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Radio Test Report

FCC Part 24 (901-902 MHz and 930-941 MHz)

FCC Part 90 (896-901 MHz, 929-930 MHZ & 935-940 MHz

FCC Part 101 (928 To 960 MHz)

Model: LN900

E5MDS-LN900-1
GE MDS LLC 175 Science Parkway Rochester, NY 14620
National Technical Systems 41039 Boyce Road. Fremont, CA. 94538-2435
PR085381
September 13, 2018
October 9, 2018
October 28, December 11 and 14, 2015, May 23, 24 and 26, 2016 and August 29, 30 and September 4, 2018

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REVISION HISTORY

Rev#	Date	Comments	Modified By
-	September 13, 2018	First release	
1	September 17, 2018	Added additional test data for FSK modulation	dwb
2	September 25, 2018	Corrected typos on page 8, 24 and 47	dwb
3	October 9, 2018	Added notes regarding emissions masks to pages 55, 56, 63, 64 and 65	dwb

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SCOPE

Tests have been performed on the GE MDS LLC model LN900, pursuant to the relevant requirements of the following standard(s) in order to obtain device certification against the regulatory requirements of the Federal Communications Commission and Innovation Science and Economic Development Canada.

- Code of Federal Regulations (CFR) Title 47 Part 2
- CFR 47 Part 24 (Personal Communication Services) Subpart D
- CFR 47 Part 90 (Private Land Mobile Radio Services) Subparts P and S
- CFR 47 Part 101 (Fixed Microwave Services)

Conducted and radiated emissions data has been collected, reduced, and analyzed within this report in accordance with measurement guidelines set forth in the following reference standards and as outlined in National Technical Systems test procedures:

ANSI C63.26:2015

The intentional radiator above has been tested in a simulated typical installation to demonstrate compliance with the relevant Innovation Science and Economic Development Canada performance and procedural standards.

Every practical effort was made to perform an impartial test using appropriate test equipment of known calibration. All pertinent factors have been applied to reach the determination of compliance.

National Technical Systems is accredited by the A2LA, certificate number 0214.26, to perform the test(s) listed in this report, except where noted otherwise.

The test results recorded herein are based on a single type test of the GE MDS LLC model LN900 and therefore apply only to the tested sample. The sample was selected and prepared by Dennis McCarthy of GE MDS LLC.



OBJECTIVE

The primary objective of the manufacturer is compliance with the regulations outlined in the previous section.

Prior to marketing in the USA, the device requires certification. Prior to marketing in Canada, Class I transmitters, receivers and transceivers require certification.

Certification is a procedure where the manufacturer submits test data and technical information to a certification body and receives a certificate or grant of equipment authorization upon successful completion of the certification body's review of the submitted documents. Once the equipment authorization has been obtained, the label indicating compliance must be attached to all identical units, which are subsequently manufactured.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product which may result in increased emissions should be checked to ensure compliance has been maintained (i.e., printed circuit board layout changes, different line filter, different power supply, harnessing or I/O cable changes, etc.).

STATEMENT OF COMPLIANCE

The tested sample of GE MDS LLC model LN900 complied with the requirements of the standards and frequency bands declared in the scope of this test report.

Maintenance of compliance is the responsibility of the manufacturer. Any modifications to the product should be assessed to determine their potential impact on the compliance status of the device with respect to the standards detailed in this test report.

DEVIATIONS FROM THE STANDARDS

No deviations were made from the published requirements listed in the scope of this report.



TEST RESULTS

FCC Part 101

FCC		Description	Measured	Limit	Result		
	Transmitter Modulation, output power and other characteristics						
§2.1033 (c) (5) §101.101		Frequency range(s)	928-960 MHz	928-960 MHz	Complied		
		RF power output at the antenna terminals	20 - 41 dBm	-	-		
\$2.1033 (c) (6) \$2.1033 (c) (7) \$2.1046 \$101.113		EIRP	36.5 dBm to 57.4 dBm	44 - 70 dBm	Complied		
§2.1033 (c)		Emission types	F1D, F2D, F3D, D1D				
(4) §2.1047 §101.111		Emission mask	Complied with Mask	101.111(a)(5) or 101.111(a)(6)	Complied		
\$2.1049 \$101.147		Occupied Bandwidth	10.2 kHz 10.3 kHz 10.8 kHz 15.4 kHz 17.2 kHz 21.5 kHz 43.2 kHz	12.5, 25 or 50 kHz	Complied		
	urious emissions				1		
§2.1051 §2.1057		At the antenna terminals	-25.5 dBm	-20 dBm	Complied		
§2.1053 §2.1057		Field strength	-28.2 dBm @ 9439.9 MHz	-20 dBm	Complied		
Other details							
§2.1055 §101.107		Frequency stability	0.3 ppm	1.5 ppm	Complied		
§2.1093		RF Exposure	See separate exhibit Com		Complied		
§2.1033 (c) (8)		Final radio frequency amplifying circuit's dc voltages and currents for normal operation over the power range	34.:	5 VDC, 755 mA	· · · ·		
-	-	Antenna Gain	L	Jp to 16.5 dBi			
Notes							



FCC	Description	Measured	Limit	Result
Transmitter Mo	lulation, output power and other characte			
§2.1033 (c) (5) §90.35	Frequency range(s)	896-901 MHz, 929-930 MHz 935-940 MHz	896-901 MHz, 929-930 MHz 935-940 MHz	Complied
\$2.1033 (c) (6) \$2.1033 (c) (7) \$2.1046 \$90.205 \$90.635	RF power output at the antenna terminals	20 dBm to 40.8 dBm	50 dBm	Complied
§2.1033 (c) (4)	Emission types	F1D, F2D, F3D, D1D	-	-
§2.1047 §90.210	Emission mask	Complied with Mask	Masks D, G and J	Complied
\$2.1049 \$90.209	Occupied Bandwidth	5.19kHz 10,2kHz 10.3kHz 10.8kHz 15.4kHz 17.2kHz	11.5 or 20 kHz	Complied
Transmitter spu	ious emissions			
\$2.1051 \$2.1057 \$90.210	At the antenna terminals	-27.3 dBm @ 1858.9 MHz	-20 dBm	Complied
\$2.1053 \$2.1057 \$90.210	Field strength	-24.6 dBm @ 9319.6 MHz	-20 dBm	Complied
Other details			I	
§2.1055 §90.213	Frequency stability	0.3 ppm	1.5 ppm ¹	Complied
§2.1093	RF Exposure	See separate exhibit C		Complied
§2.1033 (c) (8)	Final radio frequency amplifying circuit's dc voltages and currents for normal operation over the power range	for 34.5 VDC, 755 mA		
-	- Antenna Gain	U	Jp to 16.5 dBi	
Notes 1 – FCC Part 90.2	13 (footnote 14) allows 1.5 ppm for control		·	

FCC Part 90



FCC Part 24

FCC	Description	Measured	Limit	Result
Transmitter Mo	dulation, output power and other characte	ristics		
§2.1033 (c) (5)	Frequency Range	901-902 MHz	901-902 MHz	Complied
§24.129	Frequency Range	930-941 MHz	930-941 MHz	Complied
§2.1033 (c) (6)				
§2.1033 (c) (7)	ERP	20 to 38.5 dBm	901-902 MHz	Complied
§2.1046	EKF	20 to 58.5 ubiii	7 Watts	Complied
§24.132				
§2.1033 (c) (6)			930-941 MHz	
§2.1033 (c) (7)	ERP	20 to 40.7 dBm	7 Watts mobile	Complied
§2.1046	EKF	20 to 40.7 dBill	3500 W fixed	Complied
§24.132			5500 w fixed	
§2.1033 (c)	Emission types	D1D	-	-
(4)		Complied with		
§2.1047	Emission mask	Mask	24.133(a)(2)	Complied
§24.133				
		10.3 kHz		
§2.1049		10.8 kHz		
§24.131	Occupied Bandwidth	17.2 kHz	20 or 45kHz	Complied
821.131		21.5 kHz		
		43.2 kHz		
Transmitter spu	rious emissions	r		T
§2.1051		All emission <		
§2.1057	At the antenna terminals	-13 dBm	-13 dBm	Complied
§24.133		15 dDill		
§2.1053		-13.1 dBm @		
§2.1057	Field strength	9009.03 MHz	-13 dBm	Complied
§24.133		9009.05 WHILE		
Other details				
§2.1055	Frequency stability	0.3 ppm	1.0 ppm	Complied
§24.135				-
§2.1093	RF Exposure	See separ	ate exhibit	Complied
	Final radio frequency			
	amplifying circuit's dc			
§2.1033 (c) (8)	voltages and currents for	34.	5 VDC, 755 mA	
	normal operation over			
	the power range			
-	- Antenna Gain	J	Jp to 16.5 dBi	
Notes				
	surement at the mask edge is made in a refer	ence bandwidth of	300 Hz and the me	easured
power is integrate	ed over 30 kHz.			



EXTREME CONDITIONS

Frequency stability is determined over extremes of temperature and voltage. The extremes of voltage were 10 to 60 VDC.

The extremes of temperature were -30° C to $+50^{\circ}$ C as specified in FCC §2.1055(a)(1).

MEASUREMENT UNCERTAINTIES

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) and were calculated in accordance with NAMAS document NIS 81 and M3003.

Measurement Type	Measurement Unit	Frequency Range	Expanded Uncertainty
RF frequency	Hz	25 to 7,000 MHz	1.7 x 10 ⁻⁷
RF power, conducted	dBm	25 to 7,000 MHz	± 0.52 dB
Conducted emission of transmitter	dBm	25 to 40,000 MHz	$\pm 0.7 \text{ dB}$
Conducted emission of receiver	dBm	25 to 40,000 MHz	$\pm 0.7 \text{ dB}$
Radiated emission (substitution method)	dBm	25 to 40,000 MHz	± 2.5 dB
Radiated emission (field strength)	dBµV/m	25 to 1,000 MHz 1 to 40 GHz	$\begin{array}{c} \pm 3.6 \text{ dB} \\ \pm 6.0 \text{ dB} \end{array}$



EQUIPMENT UNDER TEST (EUT) DETAILS

GENERAL

The GE MDS LLC model LN900 is a 900 MHz radio module that is designed for licensed operation under FCC rule parts 24, 90 and 101 and RSS-119 using FSK and QAM modulations Since the EUT could be placed in any position, the EUT and interface adapter board were treated as tabletop equipment during testing to simulate the end-user environment. The electrical rating of the EUT is 11.8-52.2 Volts DC.

The samples were received on October 28, 2015, May 23, 2016 and August 24, 2018 and tested on October 28, December 11 and 14, 2015, May 23, 24 and 26, 2016 and August 29, 30 and September 4, 2018. The following samples of the EUT were used for testing.

Company	Model	Description	Serial Number	FCC ID
GE MDS LLC	LN900	Wireless Transceiver Module	2954262	E5MDS-LN900-1
GE MDS LLC	LN900	Wireless Transceiver Module	2954264	E5MDS-LN900-1
GE MDS LLC	LN900	Wireless Transceiver Module	2690226	E5MDS-LN900-1
GE MDS LLC	LN900	Wireless Transceiver Module	2629713	E5MDS-LN900-1

ENCLOSURE

The EUT has no enclosure. It is designed to be installed within the enclosure of a host product.

MODIFICATIONS

No modifications were made to the EUT during the time the product was at National Technical Systems.

SUPPORT EQUIPMENT

The following equipment was used as support equipment for testing:

Company	Model	Description	Serial Number	FCC ID
HP	ProBook 6570b	Laptop	5CB2480TRQ	-
Agilent	E3610A	Power Supply	MY40011740	-
HP	6024A	Power Supply	2430A-03013	-

Note: The Agilent PS was only used for radiated emissions testing

Note: The Laptop was used to setup the radio module and then removed for radiated emissions tests.

No remote support equipment was used during testing.



EUT INTERFACE PORTS

The I/O cabling configuration during testing was as follows:

Port	Connected To	Cable(s) Description Shielded or Unshielded Length(m)		
T OIL	Connected 10			
RF	Termination	-	-	-

Additional on Support Equipment

Port	Connected To		Cable(s)	
FUIL	Connected 10	Description	Shielded or Unshielded	Length(m)
Adapter Board PS Input	Power Supply	Four wire	Unshielded	1.5
Adapter Board Serial	Laptop	Multiwire	Shielded	2
Adapter board Gnd	Ground Plane	Braided wire	Unshielded	2.4

Note: For radiated emissions testing an additional cable from the second PS was used.

EUT OPERATION

During emissions testing the EUT was configured using the laptop to transmit a continuous modulated signal on the selected frequency at the programmed power setting.



TESTING

GENERAL INFORMATION

Antenna port measurements were taken at the National Technical Systems test site located at 41039 Boyce Road, Fremont, CA 94538-2435.

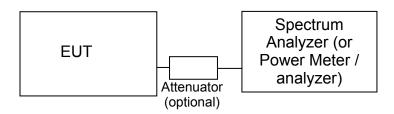
Radiated spurious emissions measurements were taken at the National Technical Systems Anechoic Chambers and/or Open Area Test Site(s) listed below. The sites conform to the requirements of ANSI C63.4 *American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz* and CISPR 16-1-4 - *Specification for radio disturbance and immunity measuring apparatus and methods Part 1-4: Radio disturbance and immunity measuring apparatus Ancillary equipment Radiated disturbances.* They are on file with the FCC and Innovation Science and Economic Development Canada.

Site	Designation / Reg	istration Numbers	Location	
5110	FCC	Canada	Location	
			41039 Boyce Road	
Chamber 4	US0027	IC 2845B-4	Fremont,	
			CA 94538-2435	

ANSI C63.4 recommends that ambient noise at the test site be at least 6 dB below the allowable limits. Ambient levels are below this requirement. The test site(s) contain separate areas for radiated and conducted emissions testing. Results from testing performed in this chamber have been correlated with results from an open area test site. Considerable engineering effort has been expended to ensure that the facilities conform to all pertinent requirements of ANSI C63.4.

RF PORT MEASUREMENT PROCEDURES

Conducted measurements are performed with the EUT's rf input/output connected to the input of a spectrum analyzer, power meter or modulation analyzer. When required an attenuator, filter and/or dc block is placed between the EUT and the spectrum analyzer to avoid overloading the front end of the measurement device. Measurements are corrected for the insertion loss of the attenuators and cables inserted between the rf port of the EUT and the measurement equipment.



Test Configuration for Antenna Port Measurements

For devices with an integral antenna the output power and spurious emissions are measured as a field strength at a test distance of (typically) 3m and then converted to an eirp using a substitution measurement (refer to RADIATED EMISSIONS MEASUREMENTS). All other measurements are made as detailed below but with the test equipment connected to a measurement antenna directed at the EUT.

OUTPUT POWER

Output power is measured using a power meter and an average sensor head, a spectrum analyzer or a power meter and peak power sensor head as required by the relevant rule part(s). Where necessary measurements are gated to ensure power is only measured over periods that the device is transmitting.

Power measurements made directly on the rf power port are, when appropriate, converted to an EIRP by adding the gain of the highest gain antenna that can be used with the device under test, as specified by the manufacturer.



