISTANCE : 3 m
POLARIZATION : VERTICAL
TEMP/HUM : 24.4℃/45%
2021-04-22



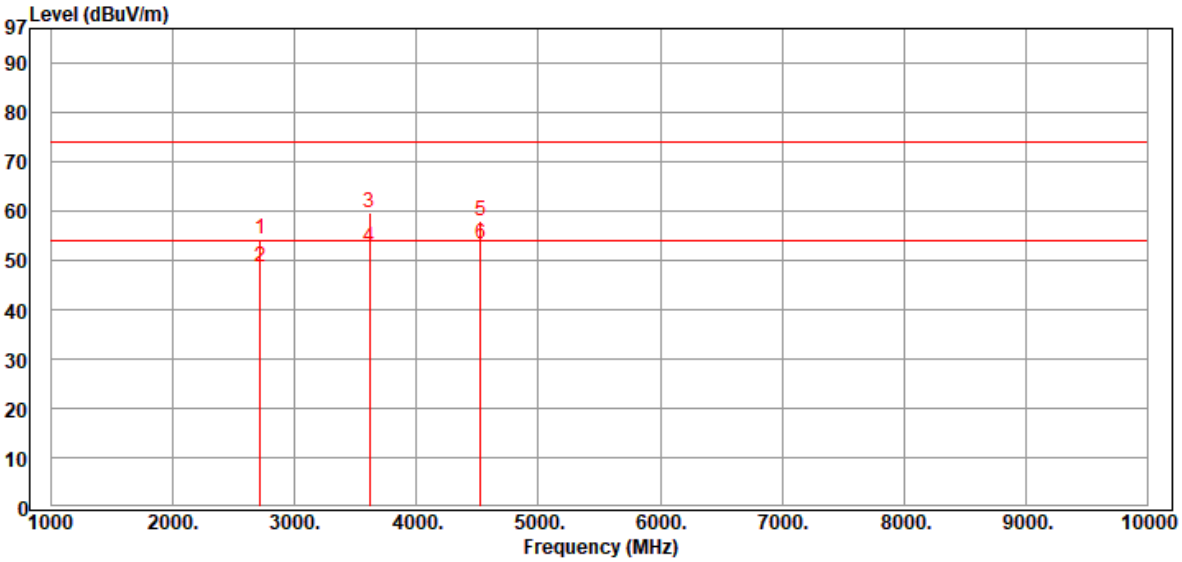
	Item	Freq.	Reading	Factor	Level	Limit	Margin	Remark
	Mark	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
	1	30.000	63.45	-30.97	32.48	40.00	-7.52	Peak
	2	130.880	51.19	-29.56	21.63	43.50	-21.87	Peak
	3	290.930	50.00	-30.00	20.00	46.02	-26.02	Peak
	4	403.450	50.34	-27.34	23.00	46.02	-23.02	Peak
	5	588.720	52.15	-26.13	26.02	46.02	-20.00	Peak
	6	824.430	51.14	-21.94	29.20	46.02	-16.82	Peak
*	7	917.550	114.04	-20.19	93.85	94.00	-0.15	Peak

Remark ： Corrected Level = Reading + Correction Factor – Preamp
Correction Factor = Antenna Factor + Cable Loss
Margin = Corrected Level – Limits

Radiated Emission Above 1 GHz

CLIENT: Nutek Corporation
EUT: Transceiver
MODEL: CARF-LCD95
RATING: DC 3V
COMMENT: Low Channel
Data:263