BANDWIDTH MEASUREMENTS

The 6dB, 20dB and/or 26dB signal bandwidth is measured in using the bandwidths recommended by ANSI C63.4. When required, the 99% bandwidth is measured using the methods detailed in RSS-GEN. The measurement bandwidth is set to be at least 1% of the instrument's frequency span.

CONDUCTED SPURIOUS EMISSIONS

Initial scans are made using a peak detector (RBW=VBW) and using scan rates to ensure that the EUT transmits before the sweep moves out of each resolution bandwidth (for transmit mode measurements). Where the limits are expressed as an average power the spectrum analyzer is tunes to that frequency with a narrow span (wide enough to capture the emission and its sidebands) and the resolution and video bandwidths are adjusted as required by the reference measurement standards. For transmitter measurements the appropriate detector (average, peak, normal ,sample, quasi-peak) is used when making measurements for licensed devices. For receiver conducted spurious measurements the detector is set to peak.



TRANSMITTER MASK MEASUREMENTS

The transmitter mask measurements are made using resolution bandwidths as specified in the pertinent rule part(s). Where narrower bandwidths are used the measurement is corrected to account for the reduced bandwidth by either using the adjacent channel power function of the spectrum analyzer to sum the power across the required measurement bandwidth. The frequency span of the analyzer is set to ensure the fundamental signal and all significant sidebands are displayed.

The top of the mask may be set by the total output power of the signal, the power of the unmodulated signal or the peak value of the signal in the reference bandwidth being used for the mask measurement.

FREQUENCY STABILITY

The EUT is placed inside a temperature chamber with all support and test equipment located outside of the chamber. The temperature is varied across the specified frequency range in 10 degree increments with frequency measurements made at each temperature step. The EUT is allowed enough time to stabilize at each temperature variation.

The spectrum analyzer is configured to give a 5- or 6-digit display for the markerfrequency function. The spectrum analyzer's built-in frequency counter is used to measure the maximum deviation of the fundamental frequency at each temperature. Where possible the device is set to transmit an unmodulated signal. Where this is not possible the frequency drift is determined by finding a stable point on the signal (e.g. the null at the centre of an OFDM signal) or by calculating a centre frequency based on the upper and lower XdB points (where X is typically 6dB or 10dB) on the signal's skirts.

RADIATED EMISSIONS MEASUREMENTS

Receiver radiated spurious emissions measurements are made in accordance with ANSI ANSI C63.26:2015 by measuring the field strength of the emissions from the device at a specific test distance and comparing them to a field strength limit. Where the field strength limit is specified at a longer distance than the measurement distance the measurement is extrapolated to the limit distance.

Transmitter radiated spurious emissions are initially measured as a field strength. The eirp or erp limit as specified in the relevant rule part(s) is converted to a field strength at the test distance and the emissions from the EUT are then compared to that limit. Emissions within 20dB of this limit are the subjected to a substitution measurement.

All radiated emissions measurements are performed in two phases. A preliminary scan of emissions is conducted in either an anechoic chamber or on an OATS during which all significant EUT frequencies are identified with the system in a nominal configuration. At least two scans are performed across the complete frequency range of interest and at each operating frequency identified in the reference standard. One or more of these is with the antenna polarized vertically while the one or more of these is with the antenna polarized horizontally. Initial scans are made using a peak detector (RBW=VBW) and using scan rates to ensure that the EUT transmits before the sweep moves out of each resolution bandwidth (for transmit mode).

During the preliminary scans, the EUT is rotated through 360°, the antenna height is varied and cable positions are varied to determine the highest emission relative to the limit. For transmitter spurious emissions, where the limit is expressed as an effective radiated power, the eirp or erp is converted to a field strength limit.

Final measurements are made on an OATS or in a semi-anechoic chamber at the significant frequencies observed during the preliminary scan(s) using the same process of rotating the EUT and raising/lowering the measurement antenna to find the highest level of the emission. The field strength is recorded and, for receiver spurious emissions, compared to the field strength limit. For the final measurement the appropriate detectors (average, peak, normal, sample, quasi-peak) are used. For receiver measurements below 1GHz the detector is a Quasi-Peak detector, above 1GHz a peak detector is used and the peak value (RB=VB=1MHz) and average value (RB=1MHz, VB=10Hz) are recorded.

For transmitter spurious emissions, the radiated power of all emissions within 20dB of the calculated field strength limit are determined using a substitution measurement. The substitution measurement is made by replacing the EUT with an antenna of known gain (typically a dipole antenna or a double-ridged horn antenna), connected to a signal source. The output power of the signal generator is adjusted until the maximum field strength from the substitution antenna is similar to the field strength recorded from the EUT. The erp of the EUT is then calculated.



INSTRUMENTATION

An EMI receiver as specified in CISPR 16-1-1 is used for radiated emissions measurements. The receivers used can measure over the frequency range of 9 kHz up to 7000 MHz. These receivers allow both ease of measurement and high accuracy to be achieved. The receivers have Peak, Average, and CISPR (Quasi-peak) detectors built into their design so no external adapters are necessary.

For measurements above the frequency range of the receivers and for all conducted measurements a spectrum analyzer is utilized because it provides visibility of the entire spectrum along with the precision and versatility required to support engineering analysis.

Measurement bandwidths for the test instruments are set in accordance with the requirements of the standards referenced in this document.

Software control is used to correct the measurements for transducer factors (e.g. antenna) and the insertion loss of cables, attenuators and other series elements to obtain the final measurement value. This provides faster, more accurate readings by performing the conversions described under Sample Calculations within the Test Procedures section of this report. Results are exported in a graphic and/or tabular format, as appropriate.

FILTERS/ATTENUATORS

External filters and precision attenuators are often connected between the EUT antenna port or receiving antenna and the test receiver. This eliminates saturation effects and non-linear operation due to high amplitude transient events.

ANTENNAS

A combination of biconical, log periodic or bi-log antennas are used to cover the range from 30 MHz to 1000 MHz. Broadband antennas or tuned dipole antennas are used over the entire 25 to 1000 MHz frequency range as the reference antenna for substitution measurements.

Above 1000 MHz, a dual-ridge guide horn antenna or octave horn antenna are used as reference and measurement antennas.

The antenna calibration factors are included in site factors that are programmed into the test receivers and instrument control software when measuring the radiated field strength.

ANTENNA MAST AND EQUIPMENT TURNTABLE

The antennas used to measure the radiated electric field strength are mounted on a nonconductive antenna mast equipped with a motor-drive to vary the antenna height.

Table mounted devices are placed on a non-conductive table at a height of 80 or 150 centimeters above the floor depending on frequency. The EUT is positioned on a motorized turntable to allow it to be rotated during testing to determine the angel with the highest level of emissions.



SAMPLE CALCULATIONS

SAMPLE CALCULATIONS - CONDUCTED SPURIOUS EMISSIONS

Measurements are compared directly to the conducted emissions specification limit (decibel form). The calculation is as follows:

$$R_r - S = M$$

where:

 R_r = Measured value in dBm

S = Specification Limit in dBm

M = Margin to Specification in +/- dB

SAMPLE CALCULATIONS -RADIATED POWER

The erp/eirp limits for transmitter spurious measurements are converted to a field strength in free space using the following formula:

$$E = \frac{\sqrt{30 P G}}{d}$$

where:

E = Field Strength in V/m

P = Power in Watts

G = Gain of isotropic antenna (numeric gain) = 1

D = measurement distance in meters

The field strength limit is then converted to decibel form (dBuV/m) and the margin of a given emission peak relative to the limit is calculated (refer to *Error! Not a valid bookmark self-reference.*).

When substitution measurements are required (all signals with less than 20dB of margin relative to the calculated field strength limit) the eirp of the spurious emission is calculated using:

 $P_{EUT} = P_{S-}(E_{S-}E_{EUT})$

and

$$P_s = G + P_{in}$$

where:

 P_{s} = effective isotropic radiated power of the substitution antenna (dBm)

 P_{in} = power input to the substitution antenna (dBm)

G = gain of the substitution antenna (dBi)

 E_S = field strength the substitution antenna (dBm) at eirp P_S

 E_{EUT} = field strength measured from the EUT

Where necessary the effective isotropic radiated power is converted to effective radiated power by subtracting the gain of a dipole (2.2dBi) from the eirp value.



SAMPLE CALCULATIONS -RADIATED FIELD STRENGTH

Measurements of radiated field strength are compared directly to the specification limit (decibel form). The receiver and/or control software corrects for cable loss, preamplifier gain, and antenna factor. The calculations are in the reverse direction of the actual signal flow, thus cable loss is added and the amplifier gain is subtracted. The Antenna Factor converts the voltage at the antenna coaxial connector to the field strength at the antenna elements.

A distance factor is sued when measurements are made at a test distance that is different to the specified limit distance by using the following formula:

$$F_d = 20*LOG_{10} (D_m/D_s)$$

where:

 F_d = Distance Factor in dB D_m = Measurement Distance in meters D_s = Specification Distance in meters

For electric field measurements below 30MHz the extrapolation factor is either determined by making measurements at multiple distances or a theoretical value is calculated using the formula:

$$F_d = 40*LOG_{10} (D_m/D_s)$$

The margin of a given emission peak relative to the limit is calculated as follows:

$$R_c = R_r + F_d$$

and

 $M = R_c - L_s$

where:

 R_r = Receiver Reading in dBuV/m

 F_d = Distance Factor in dB

 R_c = Corrected Reading in dBuV/m

 L_S = Specification Limit in dBuV/m

M = Margin in dB Relative to Spec

Appendix A Test Equipment Calibration Data

<u>Manufacturer</u> Antenna port measu	Description	Model	<u>Asset #</u>	Calibrated	Cal Due
NTS NTS	NTS Mask Software (rev 3.8) NTS Capture Analyzer Software (rev 3.8)	N/A N/A	0 0		N/A N/A
Fluke Rohde & Schwarz	Fluke Mulitmeter, True RMS Power Meter, Single Channel, +1795+1796	175 NRVS	1447 1534	7/23/2015 7/20/2015	7/23/2016 7/20/2016
Rohde & Schwarz	Peak Power Sensor 100 uW - 2 Watts (w/ 20 dB pad, SN BJ5155)	NRV-Z32	1536	1/15/2015	1/15/2016
Watlow	Temp Chamber (w/ F4 watlow Controller)	96A0	2171	7/14/2015	7/14/2016
Agilent Technologies	3Hz -44GHz PSA Spectrum Analyzer	E4446A	2796	3/31/2015	3/31/2016
Radio Antenna Port, Agilent Technologies	11-Dec-15 3Hz -44GHz PSA Spectrum Analyzer	E4446A	2796	3/31/2015	3/31/2016
Radiated Emissions NTS Hewlett Packard	, 30 - 10,000 MHz, 14-Dec-15 NTS EMI Software (rev 2.10) Microwave Preamplifier, 1- 26.5GHz	N/A 8449B	0 263	3/26/2015	N/A 3/26/2016
Hewlett Packard	Spectrum Analyzer (Spare SA26) 9 KHz-26.5 GHz, Non- Program	8563E	284	3/14/2015	3/14/2016
EMCO Hewlett Packard	Antenna, Horn, 1-18 GHz High Pass filter, 3.5 GHz	3115 P/N 84300- 80038	487 1157	7/29/2014 7/10/2015	7/29/2016 7/10/2016
Sunol Sciences Rohde & Schwarz	Biconilog, 30-3000 MHz EMI Test Receiver, 20 Hz-7 GHz	JB3 ESIB7	1657 1756	6/25/2014 6/20/2015	6/25/2016 6/20/2016
Substitution Measur	ements, 15-Dec-15				
EMCO Hewlett Packard	Antenna, Horn, 1-18 GHz Microwave Preamplifier, 1- 26.5GHz	3115 8449B	487 870	7/29/2014 2/20/2015	7/29/2016 2/20/2016
Hewlett Packard Hewlett Packard	SA40 Head (Red) High Pass filter, 3.5 GHz	Miteq P/N 84300- 80038	1145 1157	7/17/2015 7/10/2015	7/17/2016 7/10/2016
EMCO Rohde & Schwarz	Antenna, Horn, 1-18 GHz Power Sensor, 1 nW-20 mW, 10 MHz-18 GHz, 50ohms	3115 NRV-Z1	1242 2114	3/24/2015 10/26/2015	3/24/2017 10/26/2016
Agilent Technologies	PSG, Vector Signal Generator, (250kHz - 20MHz)	E8267D	3011	1/8/2015	1/8/2016
Rohde & Schwarz	Power Meter, Dual Channel	NRVD	1071	3/26/2015	3/26/2016
Antenna port measu Rohde & Schwarz	rements, 23-May-16 Power Meter, Single Channel	NRVS	1290	12/17/2015	12/17/2016



Project number PR085381 Reissue Date: October 9, 2018

		September 13, 2018		ssue Date: Octol	
Manufacturer Rohde & Schwarz	<u>Description</u> Peak Power Sensor 100 uW - 2 Watts (w/ 20 dB pad, SN BJ5155)	<u>Model</u> NRV-Z32	<u>Asset #</u> 1536	<u>Calibrated</u> 3/10/2016	<u>Cal Due</u> 3/10/2017
Agilent Technologies	3Hz -44GHz PSA Spectrum Analyzer	E4446A	2796	5/6/2016	5/6/2017
Antenna port measu Agilent Technologies	irements, 24, 26-May-16 3Hz -44GHz PSA Spectrum Analyzer	E4446A	2796	5/6/2016	5/6/2017
Radio Antenna Port National Technical Systems	(Power and Spurious Emissio NTS EMI Software (rev 2.10)	ns), 29, 30 -Aug-18 N/A	3 0		N/A
National Technical	NTS Mask Software (rev 3.8)	N/A	0		N/A
Systems National Technical Systems	NTS Capture Analyzer Software (rev 3.8)	N/A	0		N/A
Rohde & Schwarz Rohde & Schwarz	Power Meter, Dual Channel Peak Power Sensor 100 uW - 2 Watts (w/ 20 dB pad, SN BJ5155)	NRVD NRV-Z32	1071 1536	4/4/2018 6/21/2018	4/4/2019 6/21/2019
Agilent Technologies	PSA, Spectrum Analyzer, (installed options, 111, 115, 123, 1DS, B7J, HYX,	E4446A	2139	7/27/2018	7/27/2019
Conducted Emission National Technical Systems	ns - RF Port, 04-Sep-18 NTS EMI Software (rev 2.10)	N/A	0		N/A
Agilent Technologies	PSA, Spectrum Analyzer, (installed options, 111, 115, 123, 1DS, B7J, HYX,	E4446A	2139	7/27/2018	7/27/2019
National Technical	, Below 30 MHz, 04-Sep-18 NTS EMI Software (rev 2.10)	N/A	0		N/A
Systems Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB 7	1756	7/7/2018	7/7/2019
Rhode & Schwarz	Magnetic Loop Antenna, 9 kHz-30 MHz	HFH2-Z2	WC062 457	1/5/2018	1/5/2020



Appendix B Test Data

TL085381-RA Pages 23 – 51 T99783 Pages 52 – 145 T101706 Pages 146 – 164



EMC Test Data

Client:	GE MDS LLC	PR Number:	PR085381
Product	LN900	T-Log Number:	TL085381-RA
System Configuration:	Module on test PCB	Project Manager:	Christine Krebill
Contact:	Jack Priebe	Project Engineer:	David Bare
Emissions Standard(s):	FCC parts 24, 90 and 101	Class:	-
Immunity Standard(s):	-	Environment:	Radio

EMC Test Data

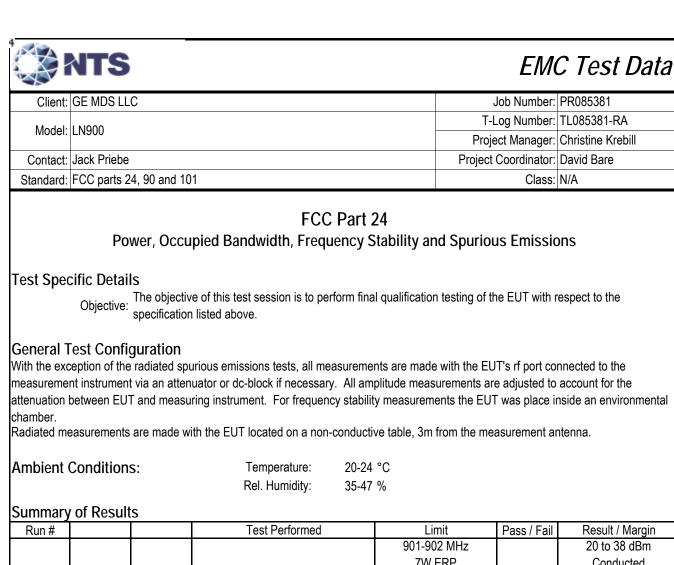
For The

GE MDS LLC

Product

LN900

Date of Last Test: 9/4/2018



	restrictionned	Linin	1 433 / 1 41	rtosuit / Murgin
		901-902 MHz		20 to 38 dBm
		7W ERP		Conducted
1	Output Power	931-941 MHz	Pass	20 to 40.7 dBm
		7W ERP mobile,		Conducted
		3500W ERP fixed		Conducted
2	Spectral Mask	Within Mask	Pass	Within Masks
				10.3 kHz
		20 or 45 kHz based on		10.8 kHz
3	99% or Occupied Bandwidth	25 and 50 KHz	-	17.2 kHz
		channels		21.5 kHz
				43.2 kHz
4	Spurious Emissions (conducted)	-13 dBm	Pass	
5	Spurious emissions (radiated)	-13 dBm	Pass	

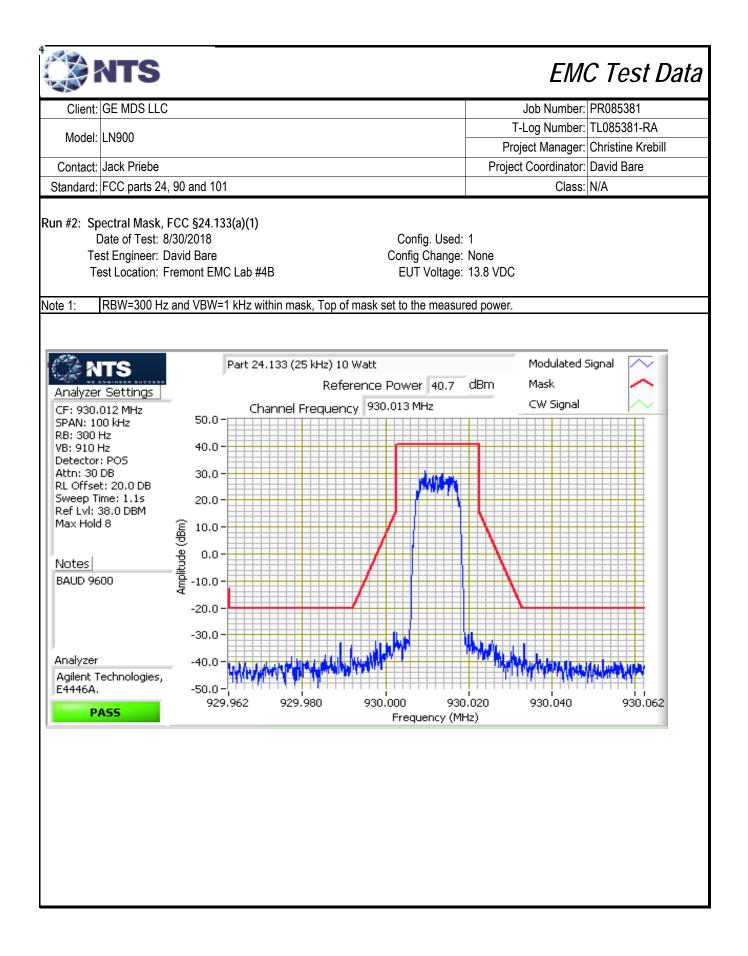
Modifications Made During Testing

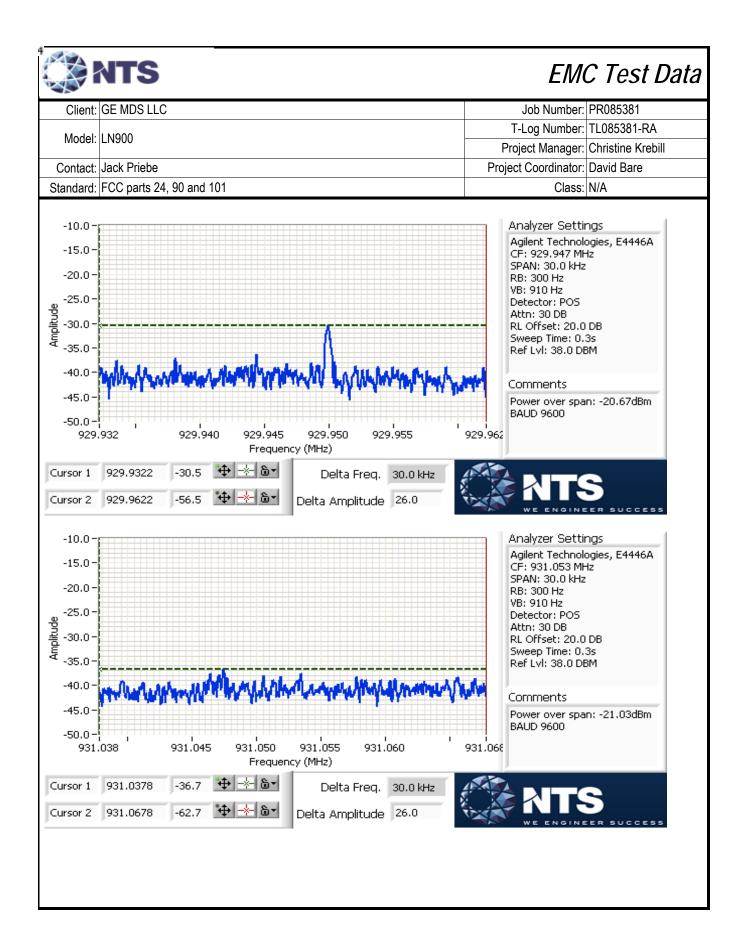
No modifications were made to the EUT during testing

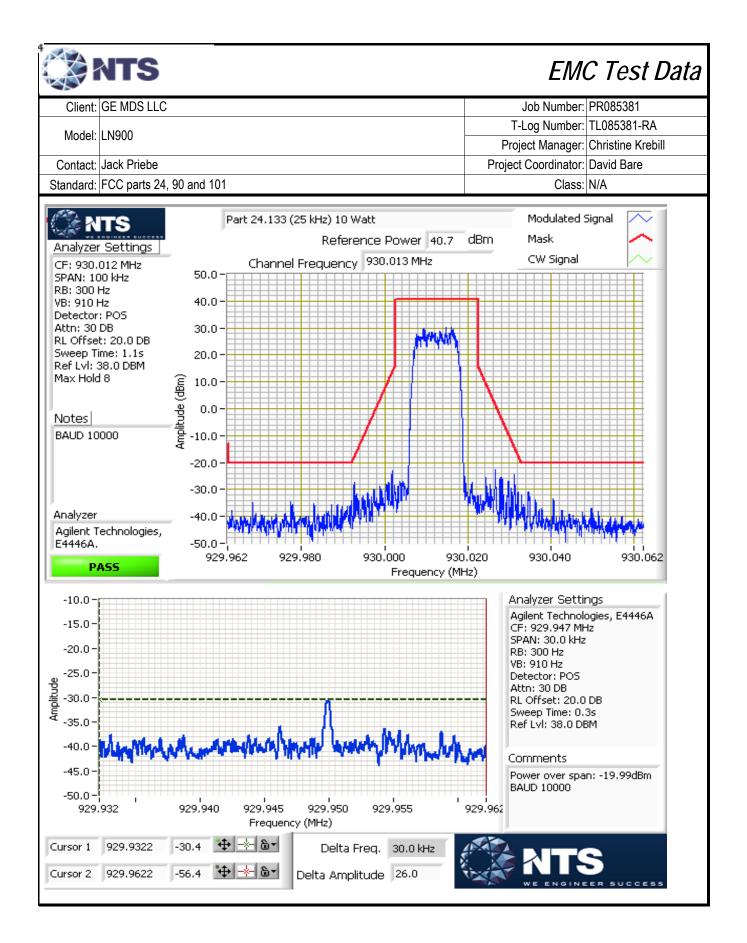
Deviations From The Standard

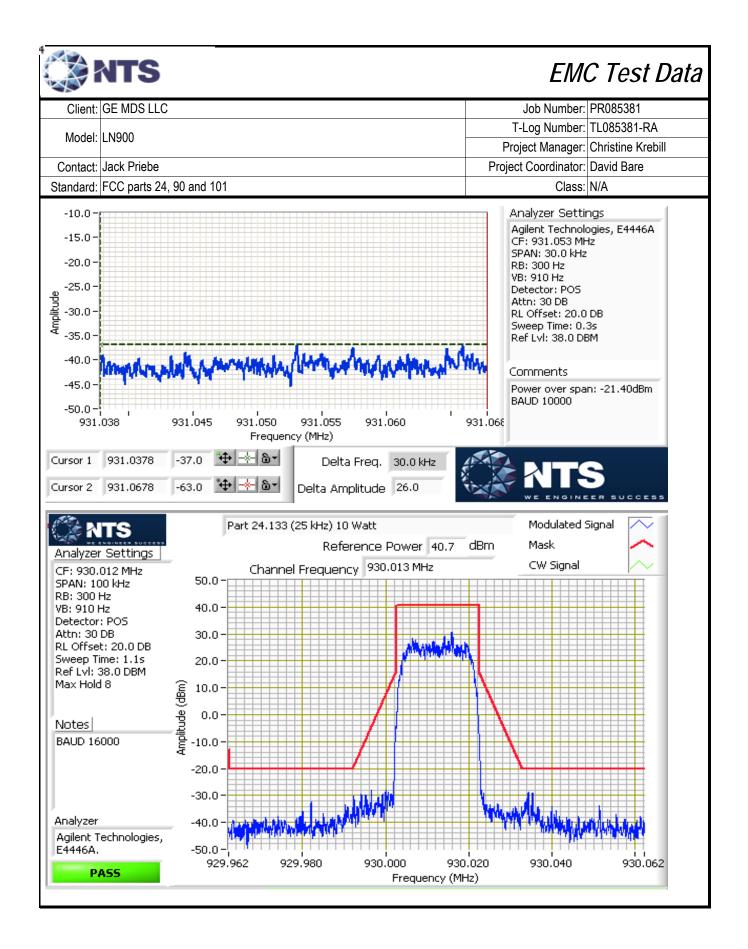
No deviations were made from the requirements of the standard.