OPERATOR : Scott
TEST SITE : Chamber 3
TEST DISTANCE : 3 m
POLARIZATION : HORIZONTAL
TEMP/HUM : 25.2℃/42%
2021-05-21

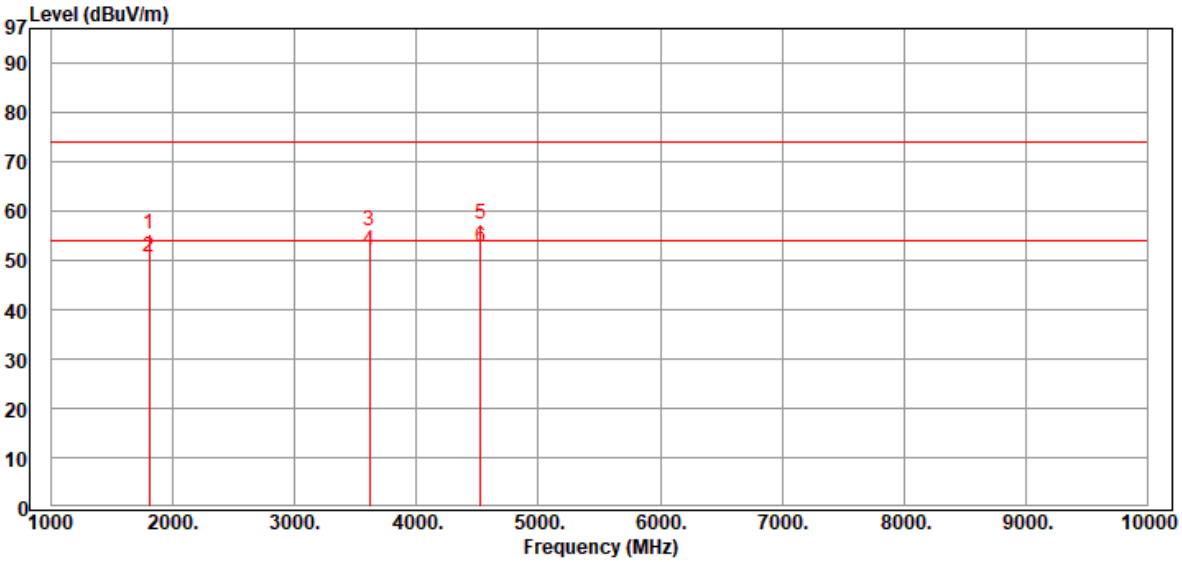


Item Mark	Freq. MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark
1	2715.000	69.40	-15.10	54.30	74.00	-19.70	Peak
2	2715.000	63.61	-15.10	48.51	54.00	-5.49	Average
3	3615.000	72.59	-12.92	59.67	74.00	-14.33	Peak
4	3615.000	65.74	-12.92	52.82	54.00	-1.18	Average
5	4525.000	67.53	-9.64	57.89	74.00	-16.11	Peak
6	4525.000	62.94	-9.64	53.30	54.00	-0.70	Average

Remark: Corrected Level = Reading + Correction Factor - Preamp
Correction Factor = Antenna Factor + Cable Loss
Margin = Corrected Level – Limits
Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.

CLIENT: Nutek Corporation
EUT: Transceiver
MODEL: CARF-LCD95
RATING: DC 3V
COMMENT: Low Channel
Data:264