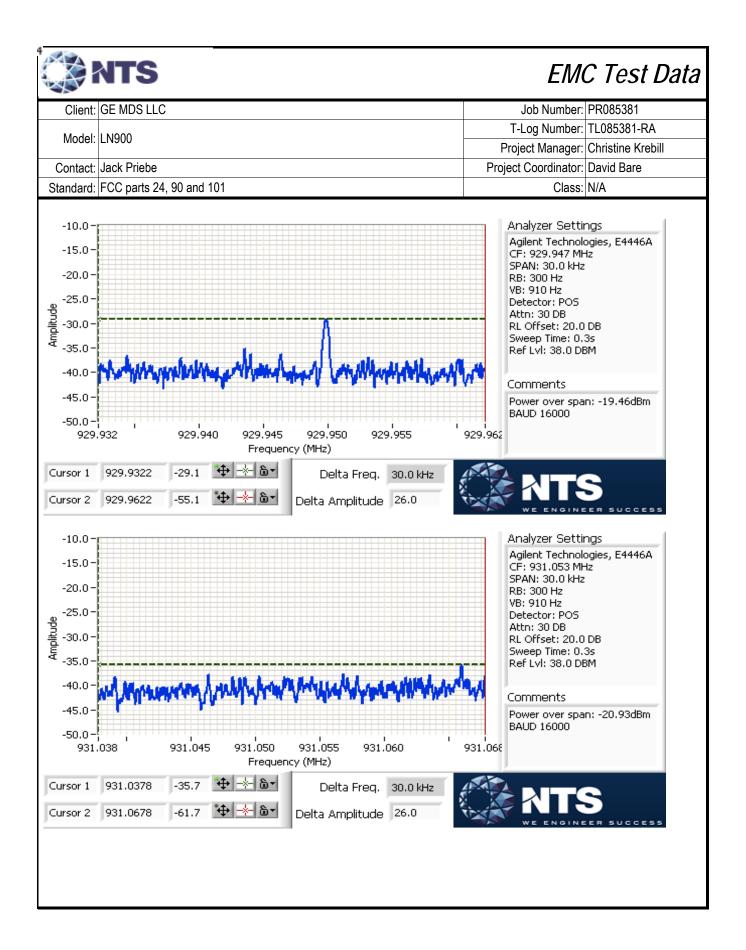
Based on the previous testing of this product, QAM4, QAM16 and QAM64 all produce the same results. Therefore testing for part 2 mited to QAM4 modulation. Run #1: Output Power FCC §24.132 Date of Test: 8/29/2018 Config. Used: 1 Test Engineer: David Bare Config Change: None Test Location: Fremont EMC Lab #4B EUT Voltage: 13.8 VDC Cable Loss: Attenuator: 20.0 dB Total Loss: 20.0 dB Cable ID(s): - Attenuator IDs: WC068107 Power Frequency (MHz) Output Power Antenna Result dBm W 26 901 24.1 257.0 16.5 Pass 38.4 6.918 39 901 38.0 6309.6 2.2 Pass 38.0 6.310 FB 20 40 930 40.7 11749.0 16.5 Pass 55.0 316.228 FB 23 40 941 40.5 11220.2 16.5 Pass 54.8 301.995 FB 22	Model: L	GE MDS LLC						Job Number:	PR085381
Contact: Jack Priebe Project Manager: Christine Krebill Standard: FCC parts 24, 90 and 101 David Bare Standard: FCC parts 24, 90 and 101 Class: N/A Fest Notes Based on the previous testing of this product, QAM4, QAM16 and QAM64 all produce the same results. Therefore testing for part 2 imited to QAM4 modulation. Config. Used: 1 Test Signed: 1 Test Engineer: David Bare Config. Config. Used: 1 Test Engineer: David Bare Test Location: Fremont EMC Lab #4B EUT Voltage: 13.8 VDC VDC Cable Loss: Attenuator: 20.0 dB Total Loss: 20.0 dB Cable Loss: Attenuator: 20.0 dB Total Loss: 20.0 dB Power Attenuator: 20.0 dB Total Loss: 20.0 dB Cable Loss: Attenuator: 20.0 dB Total Loss: 20.0 dB Power Frequency (MHz) Output Power Antenna Result dBm W 26 901 24.1 257.0 16.5 Pass 38.4 6.918 FB 7 39 901 38.0	Nodel: L	N000					T-	Log Number:	TL085381-RA
Class: N/A Standard: FCC parts 24, 90 and 101 Class: N/A Test Notes Based on the previous testing of this product, QAM4, QAM16 and QAM64 all produce the same results. Therefore testing for part 2 imited to QAM4 modulation. Run #1: Output Power FCC §24.132 Date of Test: 8/29/2018 Config. Used: 1 Test Engineer: David Bare Config Change: None Test Location: Fremont EMC Lab #4B EUT Voltage: 13.8 VDC Cable Loss: Output Power Attenuator: 20.0 dB Total Loss: 20.0 dB Output Power (MHZ) Output Power Attenuator: 20.0 dB Total Loss: 20.0 dB Cable Loss: Output Power (dBm) 1 MW Gain (dBi) Frequency (MHz) Output Power Antenna Gain (dBi) Result ERP Setting ² Frequency (MHz) Output Power (dBm) 1 mW Gain (dBi) Result BR 7 So 38.0 </td <td></td> <td>N900</td> <td></td> <td></td> <td></td> <td></td> <td>Proj</td> <td>ect Manager:</td> <td>Christine Krebill</td>		N900					Proj	ect Manager:	Christine Krebill
Test Notes Based on the previous testing of this product, QAM4, QAM16 and QAM64 all produce the same results. Therefore testing for part 2 inited to QAM4 modulation. Run #1: Output Power FCC §24.132 Date of Test: 8/29/2018 Config. Used: 1 Test Engineer: David Bare Config Change: None Test Location: Fremont EMC Lab #4B EUT Voltage: 13.8 VDC Cable Loss: Cable Loss: Cable Loss: Config. Used: 1 Test Location: Fremont EMC Lab #4B EUT Voltage: 13.8 VDC Cable Loss: Cable Loss: Cable ID(s): - Attenuator: VO008 Total Loss: Q0.0 dB Vote: Cable ID(s): - Attenuator: Vote: Cable ID(s): - Attenuator IDs: WC068107 Fe quency (MHz) Q	Contact: Ja	ack Priebe					Project	Coordinator:	David Bare
Based on the previous testing of this product, QAM4, QAM16 and QAM64 all produce the same results. Therefore testing for part 2 imited to QAM4 modulation. Run #1: Output Power FCC §24.132 Date of Test: 8/29/2018 Config. Used: 1 Test Engineer: David Bare Config Change: None Test Location: Fremont EMC Lab #4B EUT Voltage: 13.8 VDC Cable Loss: Attenuator: 20.0 dB Total Loss: 20.0 dB Cable ID(s): - Attenuator IDs: WC068107 Power Frequency (MHz) Output Power Antenna Gain (dBi) Result dBm W 26 901 24.1 257.0 16.5 Pass 38.4 6.918 FB 7 FB 7 39 901 38.0 6309.6 2.2 Pass 38.0 6.310 FB 20 FB 20 40 930 40.7 11749.0 16.5 Pass 55.0 316.228 FB 23 FB 23 FB 24	Standard: F	CC parts 24, 90 and 10	1					Class:	N/A
Test Location: Fremont EMC Lab #4B EUT Voltage: 13.8 VDC Cable Loss: Attenuator: 20.0 dB Total Loss: 20.0 dB Cable ID(s): - Attenuator IDs: WC068107 Total Loss: 20.0 dB Power Frequency (MHz) Output Power Antenna Result ERP Setting ² Frequency (MHz) Output 24.1 257.0 16.5 Pass 38.4 6.918 FB 7 39 901 38.0 6309.6 2.2 Pass 38.0 6.310 FB 20 40 930 40.7 11749.0 16.5 Pass 55.0 316.228 FB 23 40 941 40.5 11220.2 16.5 Pass 54.8 301.995 FB 22	ased on the mited to QAM	previous testing of this //4 modulation. put Power FCC §24.13.		//4, QAM16 a				ults. Therefor	e testing for part 24 is
Cable Loss: Attenuator: 20.0 dB Total Loss: 20.0 dB Cable ID(s): - Attenuator IDs: WC068107 Total Loss: 20.0 dB Power Setting ² Frequency (MHz) Output Power (dBm) ¹ Antenna mW Result ERP dBm W 26 901 24.1 257.0 16.5 Pass 38.4 6.918 FB 7 39 901 38.0 6309.6 2.2 Pass 38.0 6.310 FB 20 40 930 40.7 11749.0 16.5 Pass 55.0 316.228 FB 23 40 941 40.5 11220.2 16.5 Pass 54.8 301.995 FB 22	Test	t Engineer: David Bare							
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Test	t Location: Fremont EM	C Lab #4B		E	UT Voltage:	13.8 VDC		
Setting ² Frequency (MHz) (dBm) ¹ mW Gain (dBi) Result dBm W 26 901 24.1 257.0 16.5 Pass 38.4 6.918 FB 7 39 901 38.0 6309.6 2.2 Pass 38.0 6.310 FB 20 40 930 40.7 11749.0 16.5 Pass 55.0 316.228 FB 23 40 941 40.5 11220.2 16.5 Pass 54.8 301.995 FB 22				Att			68107	Total Loss:	20.0 dB
26 901 24.1 257.0 16.5 Pass 38.4 6.918 FB 7 39 901 38.0 6309.6 2.2 Pass 38.0 6.310 FB 20 40 930 40.7 11749.0 16.5 Pass 55.0 316.228 FB 23 40 941 40.5 11220.2 16.5 Pass 54.8 301.995 FB 22		Frequency (MHz)		1		Result		1	
40 930 40.7 11749.0 16.5 Pass 55.0 316.228 FB 23 40 941 40.5 11220.2 16.5 Pass 54.8 301.995 FB 22	~	901	· /	257.0	. ,	Pass	38.4	6.918	FB 7
40 941 40.5 11220.2 16.5 Pass 54.8 301.995 FB 22						Pass			
	40	941	40.5	11220.2	16.5	Pass	54.8	301.995	FB 22
Note 1: Output power measured using a peak power meter Note 2: Power setting - the software power setting used during testing, included for reference only. Note 3: Antenna Gain of 2.2 dBi = 0 dBd	Note 2: P	Power setting - the softw	are power se			included for	reference o	nly.	

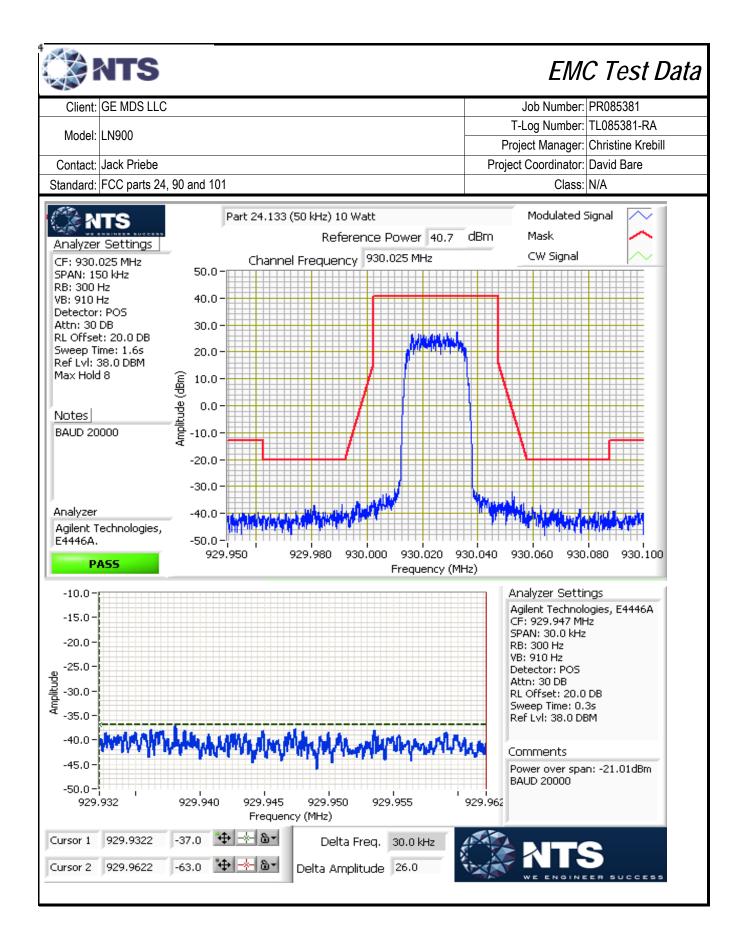


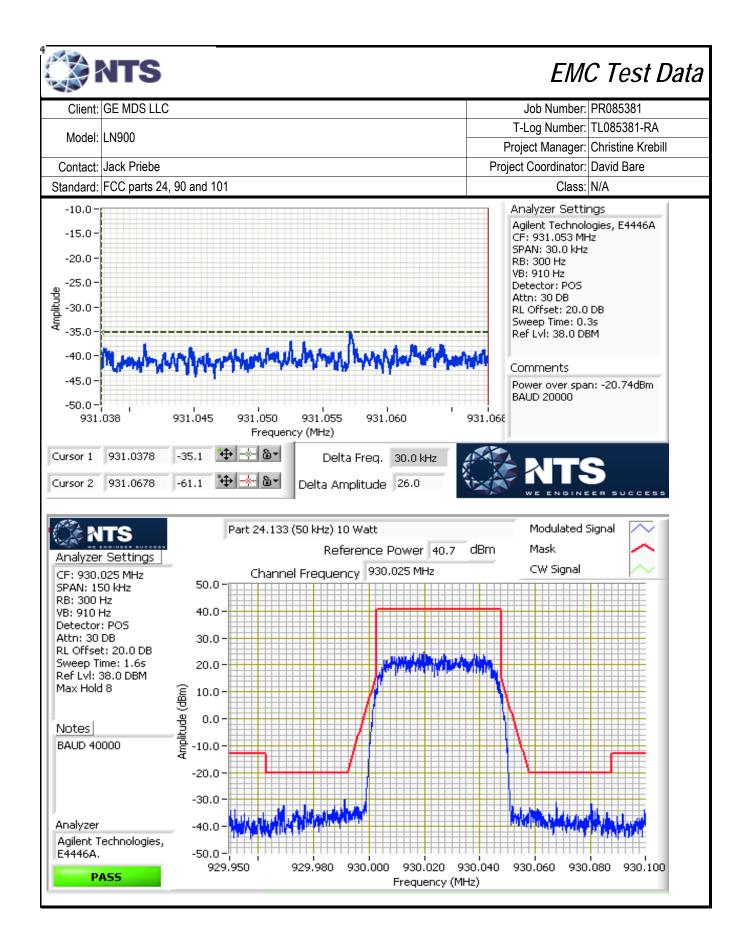


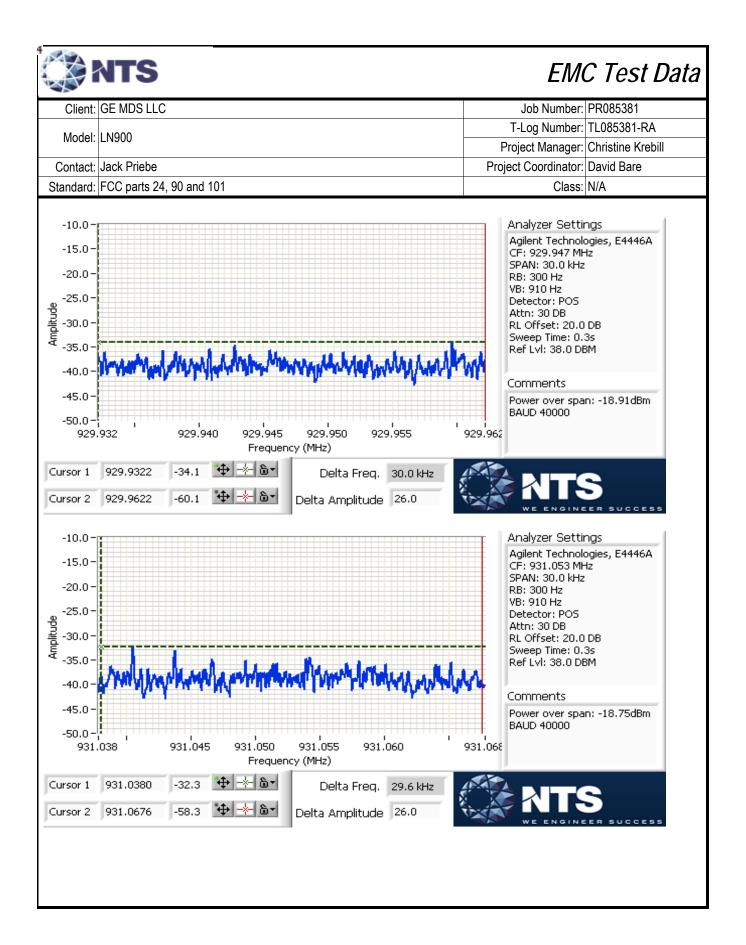




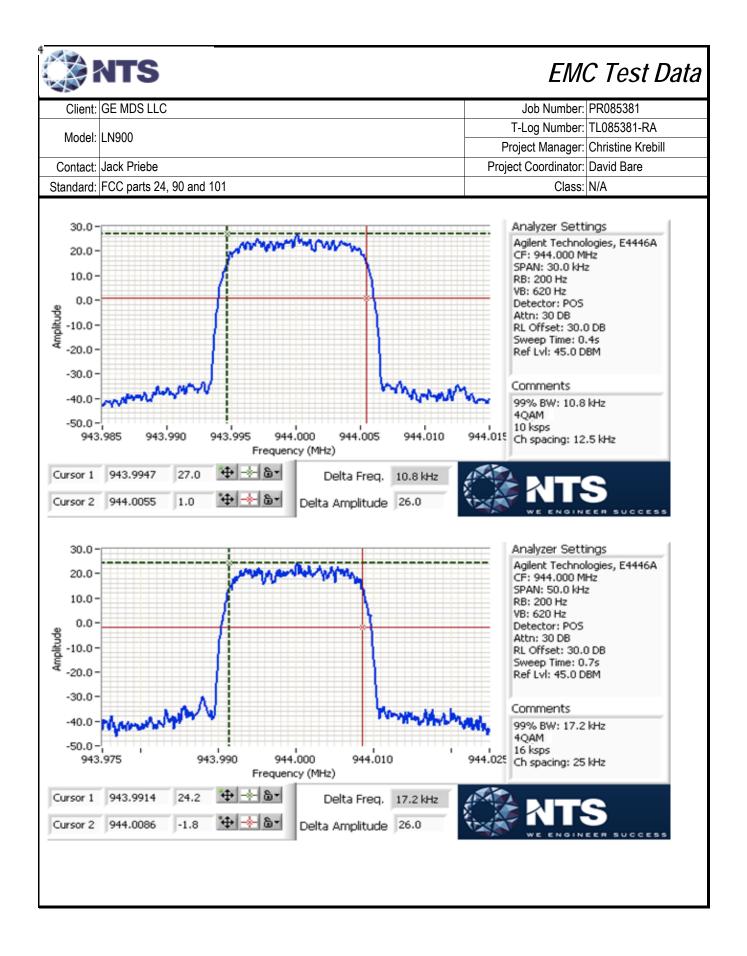


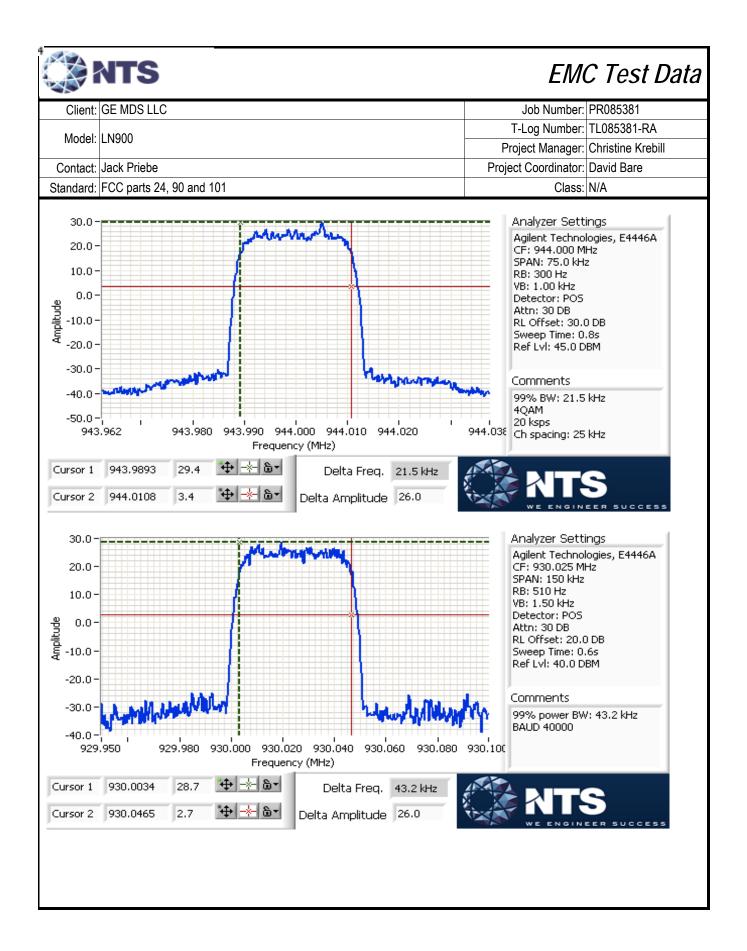




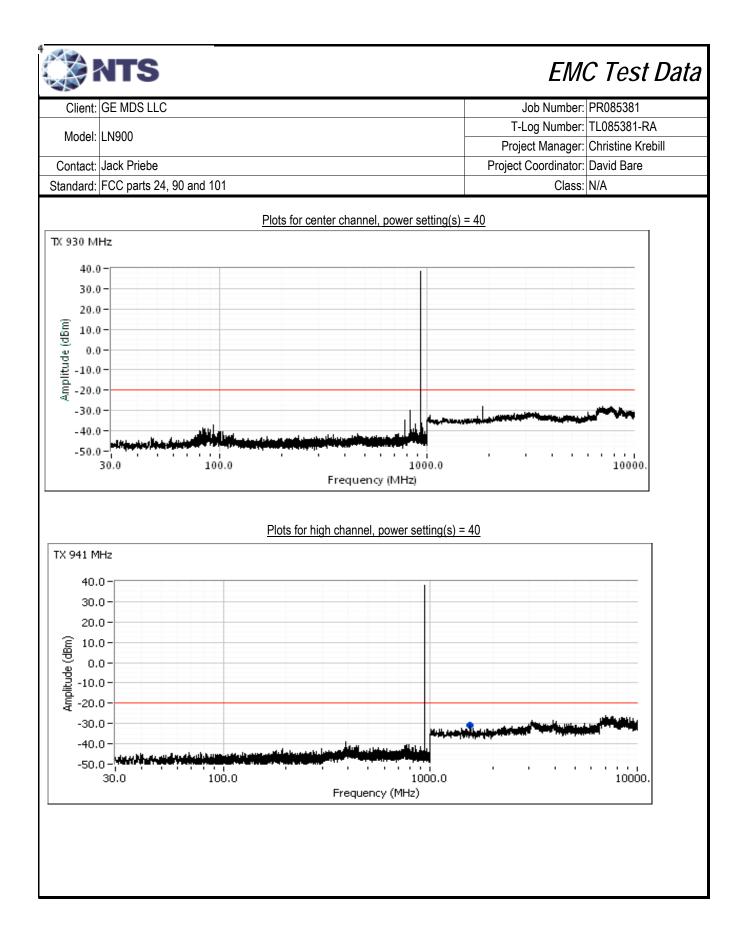


Client [.]	GE MDS LLC					Job Num	ber: PR085381
		, 					ber: TL085381-RA
Model:	LN900					•	ager: Christine Krebill
Contact:	Jack Priebe						ator: David Bare
	FCC parts 24	. 90 and 101				-	ass: N/A
l Te	Date of Test: est Engineer: I est Location: I Power Setting 40 40 40 40 40 40	dth FCC §24.131 10/28/2015 & 8/29/2018 Deniz Demirci & David B Fremont EMC Lab #4B Frequency (MHz) 944 944 944 944 944 944 944 944 944 944 944 944 944 944 944 944 944 940 dth measured in accorda	Resolution Bandwidth 200 Hz 200 Hz 200 Hz 300 Hz 510 Hz	Config EU Bandwidth	(kHz) 99% 10.3 10.8 17.2 21.5 43.2	 None 13.8 VDC Setting BAUD 9600 BAUD 10000 BAUD 16000 BAUD 20000 BAUD 40000 	9.6 kbps 10 kbps 16 kbps 20 kbps 40 kbps 40 kbps
ote 2:	Limit is 10 kH	Iz for 12.5 kHz channels	and 5 kHz less	s than the ag	gregrated	I channel width for ago	pregrated channels

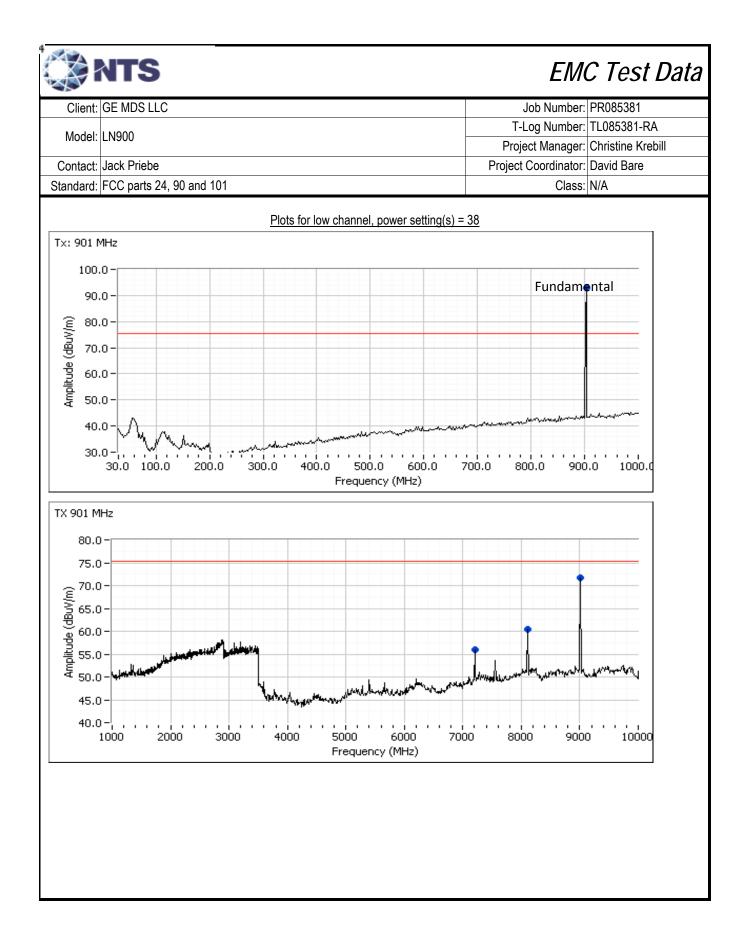


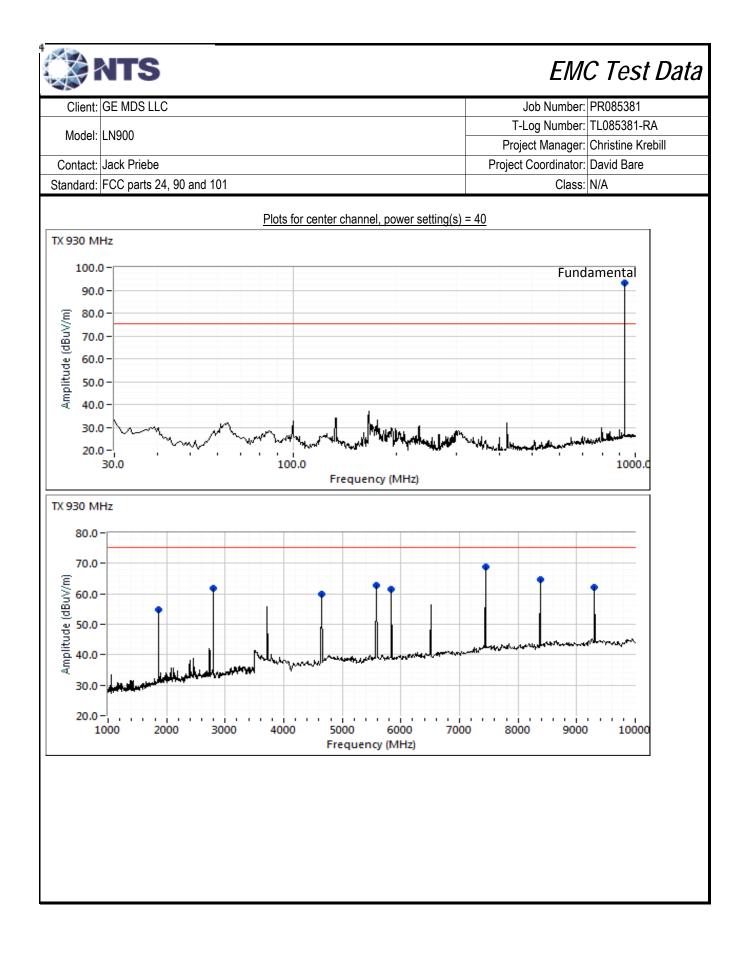


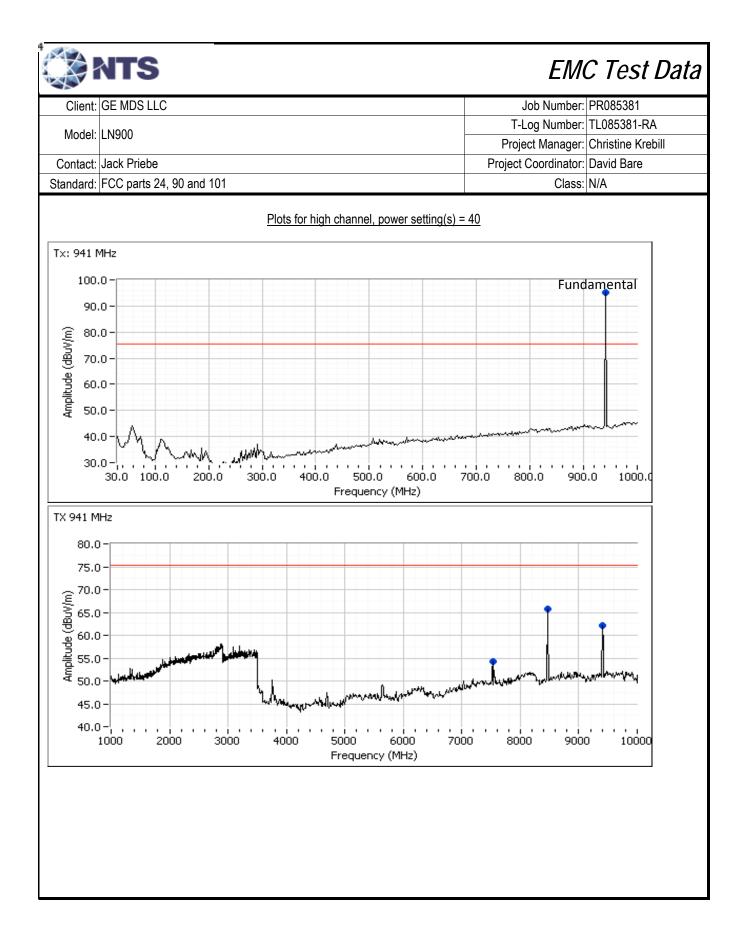
0	GE MDS LLC			Job Number:	PR085381
				T-Log Number:	
Model: L	_N900			Project Manager:	
ontact: J	lack Priebe			Project Coordinator:	
ndard: F	CC parts 24, 90 ar	nd 101		Class:	
Da Tes	ate of Test: 12/11/2	Bare & Jude Semana	Config. Use Config Change EUT Voltage		
		Frequency (MHz)	Limit	Result	
		901	-13	Pass	
		930	-13	Pass	
		941	-13	Pass	
40.0 30.0					
40.0					
30.0					
	_				
20.0					
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20.0 (mg) 10.0 0.0 -10.0 -20.0 -30.0 -40.0 -50.0	- - - -	Uter and the second sec	Читот ч. Миліка 1000.0 uency (MHz)		



Client:	GE MDS LLO	С						Job Number:	PR085381	
							T-Log Number: TL085381-RA			
Model:	LN900						Proj	ect Manager:	Christine K	rebill
Contact:	Jack Priebe						-	Coordinator:		
	FCC parts 24	4. 90 and 10)1				,	Class:		
	it of Band S			diated						
		Conducted	d limit (dBm):	-13						
A	Approximate 1		. ,							
he limit is t	aken from FC	CC Part 24 N	/lask 24.133	(-13 dBm). D	ata in some p	lots is comp	ared to a lin	nit of -20 dBm		
	reliminary n			er scans	0	. C. 11. 1	4			
	Date of Test: st Engineer:					onfig. Used: fig Change:				
	est Location:					UT Voltage:		VDC		
requency	Level	Pol	FCC F	Part 24	Detector	Azimuth	Height	Comments		Chann
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	Commente		Onanna
901.006	93.1	H	-	-	PK	240	1.0	Carrier frequ	lency	901.0
208.000	55.9	V	82.3	-26.4	Peak	360	2.5		/	901.0
109.000	60.4	V	82.3	-21.9	Peak	180	2.0			901.0
9010.000	71.8	V	82.3	-10.5	Peak	42	2.0			901.0
929.860	93.3	Н	-	_	Peak	280	4.0	Carrier frequ	IANCV	930.0
1862.500	54.9	V	82.3	-27.4	Peak	81	2.2		icity	000.0
2791.670	61.8	V	82.3	-20.5	Peak	116	2.5			
648.330	59.9	V	82.3	-22.4	Peak	229	1.6			
5580.000	62.8	V	82.3	-19.5	Peak	10	2.2			
5840.000	61.6	V	82.3	-20.7	Peak	91	2.5			
7443.330	68.9	V	82.3	-13.4	Peak	182	2.5			
3375.000	64.8	V	82.3	-17.5	Peak	45	2.2			
9306.670	62.1	V	82.3	-20.2	Peak	308	1.0			
941.003	95.0	V			PK	208	1.5	Carrier frequ	IENCV	941.0
3469.000	65.8	V	82.3	-16.5	Peak	201	2.0		, only	941.0
9410.000	62.2	V	82.3	-20.1	Peak	352	1.5			941.0
ote 1:	propagation for erp limits	equation: E	=√(30PG)/d. gain (2.2dBi)	This limit is has not bee	lculated from conservative - n included. T ing substitutio	it does not o he erp or eir	consider the p for all sign	presence of	the ground	plane and,
			e with the and			in medsurell	101113.			