OPERATOR : Scott
TEST SITE : Chamber 3
TEST DISTANCE : 3 m
POLARIZATION : VERTICAL
TEMP/HUM : 25.2℃/42%
2021-05-21

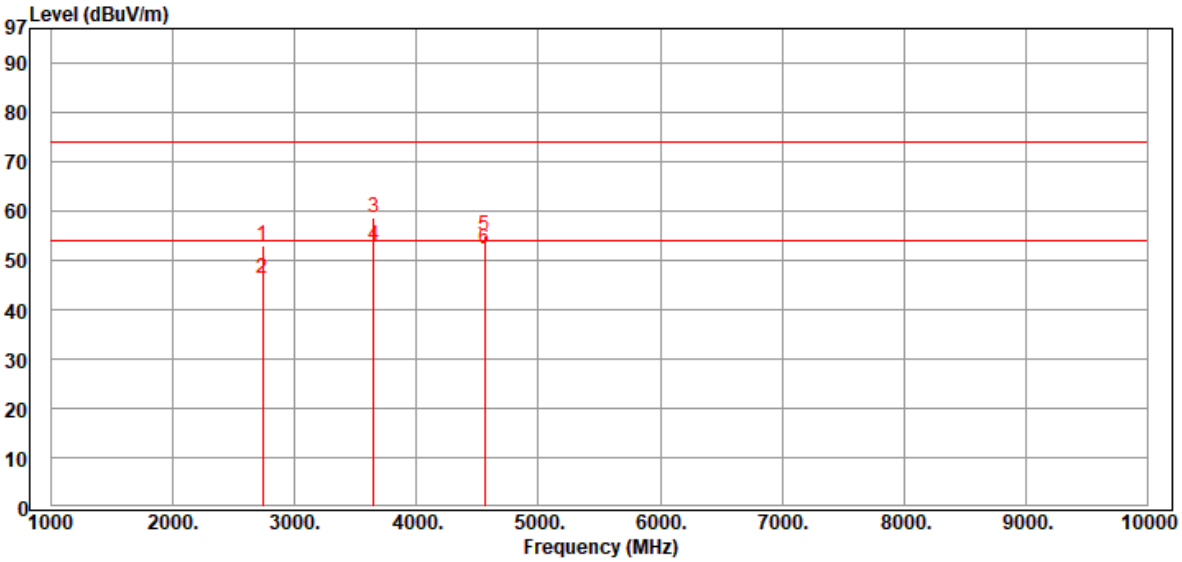


Item Mark	Freq. MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark
1	1800.000	74.86	-19.56	55.30	74.00	-18.70	Peak
2	1800.000	70.20	-19.56	50.64	54.00	-3.36	Average
3	3615.000	68.88	-12.92	55.96	74.00	-18.04	Peak
4	3615.000	64.84	-12.92	51.92	54.00	-2.08	Average
5	4525.000	67.11	-9.64	57.47	74.00	-16.53	Peak
6	4525.000	62.41	-9.64	52.77	54.00	-1.23	Average

Remark: Corrected Level = Reading + Correction Factor - Preamp
Correction Factor = Antenna Factor + Cable Loss
Margin = Corrected Level – Limits
Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that’s already beyond the background noise floor.

CLIENT: Nutek Corporation
EUT: Transceiver
MODEL: CARF-LCD95
RATING: DC 3V
COMMENT: Mid Channel
Data:265

OPERATOR : Scott
TEST SITE : Chamber 3
TEST DISTANCE : 3 m
POLARIZATION : HORIZONTAL
TEMP/HUM : 25.2℃/42%
2021-05-21

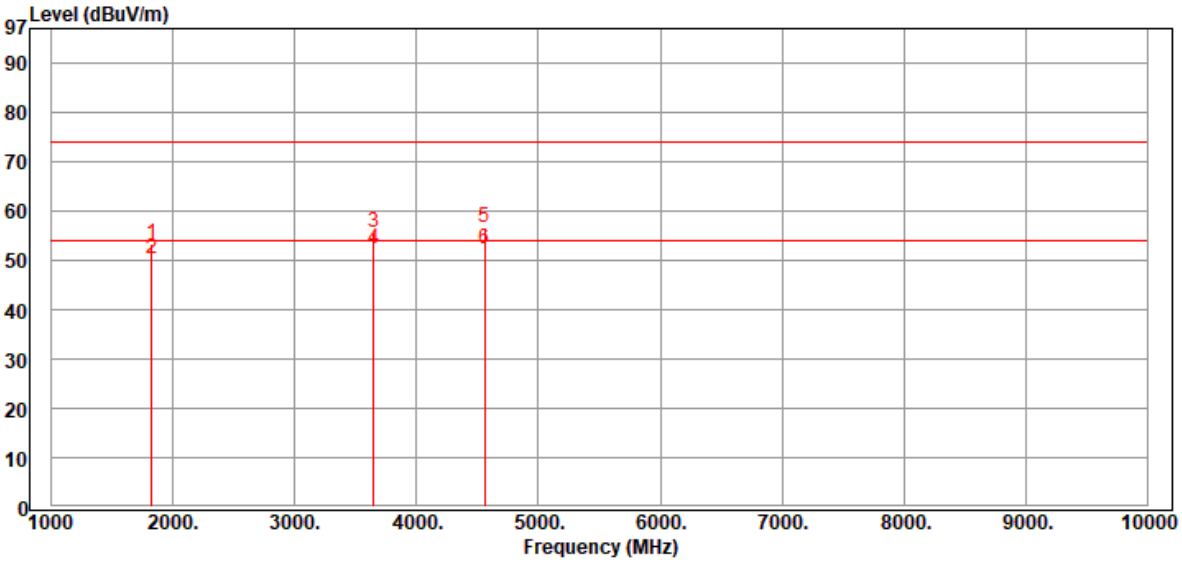


Item Mark	Freq. MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark
1	2735.000	68.22	-15.07	53.15	74.00	-20.85	Peak
2	2735.000	61.48	-15.07	46.41	54.00	-7.59	Average
3	3645.000	71.56	-12.85	58.71	74.00	-15.29	Peak
4	3645.000	65.96	-12.85	53.11	54.00	-0.89	Average
5	4555.000	64.71	-9.56	55.15	74.00	-18.85	Peak
6	4555.000	61.92	-9.56	52.36	54.00	-1.64	Average

Remark: Corrected Level = Reading + Correction Factor - Preamp
Correction Factor = Antenna Factor + Cable Loss
Margin = Corrected Level – Limits
Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.

CLIENT: Nutek Corporation
EUT: Transceiver
MODEL: CARF-LCD95
RATING: DC 3V
COMMENT: Mid Channel
Data:266

OPERATOR : Scott
TEST SITE : Chamber 3
TEST DISTANCE : 3 m
POLARIZATION : VERTICAL
TEMP/HUM : 25.2℃/42%
2021-05-21

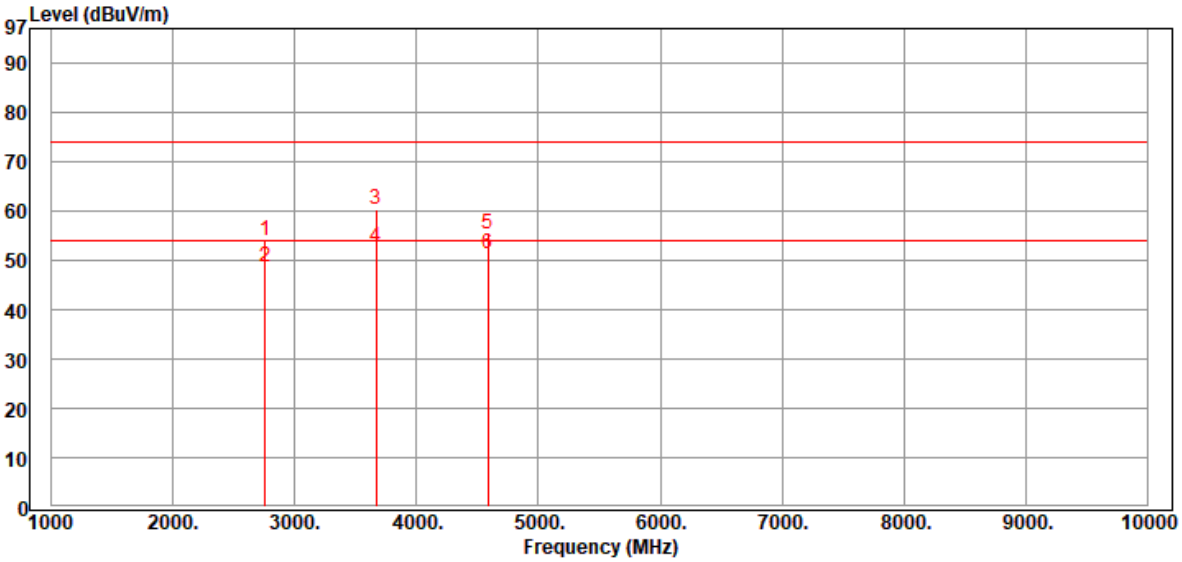


Item Mark	Freq. MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark
1	1820.000	72.92	-19.48	53.44	74.00	-20.56	Peak
2	1820.000	69.85	-19.48	50.37	54.00	-3.63	Average
3	3645.000	68.62	-12.85	55.77	74.00	-18.23	Peak
4	3645.000	65.03	-12.85	52.18	54.00	-1.82	Average
5	4555.000	66.21	-9.56	56.65	74.00	-17.35	Peak
6	4555.000	61.92	-9.56	52.36	54.00	-1.64	Average

Remark: Corrected Level = Reading + Correction Factor - Preamp
Correction Factor = Antenna Factor + Cable Loss
Margin = Corrected Level – Limits
Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that’s already beyond the background noise floor.

CLIENT: Nutek Corporation
EUT: Transceiver
MODEL: CARF-LCD95
RATING: DC 3V
COMMENT: High Channel
Data:267