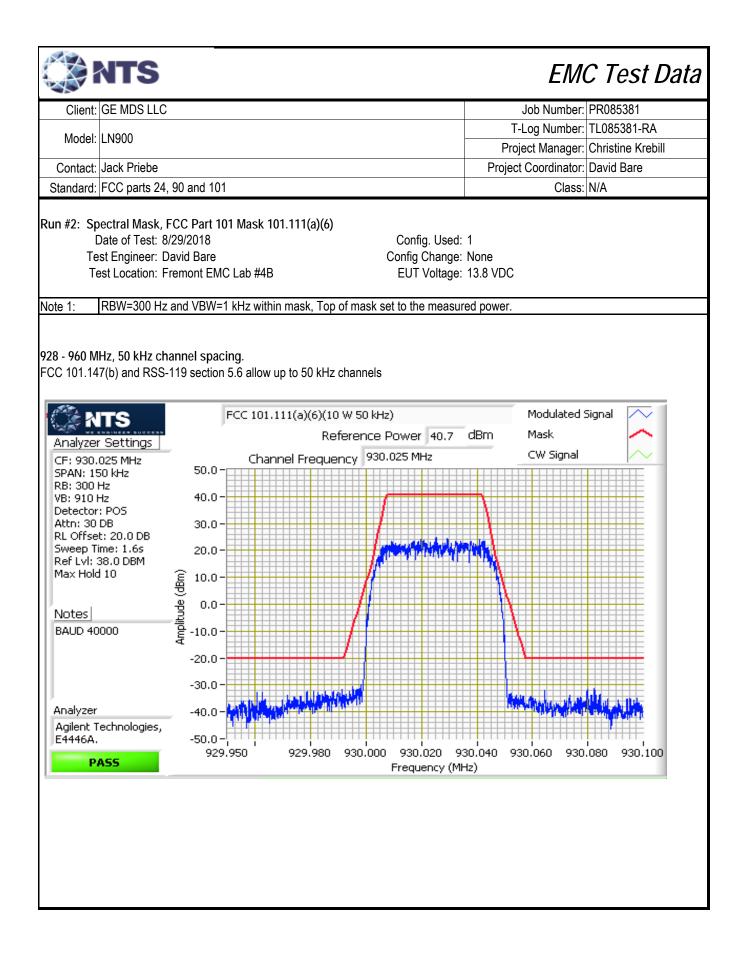


Client: GE MDS LLC Model: LN900 Contact: Jack Priebe Standard: FCC parts 24, Run #5b: - Final Field Strept of Test: 12 Test Engineer: De EUT Field Strength Frequency Frequency Level MHz dBµV/m 7207.870 58.4 8109.330 65.0 9009.030 73.8 1862.500 55.1 2791.670 61.9 4648.330 61.0 5580.000 63.1 5840.000 61.7 7443.330 68.9 8375.000 65.0 9306.670 62.1 8469.720 66.8	ength Me 2/14/2015 Deniz Demi	asurements & 8/30/2018 rci & Jude Se amber #4	emana 24.133	C Cor	onfig. Used:	T- Proj Project 1 Additional F	Job Number: Log Number: ect Manager: Coordinator: Class: PS used for 5.	TL085381-R Christine Kre David Bare N/A	
Contact: Jack Priebe Standard: FCC parts 24, Run #5b: - Final Field Strept Date of Test: 12 Test Engineer: Dete of Test: 12 Test Engineer: Dete of Test: 12 Test Location: Fr EUT Field Strength Frequency MHz dBμV/m 7207.870 58.4 8109.330 65.0 9009.030 73.8 1862.500 55.1 2791.670 61.9 4648.330 61.0 5580.000 63.1 5840.000 61.7 7443.330 68.9 8375.000 65.0 9306.670 62.1 8469.720 66.8	rength Me 2/14/2015 Deniz Demi remont Ch Pol V/h H V	asurements & 8/30/2018 rci & Jude Se amber #4 FCC 2 Limit	emana 24.133	C Cor	onfig. Used: ifig Change:	Proj Project 1 Additional F	ect Manager: Coordinator: Class: PS used for 5.	Christine Kre David Bare N/A	
Standard: FCC parts 24, Run #5b: - Final Field Strepate of Test: 12 Test Engineer: Dete Test Location: Fr EUT Field Strength Frequency Frequency Level MHz dBµV/m 7207.870 58.4 8109.330 65.0 9009.030 73.8 1862.500 55.1 2791.670 61.9 4648.330 61.0 5580.000 63.1 5840.000 61.7 7443.330 68.9 8375.000 65.0 9306.670 62.1 8469.720 66.8	rength Me 2/14/2015 Deniz Demi remont Ch Pol V/h H V	asurements & 8/30/2018 rci & Jude Se amber #4 FCC 2 Limit	emana 24.133	C Cor	onfig. Used: ifig Change:	Project 1 Additional F	Coordinator: Class: PS used for 5.	David Bare N/A	
Standard: FCC parts 24, Run #5b: - Final Field Strepate of Test: 12 Test Engineer: De Test Location: Fr EUT Field Strength Frequency Level MHz dBμV/m 7207.870 58.4 8109.330 65.0 9009.030 73.8 1862.500 55.1 2791.670 61.9 4648.330 61.0 5580.000 63.1 5840.000 61.7 7443.330 68.9 8375.000 65.0 9306.670 62.1 8469.720 66.8	rength Me 2/14/2015 Deniz Demi remont Ch Pol V/h H V	asurements & 8/30/2018 rci & Jude Se amber #4 FCC 2 Limit	emana 24.133	C Cor	onfig. Used: ifig Change:	1 Additional F	Class: ² S used for 5.	N/A	
Run #5b: - Final Field Stre Date of Test: 12 Test Engineer: De Test Location: Fr UT Field Strength Frequency Level MHz dBμV/m 7207.870 58.4 8109.330 65.0 9009.030 73.8 1862.500 55.1 2791.670 61.9 4648.330 61.0 5580.000 63.1 5840.000 61.7 7443.330 68.9 8375.000 65.0 9306.670 62.1 8469.720 66.8	rength Me 2/14/2015 Deniz Demi remont Ch Pol V/h H V	asurements & 8/30/2018 rci & Jude Se amber #4 FCC 2 Limit	emana 24.133	C Cor	onfig. Used: ifig Change:	Additional F	2S used for 5.		
Date of Test: 12 Test Engineer: Detection: Fr Test Location: Fr CUT Field Strength Frequency Level MHz dBμV/m 7207.870 58.4 8109.330 65.0 9009.030 73.8 1862.500 55.1 2791.670 61.9 4648.330 61.0 5580.000 63.1 5840.000 61.7 7443.330 68.9 8375.000 65.0 9306.670 62.1 8469.720 66.8	2/14/2015 peniz Demi remont Ch Pol V/h H V	& 8/30/2018 rci & Jude Se amber #4 FCC 2 Limit	emana 24.133	C Cor	onfig. Used: ifig Change:	Additional F		25V	
Frequency Level MHz dBμV/m 7207.870 58.4 8109.330 65.0 9009.030 73.8 1862.500 55.1 2791.670 61.9 4648.330 61.0 5580.000 63.1 5840.000 61.7 7443.330 68.9 8375.000 65.0 9306.670 62.1 8469.720 66.8	v/h H V	Limit							
Frequency Level MHz dBμV/m 7207.870 58.4 8109.330 65.0 9009.030 73.8 1862.500 55.1 2791.670 61.9 4648.330 61.0 5580.000 63.1 5840.000 61.7 7443.330 68.9 8375.000 65.0 9306.670 62.1 8469.720 66.8	v/h H V	Limit							
MHz dBμV/m 7207.870 58.4 8109.330 65.0 9009.030 73.8 1862.500 55.1 2791.670 61.9 4648.330 61.0 5580.000 63.1 5840.000 61.7 7443.330 68.9 8375.000 65.0 9306.670 62.1 8469.720 66.8	H V		· · · ·	Detector	Azimuth	Height	Comments		Freq
7207.870 58.4 8109.330 65.0 9009.030 73.8 1862.500 55.1 2791.670 61.9 4648.330 61.0 5580.000 63.1 5840.000 61.7 7443.330 68.9 8375.000 65.0 9306.670 62.1 8469.720 66.8	V	82.3	Margin	Pk/QP/Avg	degrees	meters			
9009.030 73.8 1862.500 55.1 2791.670 61.9 4648.330 61.0 5580.000 63.1 5840.000 61.7 7443.330 68.9 8375.000 65.0 9306.670 62.1 8469.720 66.8		02.0	-23.9	Pk	360	2.3	RB 1 MHz;VB 3	3 MHz;Peak	901.0
1862.500 55.1 2791.670 61.9 4648.330 61.0 5580.000 63.1 5840.000 61.7 7443.330 68.9 8375.000 65.0 9306.670 62.1 8469.720 66.8	V	82.3	-17.3	Pk	180	2.0	RB 1 MHz;VB 3	3 MHz;Peak	901.0
2791.670 61.9 4648.330 61.0 5580.000 63.1 5840.000 61.7 7443.330 68.9 8375.000 65.0 9306.670 62.1 8469.720 66.8		82.3	-8.5	Pk	40	2.0	RB 1 MHz;VB 3		901.0
4648.330 61.0 5580.000 63.1 5840.000 61.7 7443.330 68.9 8375.000 65.0 9306.670 62.1 8469.720 66.8	V	82.3	-27.2	Pk	83	2.2	RB 1 MHz;VB 3		930.0
5580.000 63.1 5840.000 61.7 7443.330 68.9 8375.000 65.0 9306.670 62.1 8469.720 66.8	V	82.3	-20.4	Pk	116	2.6	RB 1 MHz;VB 3		930.0
5840.000 61.7 7443.330 68.9 8375.000 65.0 9306.670 62.1 8469.720 66.8	V	82.3	-21.3	Pk	230	1.7	RB 1 MHz;VB 3		930.0
7443.330 68.9 8375.000 65.0 9306.670 62.1 8469.720 66.8	V	82.3	-19.2	Pk	10	2.6	RB 1 MHz;VB 3		930.0
8375.000 65.0 9306.670 62.1 8469.720 66.8	V	82.3	-20.6	Pk	91	2.5	RB 1 MHz;VB 3		930.0
9306.670 62.1 8469.720 66.8	V	82.3	-13.4	Pk	185	2.5	RB 1 MHz;VB 3		930.0
8469.720 66.8	V V	82.3	-17.3	Pk	48	2.2	RB 1 MHz;VB 3		930.0
	V V	82.3	-20.2	Pk	310	1.0	RB 1 MHz;VB 3		930.0
	V	82.3 82.3	-15.5 -12.1	PK PK	202 353	2.0 1.5	RB 1 MHz;VB 3 RB 1 MHz;VB 3		<u>941.0</u> 941.0
9410.060 70.2 7529.250 57.6	V	82.3	-12.1	PK	353	2.5	RB 1 MHz;VB 3		941.0
1529.250 57.0	V	02.0	-24.1	Γſ	555	2.0		IVII IZ,F Cak	941.0
Iote 1: Iote 2: The field streng propagation eq for erp limits, th relative to this Measurements	quation: E the dipole field stren	=√(30PG)/d. gain (2.2dBi) gth limit is de	This limit is o has not bee etermined us	conservative - n included. T ing substitutic	it does not on he erp or eir	consider the p for all sign	presence of t	the ground pl	ane and,
iole Z. Inteasurements	s are made		enna port te	minateu.					

Olivert	GE MDS LL	<u>^</u>						ala Niurraharri	0005204		
Client:	GE MDS LL	5						ob Number:		٨	
Model:	LN900							-	TL085381-R		
							-		Christine Kre	bill	
	Jack Priebe						Project Coordinator: David Bare				
Standard:	FCC parts 24	4, 90 and 10	1					Class:	N/A		
Substitutio /ertical	n measurem	ents									
Frequency	Substitu	ition measur	ements	Site	EU	T measurem	ents	eirp Limit	erp Limit	Margin	
MHz	Pin ¹	Gain ²	FS ³	Factor ⁴	FS⁵	eirp (dBm)		dBm	dBm	dB	
5580.000	-12.8	10.8	92.5	94.5	63.1	-31.4	-33.6		-13.0	-20.6	
7443.000	-13.5	11.0	93.6	96.1	68.9	-27.2	-29.4		-13.0	-16.4	
8375.000	-13.6	10.6	92.6	95.6	65.0	-30.6	-32.8		-13.0	-19.8	
8109.330	-40.1	11.1	68.1	97.1	65.0	-32.1	-34.3		-13.0	-21.3	
9009.030	-40.2	10.9	68.4	97.7	73.8	-23.9	-26.1		-13.0	-13.1	
8469.720	-40.1	11.0	67.5	96.6	66.8	-29.8	-32.0		-13.0	-19.0	
9410.060	-40.2	11.5	68.1	96.8	70.2	-26.6	-28.8		-13.0	-15.8	
			-	1							
Note 1:				ubstitution ant	enna						
lote 2: lote 3:	Gain is the g				a aubatituti	on ontonno					
Note 3.				asured from th onvert from a			to an oirn in	dBm			
Note 5:	EUT field str				neiu streng			udili.			