OPERATOR : Scott
TEST SITE : Chamber 3
TEST DISTANCE : 3 m
POLARIZATION : HORIZONTAL
TEMP/HUM : 25.2℃/42%
2021-05-21

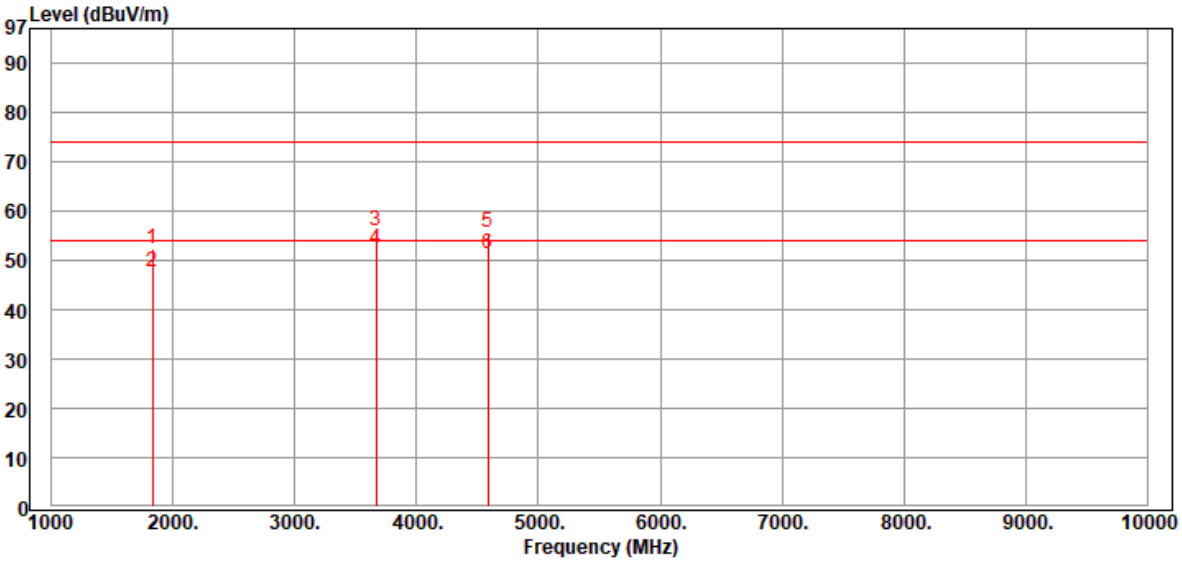


Item Mark	Freq. MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark
1	2755.000	68.89	-15.03	53.86	74.00	-20.14	Peak
2	2755.000	63.72	-15.03	48.69	54.00	-5.31	Average
3	3665.000	73.05	-12.77	60.28	74.00	-13.72	Peak
4	3665.000	65.53	-12.77	52.76	54.00	-1.24	Average
5	4585.000	64.73	-9.49	55.24	74.00	-18.76	Peak
6	4585.000	60.85	-9.49	51.36	54.00	-2.64	Average

Remark: Corrected Level = Reading + Correction Factor - Preamp
Correction Factor = Antenna Factor + Cable Loss
Margin = Corrected Level – Limits
Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.

CLIENT: Nutek Corporation
EUT: Transceiver
MODEL: CARF-LCD95
RATING: DC 3V
COMMENT: High Channel
Data:268

OPERATOR : Scott
TEST SITE : Chamber 3
TEST DISTANCE : 3 m
POLARIZATION : VERTICAL
TEMP/HUM : 25.2℃/42%
2021-05-21



Item Mark	Freq. MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark
1	1830.000	71.68	-19.45	52.23	74.00	-21.77	Peak
2	1830.000	67.15	-19.45	47.70	54.00	-6.30	Average
3	3665.000	68.68	-12.77	55.91	74.00	-18.09	Peak
4	3665.000	64.95	-12.77	52.18	54.00	-1.82	Average
5	4585.000	65.07	-9.49	55.58	74.00	-18.42	Peak
6	4585.000	60.90	-9.49	51.41	54.00	-2.59	Average

Remark: Corrected Level = Reading + Correction Factor - Preamp
Correction Factor = Antenna Factor + Cable Loss
Margin = Corrected Level – Limits
Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that’s already beyond the background noise floor.

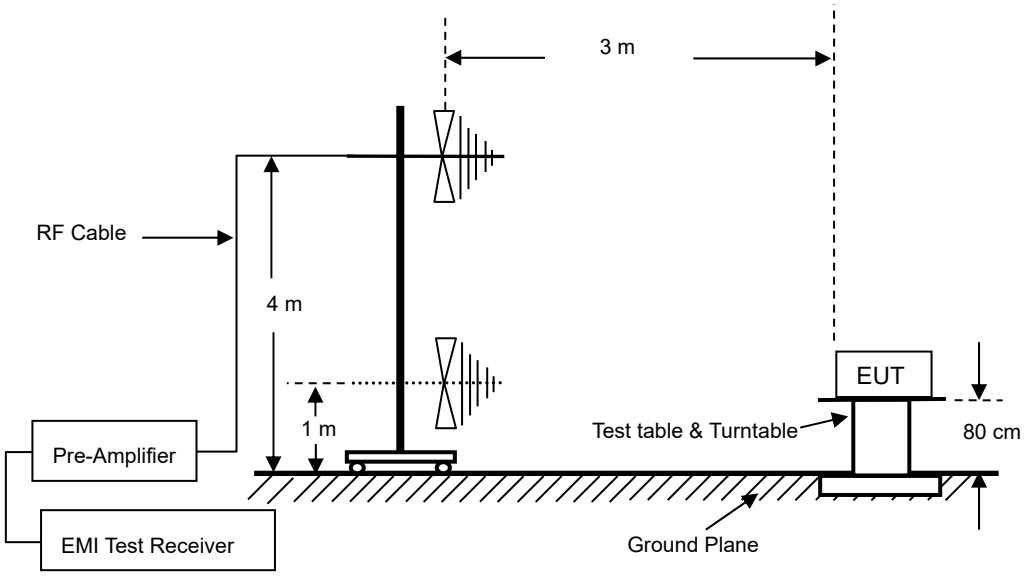
5 Emission on the Band Edge test

5.1 Limit

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

5.2 Configuration of Measurement

Measurement Frequency under 1 GHz



5.3 Test Procedure

The EUT was setup to ANSI C63.10-2013.
The EUT for testing is arranged on a wooden turntable. If some peripherals apply to the EUT, the peripherals will be connected to EUT and the whole system. During the test, all cables were arranged to produce worst-case emissions. The signal is maximized through rotation. The height of antenna and polarization is changing constantly for exploring for maximum signal level. The height of antenna can be up to 4 meter and down to 1 meter.

5.4 Test Result

PASS.
The final test data is shown on as following pages.

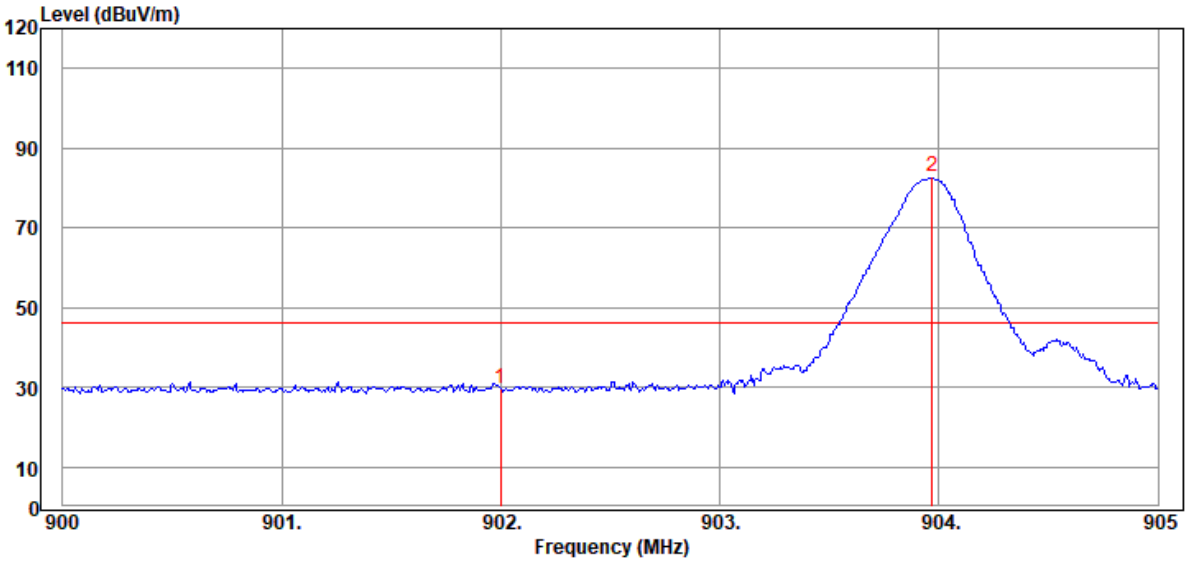
Band edge

CLIENT: Nutek Corporation
EUT: Transceiver
MODEL: CARF-LCD95
RATING: DC 3V
COMMENT: Low Channel