	NTS			EM	C Test Data
Client:	GE MDS LLC			Job Number:	PR085381
Model:			T-	Log Number:	TL085381-RA
wouer.	LINSOU			-	Christine Krebill
	Jack Priebe		Project	Coordinator:	
Standard:	FCC parts 24, 90 a	and 101		Class:	N/A
est Spec	Power, (cific Details	FCC Part		us Emissio	ons
·	Objective: The of	bjective of this test session is to perform fication listed above.	final qualification testing of t	he EUT with	respect to the
	est Configurati	ion			
neasurement ttenuation b hamber.	nt instrument via an between EUT and n	ed spurious emissions tests, all measure a attenuator or dc-block if necessary. All neasuring instrument. For frequency stal ade with the EUT located on a non-condu	amplitude measurements an bility measurements the EU	re adjusted to T was place i	account for the nside an environmental
neasurement ttenuation h hamber. Nadiated me Nadiated me	nt instrument via an between EUT and n basurements are ma Conditions:	attenuator or dc-block if necessary. All a neasuring instrument. For frequency stal ade with the EUT located on a non-condu Temperature:	amplitude measurements an bility measurements the EU	re adjusted to T was place i	account for the nside an environmental
easurement itenuation h namber. adiated me .mbient (nt instrument via an between EUT and n easurements are ma	attenuator or dc-block if necessary. All a neasuring instrument. For frequency stal ade with the EUT located on a non-condu Temperature:	amplitude measurements an bility measurements the EU uctive table, 3m from the me 23 °C	re adjusted to T was place i easurement a	account for the nside an environmental ntenna.
easuremen Itenuation I namber. adiated me Imbient (nt instrument via an between EUT and n basurements are ma Conditions:	attenuator or dc-block if necessary. All a neasuring instrument. For frequency stal ade with the EUT located on a non-condu Temperature: Rel. Humidity:	amplitude measurements ar bility measurements the EU uctive table, 3m from the me 23 °C 44 %	re adjusted to T was place i	account for the nside an environmental ntenna.
easurement tenuation h namber. adiated me mbient (ummary Run #	nt instrument via an between EUT and n basurements are ma Conditions:	attenuator or dc-block if necessary. All a neasuring instrument. For frequency stal ade with the EUT located on a non-condu Temperature: Rel. Humidity:	amplitude measurements ar bility measurements the EU uctive table, 3m from the me 23 °C 44 %	re adjusted to T was place i easurement a Pass / Fail	account for the nside an environmental ntenna. Result / Margin
neasuremen ttenuation h hamber. adiated me adiated me	nt instrument via an between EUT and n basurements are ma Conditions:	attenuator or dc-block if necessary. All a neasuring instrument. For frequency stal ade with the EUT located on a non-condu Temperature: Rel. Humidity:	amplitude measurements ar bility measurements the EU uctive table, 3m from the me 23 °C 44 %	re adjusted to T was place i easurement a Pass / Fail	account for the nside an environmer ntenna. Result / Margir

	NTS						EM	C Test Data
Client:	GE MDS LLC						Job Number:	PR085381
Model:						T-I	Log Number:	TL085381-RA
wouer.	LINGOO					Proje	ect Manager:	Christine Krebill
Contact:	Jack Priebe					Project	Coordinator:	David Bare
Standard:	FCC parts 24, 90 and 10	1					Class:	N/A
[Te	utput Power Date of Test: 8/30/2018 est Engineer: David Bare est Location: Fremont EM	IC Lab #4B		Cor	onfig. Used: ifig Change: UT Voltage:	None		
	Cable Loss: Cable ID(s):	-	At	Attenuator: tenuator IDs:		68107	Total Loss:	20.0 dB
Power Setting ²	Frequency (MHz)	Output (dBm) ¹	Power mW	Antenna Gain (dBi)	Result	EI dBm	RP W	
40	928	(dBm) 40.8	12022.6	16.5	Pass	57.3	537.032	
40	944	41.0	12589.3	16.5	Pass	57.5	562.341	
40	960	41.0	12589.3	16.5	Pass	57.5	562.341	
Note 1: Note 2:	Output power measured Power setting - the softw				included for	reference or	nly.	



In #3: Signal Bandwidth Date of Test: 8/29/2018 Test Engineer: David Bare Test Location: Fremont EMC Lab #4B Power Frequency (MHz) Resolution Bandwidth (kHz) Bandwidth 99% 40 930 510 Hz 43.20 BAUD 40000 Test Location: Frequency (MHz) Resolution Bandwidth (kHz) Bandwidth 99% 40 930 510 Hz 43.20 BAUD 40000 Test Location: Frequency (MHz) Resolution Bandwidth (kHz) Bandwidth (kHz)
Project Manager: Christine K Contact: Jack Priebe Project Coordinator: David Bare Standard: FCC parts 24, 90 and 101 Class: N/A In #3: Signal Bandwidth Config. Used: 1 Class: N/A In #3: Signal Bandwidth Date of Test: 8/29/2018 Config. Used: 1 Test Engineer: David Bare Config Change: None EUT Voltage: 13.8 VDC Image: Frequency (MHz) Resolution Bandwidth (kHz) 99% 40 930 510 Hz 43.20 BAUD 40000 te 1: 99% bandwidth measured in accordance with ANSI C63.10, with RB between 1% and 5% of the measured band 20.0 - 20.0 - 20.0 - 1.5% and ≤ 5% of measured bandwidth. Analyzer Settings Agilent Technologies, E444t CF: 930.025 MHz SPAN: 150 kHz SPAN: 150 kHz 98: 1.50 kHz SPAN: 150 kHz SPAN: 150 kHz SPAN: 150 kHz SPAN: 150 kHz 99: 1.50 kHz SPAN: 150 kHz SPAN: 150 kHz SPAN: 150 kHz SPAN: 150 kHz
Standard: FCC parts 24, 90 and 101 Class: N/A In #3: Signal Bandwidth Date of Test: 8/29/2018 Config. Used: 1 Test Engineer: David Bare Config Change: None Test Location: Frequency (MHz) Resolution Bandwidth (kHz) Setting Frequency (MHz) Resolution Bandwidth (kHz) Setting Frequency (MHz) Bandwidth (kHz) Bandwidth (kHz) 99% 930 510 Hz 43.20 BAUD 40000 ote 1: 99% bandwidth measured in accordance with ANSI C63.10, with RB between 1% and 5% of the measured bandwidth. Analyzer Settings 30.0 20.0 3*RB and Span ≥ 1.5% and ≤ 5% of measured bandwidth. Analyzer Settings 30.0 Analyzer Settings Agilent Technologies, E4444 CF: 930.025 MHz 91.0 90 510 Hz VB: 1.50 kHz RB: 510 Hz 92.0 93.150 kHz RB: 510 Hz VB: 1.50 kHz RB: 510 Hz
un #3: Signal Bandwidth Date of Test: 8/29/2018 Test Engineer: David Bare Test Location: Fremont EMC Lab #4B Power Frequency (MHz) Resolution Bandwidth (kHz) Bandwidth 99% 40 930 510 Hz 43.20 BAUD 40000 Power Frequency (MHz) Resolution Bandwidth (kHz) Bandwidth 99% 40 930 510 Hz 43.20 BAUD 40000 Power Setting Frequency (MHz) Resolution Bandwidth (kHz) Bandwidth weasured in accordance with ANSI C63.10, with RB between 1% and 5% of the measured band Power Setting Frequency (MHz) Resolution Bandwidth (kHz) Power Frequency (MHz) Resolution Bandwidth (kHz) Bandwidth (kHz) Bandwidth weasured in accordance with ANSI C63.10, with RB between 1% and 5% of the measured band Power Settings Agilent Technologies, E4444 CF: 930.025 MHz SPAN: 150 kHz RB: 510 Hz VB: 1.50 kHz RB: 510 Hz VB: 1.50 kHz RB: 510 Hz
Test Engineer: David Bare Config Change: None Test Location: Fremont EMC Lab #4B EUT Voltage: 13.8 VDC $ \frac{Power}{Setting} Frequency (MHz) Resolution Bandwidth (kHz) Bandwidth (kHz) Bandwidth 99% 40 930 510 Hz 43.20 BAUD 40000 $ $ \frac{99\%}{40} bandwidth measured in accordance with ANSI C63.10, with RB between 1% and 5% of the measured band bandwidth. $ $ \frac{30.0}{20.0} - \frac{37RB and Span \ge 1.5\% and \le 5\% of measured bandwidth. $ $ \frac{30.0}{10.0} - \frac{37RB and Span \ge 1.5\% and \le 5\% of measured bandwidth. $ $ \frac{30.0}{10.0} - \frac{37RB and Span \ge 1.5\% and \le 5\% of measured bandwidth. $ $ \frac{30.0}{20.0} - \frac{37RB and Span \ge 1.5\% and \le 5\% of measured bandwidth. $ $ \frac{30.0}{20.0} - \frac{37RB and Span \ge 1.5\% and \le 5\% of measured bandwidth. $ $ \frac{30.0}{20.0} - \frac{37RB and Span \ge 1.5\% and \le 5\% of measured bandwidth. $ $ \frac{30.0}{20.0} - \frac{37RB and Span \ge 1.5\% and \le 5\% of measured bandwidth. $ $ \frac{30.0}{20.0} - \frac{37RB and Span \ge 1.5\% and \le 5\% of measured bandwidth. $ $ \frac{30.0}{20.0} - \frac{37RB and Span \ge 1.5\% and \le 5\% of measured bandwidth. $ $ \frac{30.0}{20.0} - \frac{37RB and Span \ge 1.5\% and \le 5\% of measured bandwidth. $ $ \frac{30.0}{20.0} - 37RB and Span \ge 1.5\% and \le 5\% of measured bandwidth. $
Setting Frequency (MH2) Bandwidth 99% 40 930 510 Hz 43.20 BAUD 40000 te 1: 99% bandwidth measured in accordance with ANSI C63.10, with RB between 1% and 5% of the measured band $\ge 3^*RB$ and Span $\ge 1.5\%$ and $\le 5\%$ of measured bandwidth. Analyzer Settings $20.0 10.0 10.0 10.0 -$
Setting Handwidth 99% 40 930 510 Hz 43.20 BAUD 40000 ote 1: 99% bandwidth measured in accordance with ANSI C63.10, with RB between 1% and 5% of the measured bandwidth. ote 1: $≥$ 3*RB and Span ≥ 1.5% and ≤ 5% of measured bandwidth. Analyzer Settings Agilent Technologies, E4446 SPAN: 150 kHz 10.0 - 10.0 - Note 1: $2 = 1.5\%$ and $≤ 5\%$ of measured bandwidth.
99% bandwidth measured in accordance with ANSI C63.10, with RB between 1% and 5% of the measured band ≥ 3*RB and Span ≥ 1.5% and ≤ 5% of measured bandwidth. 30.0 - 20.0 - 10.0 -
016 1: ≥ 3*RB and Span ≥ 1.5% and ≤ 5% of measured bandwidth. 30.0 - Analyzer Settings 20.0 - Agilent Technologies, E444¢ 10.0 - F: 930.025 MHz SPAN: 150 kHz RB: 510 Hz VB: 1.50 kHz VB: 1.50 kHz VB: 1.50 kHz VB: 1.50 kHz
0.0 - Attn: 30 DB RL Offset: 20.0 DB Sweep Time: 0.6s Ref Lvl: 40.0 DBM Ref Lvl: 40.0 DBM
-20.0 - Comments
-30.0 - -40.0 - 929.950 929.980 930.000 930.020 930.040 930.060 930.080 930.100 Frequency (MHz)
Cursor 1 930.0034 28.7 💠 🗁 Delta Freq. 43.2 kHz
Cursor 2 930.0465 2.7 🛧 🚡 Delta Amplitude 26.0

Client: GE MDS LLC Job Number: PR085381 Model: LN900 T-Log Number: TL085381-RA Contact: Jack Priebe Project Manager: Christine Krebill Contact: Jack Priebe Project Coordinator: David Bare Standard: FCC parts 24, 90 and 101 Class: N/A FC parts 24, 90 and 101 Christine Krebill Contact: Jack Priebe Project Coordinator: David Bare Standard: FCC parts 24, 90 and 101 Class: N/A FC parts 24, 90 and 101 Class: N/A FCC parts 24, 90 and 101 Class: N/A Class: N/A Christine Krebill Christine Krebill</t

General Test Configuration

All measurements are made with the EUT's rf port connected to a RF load. The EUT was placed inside a semi anechoic chmaber. Measurements were made with the EUT located on a non-conductive table 80 cm above the floor, 3m from the measurement antenna.

Ambient Conditions:	Temperature:	21 °C
	Rel. Humidity:	42 %

Summary of Results

R	Run #		Test Performed	Limit	Pass / Fail	Result / Margin
	4		Spurious Emissions (conducted)	-20 dBm	Pass	No emissions from EUT
	5		Spurious emissions (radiated)	-20 dBm	Pass	No emissions from EUT

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Client [.]	GE MDS LLC			Job Number:	PR085381
				T-Log Number:	
Model:	LN900			Project Manager:	
Contact:	Jack Priebe			Project Coordinator:	
Standard:	FCC parts 24, 90 and 10	1		Class:	N/A
D Te	ut of Band Spurious Emi Date of Test: 9/4/2018 st Engineer: David Bare est Location: Fremont EM		Config. Use Config Chang EUT Voltag		
		Frequency (MHz)	Limit	Result	
		941	-20 dBm	Pass	
-10.0 -20.0 (mg -30.0 -40.0 -40.0 V -50.0 V -60.0) -				
-70.0) - WW. J. W.	hall an			
-90.0)-				
(0.030 0.100	Fra	1.000 quency (MHz)	10.000	30.000
ote:	No emissions from the E	JT were observed above t	the noise floor of the i	neasurments system from 3	0 kHz to 30 MHz