OPERATOR : Scott
TEST SITE : Chamber 3
TEST DISTANCE : 3 m
POLARIZATION : HORIZONTAL
TEMP/HUM : 24.4℃/45%

Data:299

2021-04-22

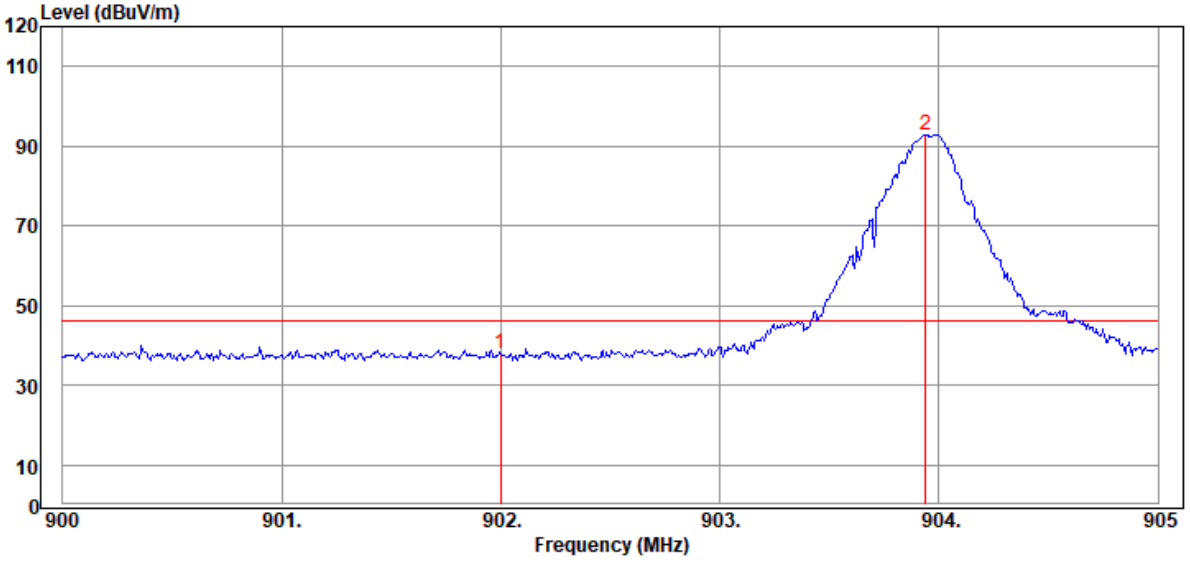


Item Mark	Freq. MHz	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Remark
1	902.000	50.30	-20.75	29.55	46.02	-16.47	Peak
2	903.970	103.69	-20.69	83.00	46.02	36.98	Peak

CLIENT: Nutek Corporation
EUT: Transceiver
MODEL: CARF-LCD95
RATING: DC 3V
COMMENT: Low Channel

OPERATOR : Scott
TEST SITE : Chamber 3
TEST DISTANCE : 3 m
POLARIZATION : VERTICAL
TEMP/HUM : 24.4℃/45%

Data:300 2021-04-22

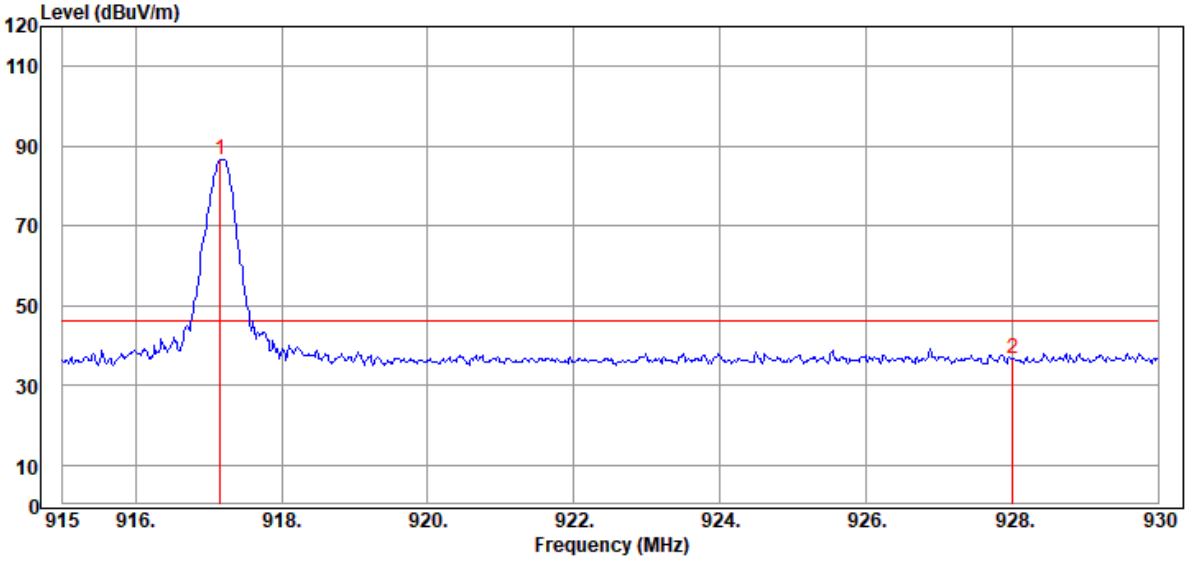


Item	Freq.	Reading	Factor	Level	Limit	Margin	Remark
Mark	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	902.000	58.63	-20.75	37.88	46.02	-8.14	Peak
2	903.940	113.52	-20.69	92.83	46.02	46.81	Peak

CLIENT: Nutek Corporation
EUT: Transceiver
MODEL: CARF-LCD95
RATING: DC 3V
COMMENT: High Channel

OPERATOR : Scott
TEST SITE : Chamber 3
TEST DISTANCE : 3 m
POLARIZATION : HORIZONTAL
TEMP/HUM : 24.4℃/45%

Data:302 2021-04-22

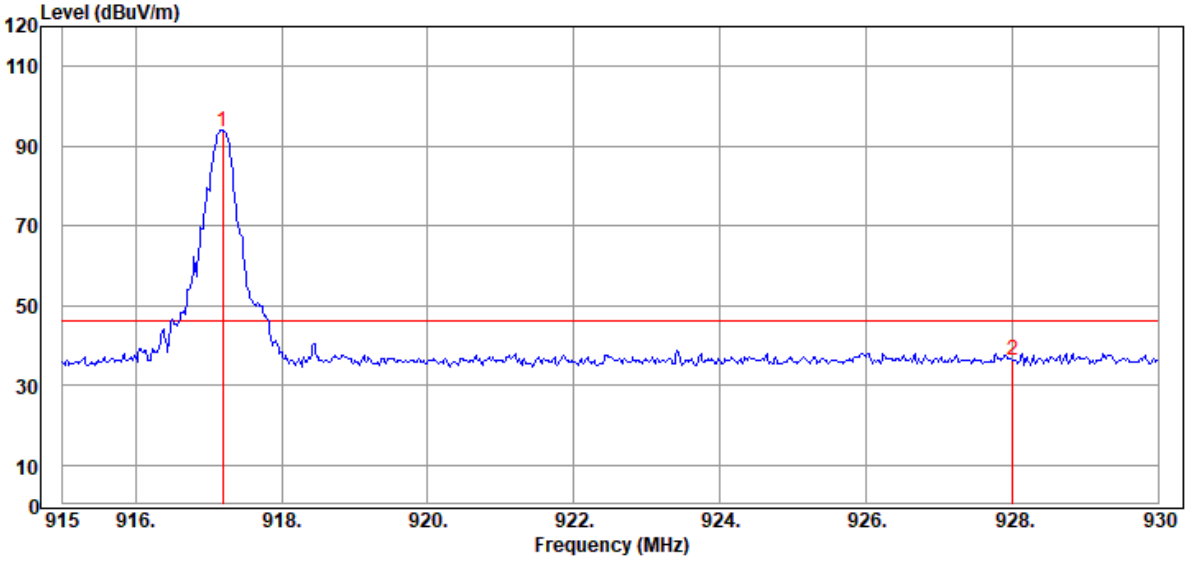


Item	Freq.	Reading	Factor	Level	Limit	Margin	Remark
Mark	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	917.160	106.74	-20.20	86.54	46.02	40.52	Peak
2	928.005	56.40	-19.69	36.71	46.02	-9.31	Peak

CLIENT: Nutek Corporation
EUT: Transceiver
MODEL: CARF-LCD95
RATING: DC 3V
COMMENT: High Channel

OPERATOR : Scott
TEST SITE : Chamber 3
TEST DISTANCE : 3 m
POLARIZATION : VERTICAL
TEMP/HUM : 24.4℃/45%

Data:228 2021-04-22



Item	Freq.	Reading	Factor	Level	Limit	Margin	Remark
Mark	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1	917.190	113.95	-20.20	93.75	46.02	47.73	Peak
2	928.005	56.12	-19.69	36.43	46.02	-9.59	Peak