Job Number: PR08538					GE MDS LLO	Client:
T-Log Number: TL08538				5		
Project Manager: Christine					LN900	Model:
Project Coordinator: David Ba					Jack Priebe	Contact:
Class: N/A			1	4, 90 and 10	FCC parts 24	Standard:
			ited	sions, Radia	urious Emis	Run #5: Spı
-20			limit (dBm):			
75.3		75.3	limit @ 3m:	ield strength	Approximate f	A
			ask D	C Part 90 M	aken from FC	The limit is ta
Config. Used: 1					Date of Test:	
Config Change: None			nahar #1		st Engineer: est Location:	
EUT Voltage: 13.8 & 5.25 VDC	EU		Habel #4	Fiemoni Chi	St Location.	Te
Detector Azimuth Height Comments			FCC F	Pol	Level	Frequency
gin Pk/QP/Avg degrees meters	<u> </u>	Margin -22.1	Limit 75.3	v/h V	dBμV/m 53.2	MHz 0.214
1 Peak 115 1.0		-22.1	10.0			0.100
.8 Peak 156 1.0 as calculated from the erp/eirp limit detailed in the standard using t nit is conservative - it does not consider the presence of the ground	Peak culated from th onservative - i	This limit is c	√(30PG)/d.	equation: E=	propagation	Note 1:
.8 Peak 156 1.0 as calculated from the erp/eirp limit detailed in the standard using t	Peak culated from th onservative - i included.	oove was cal This limit is c has not beer	the tables at √(30PG)/d. ain (2.2dBi) he EUT Tx fr	ength limit in equation: E= , the dipole g s related to t	The field stre propagation for erp limits No emission	Note 1:
.8 Peak 156 1.0 as calculated from the erp/eirp limit detailed in the standard using the stan	Peak culated from th onservative - i included. n the EUT we	bove was cal This limit is c has not beer requency fro	the tables ab √(30PG)/d. ain (2.2dBi) he EUT Tx fr s keyed.	ength limit in equation: E= , the dipole g s related to t	The field stre propagation for erp limits	Note 1:
.8 Peak 156 1.0 as calculated from the erp/eirp limit detailed in the standard using t hit is conservative - it does not consider the presence of the ground t been included.	Peak culated from th onservative - i included. n the EUT we	bove was cal This limit is c has not beer requency fro	the tables ab √(30PG)/d. ain (2.2dBi) he EUT Tx fr s keyed.	ength limit in equation: E= , the dipole g s related to t	The field stre propagation for erp limits No emission	Note 1:
.8 Peak 156 1.0 as calculated from the erp/eirp limit detailed in the standard using the stan	Peak culated from th onservative - i included. n the EUT we	bove was cal This limit is c has not beer requency fro	the tables ab √(30PG)/d. ain (2.2dBi) he EUT Tx fr s keyed.	ength limit in equation: E= , the dipole g s related to t	The field stre propagation for erp limits No emission	Note 1:
.8 Peak 156 1.0 as calculated from the erp/eirp limit detailed in the standard using the stan	Peak culated from th onservative - i included. n the EUT we	bove was cal This limit is c has not beer requency fro	the tables ab √(30PG)/d. ain (2.2dBi) he EUT Tx fr s keyed.	ength limit in equation: E= , the dipole g s related to t	The field stre propagation for erp limits No emission the transmitt	Note 1: Note 2:
.8 Peak 156 1.0 as calculated from the erp/eirp limit detailed in the standard using the stan	Peak culated from th onservative - i included. n the EUT we	bove was cal This limit is c has not beer requency fro	the tables ab √(30PG)/d. ain (2.2dBi) he EUT Tx fr s keyed.	ength limit in equation: E= , the dipole g s related to t	The field stre propagation for erp limits No emission the transmitt	Note 1: Note 2: TX 941
.8 Peak 156 1.0 as calculated from the erp/eirp limit detailed in the standard using the stan	Peak culated from th onservative - i included. n the EUT we	bove was cal This limit is c has not beer requency fro	the tables ab √(30PG)/d. ain (2.2dBi) he EUT Tx fr s keyed.	ength limit in equation: E= , the dipole g s related to t	The field stre propagation for erp limits No emission the transmitt	Note 1: Note 2: TX 941 80.0 - 70.0 -
.8 Peak 156 1.0 as calculated from the erp/eirp limit detailed in the standard using the stan	Peak culated from th onservative - i included. n the EUT we	bove was cal This limit is c has not beer requency froi	the tables ab √(30PG)/d. ain (2.2dBi) he EUT Tx fr s keyed.	ength limit in equation: E= , the dipole g s related to t	The field stre propagation for erp limits No emission the transmitt	Note 1: Note 2: TX 941 80.0 - 70.0 -
.8 Peak 156 1.0 as calculated from the erp/eirp limit detailed in the standard using the stan	Peak culated from th onservative - i included. n the EUT we	bove was cal This limit is c has not beer requency froi	the tables ab √(30PG)/d. ain (2.2dBi) he EUT Tx fr s keyed.	ength limit in equation: E= , the dipole g s related to t	The field stre propagation for erp limits No emission the transmitt	Note 1: Note 2: TX 941 80.0 - 70.0 -
.8 Peak 156 1.0 as calculated from the erp/eirp limit detailed in the standard using the stan	Peak culated from th onservative - i included. n the EUT we	bove was cal This limit is c has not beer requency froi	the tables ab √(30PG)/d. ain (2.2dBi) he EUT Tx fr s keyed.	ength limit in equation: E= , the dipole g s related to t	The field stre propagation for erp limits No emission the transmitt	Note 1: Note 2: TX 941 80.0 - 70.0 -
.8 Peak 156 1.0 as calculated from the erp/eirp limit detailed in the standard using the stan	Peak culated from th onservative - i included. n the EUT we	bove was cal This limit is c has not beer requency froi	the tables ab √(30PG)/d. ain (2.2dBi) he EUT Tx fr s keyed.	ength limit in equation: E= , the dipole g s related to t	The field stre propagation for erp limits No emission the transmitt	Note 1: Note 2: TX 941 80.0 - 70.0 - (∭/∆ngp) apn1ild 40.0 -
.8 Peak 156 1.0 as calculated from the erp/eirp limit detailed in the standard using the stan	Peak culated from th onservative - i included. n the EUT we	bove was cal This limit is c has not beer requency froi	the tables ab √(30PG)/d. ain (2.2dBi) he EUT Tx fr s keyed.	ength limit in equation: E= , the dipole g s related to t	The field stre propagation for erp limits No emission the transmitt	Note 1: Note 2: TX 941 80.0 - 70.0 -



EMC Test Data

Client:	GE MDS LLC	Job Number:	JD99760
Product	LN900	T-Log Number:	Т99783
System Configuration:	Module	Project Manager:	Christine Krebill
Contact:	Dennis McCarthy	Project Coordinator:	-
Emissions Standard(s):	FCC Parts 15, 90 and 101, RSS-119	Class:	-
Immunity Standard(s):		Environment:	Radio

EMC Test Data

For The

GE MDS LLC

Product

LN900

Date of Last Test: 12/22/2015

EMC Test Data

Client:	GE MDS LLC	Job Number:	JD99760
Model	LN900	T-Log Number:	Т99783
MOUEI.	EN900	Project Manager:	Christine Krebill
Contact:	Dennis McCarthy	Project Coordinator:	-
Standard:	FCC Parts 15, 90 and 101, RSS-119	Class:	N/A

RSS-119 and FCC Part 90

Power, Occupied Bandwidth, Frequency Stability and Spurious Emissions

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

General Test Configuration

With the exception of the radiated spurious emissions tests, all measurements are made with the EUT's rf port connected to the measurement instrument via an attenuator or dc-block if necessary. All amplitude measurements are adjusted to account for the attenuation between EUT and measuring instrument. For frequency stability measurements the EUT was place inside an environmental chamber.

Radiated measurements are made with the EUT located on a non-conductive table, 3m from the measurement antenna.

Ambient Conditions:	Temperature:	20-22 °C
	Rel. Humidity:	30-36 %

Summary of Results

Gammary	erneed	.0				
Run #	Spacing	Data Rate	Test Performed	Limit	Pass / Fail	Result / Margin
1			Output Power	Depends on license	Pass	40.8 dBm
2			Spectral Mask	varies with modulation	Pass	Complied with Mask
3			99% or Occupied Bandwidth	varies with modulation	-	See below
Λ			Spurious Emissions (conducted)	-20 dBm	Pass	-27.3 dBm @ 1858.9
4			Spurious Emissions (conducted)	-20 00111	rass	MHz (-7.3 dB)
5			Spurious emissions (radiated)	-20 dBm	Pass	-24.6 dBm @ 9319.6
5			Spurious emissions (radiated)	-20 UDIII	rd55	MHz (-4.6 dB)
6			Frequency Stability	1.5 ppm ¹	Pass	0.3 ppm
				•	•	

Modifications Made During Testing

No modifications were made to the EUT during testing

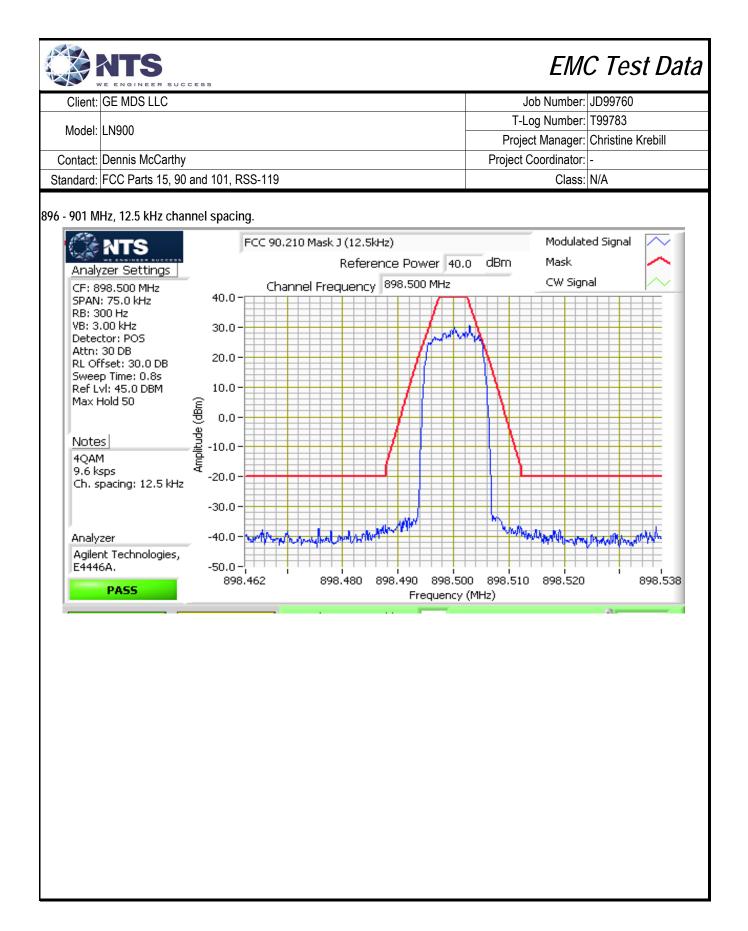
Deviations From The Standard

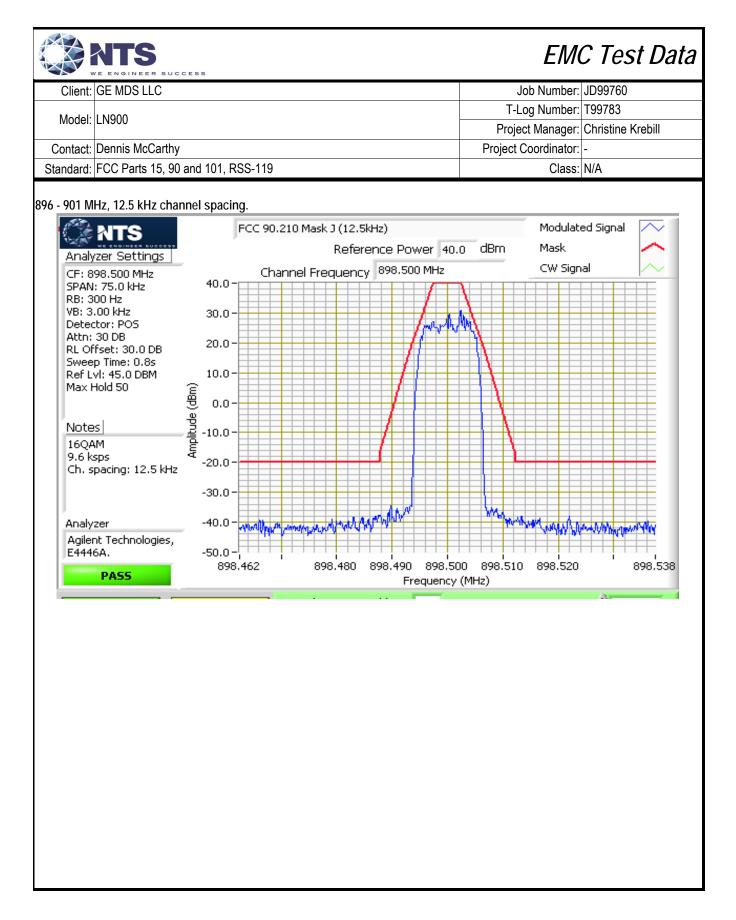
No deviations were made from the requirements of the standard.

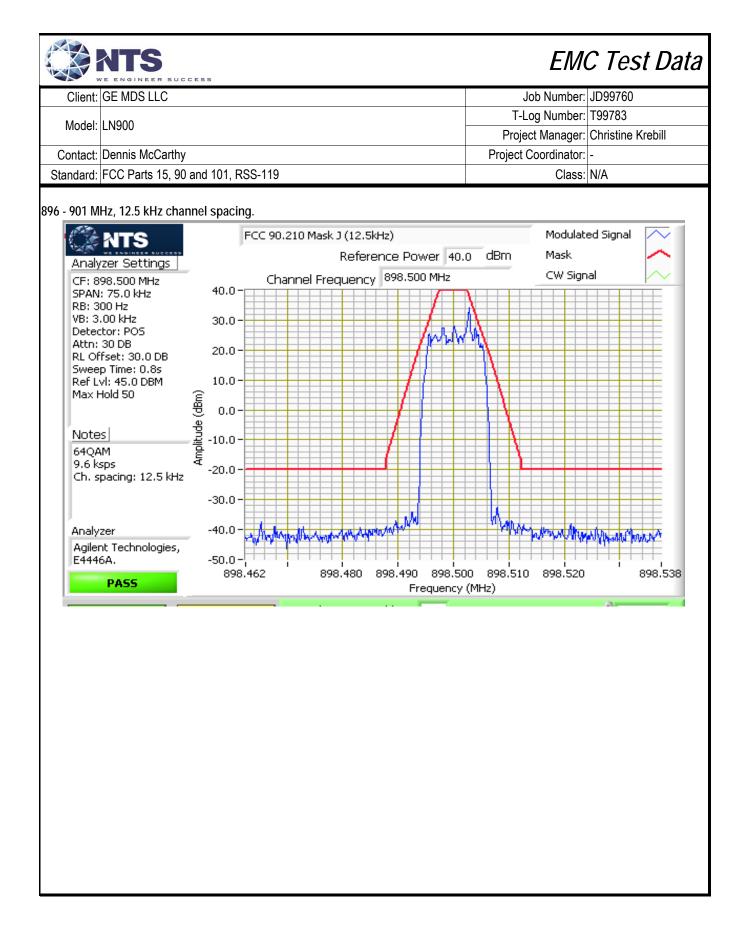
	NTS						EM	C Test Data
Client	GE MDS LLC					,	Job Number:	JD99760
							og Number:	
Model	LN900						0	Christine Krebill
Contact	Dennis McCarthy					-	Coordinator:	
	FCC Parts 15, 90 and 10	1 DCC 110				110,000	Class:	
	FUC Fails 15, 50 and 10	1, NSO-119					01855.	N/A
896-901MH MHz, 25 kH Target pow cannot exce ¹ FCC Part Limited Moo Run #1: O	5-901MHz & 935-940MHz z, 928-929 MHz, 931-935 z channel spacing. er: 10 Watts (40 dBm). Q/ eed measured power. Pov 90.213 (footnote 14) and i dular approval utput Power Date of Test: 10/26/2015 est Engineer: Deniz Demi	MHz, 941-9 M modulatic ver limits in § RSS-119 Sec	44 MHz, and on (FCC Wai 90.205 (k), (952-953 MH ver for D1D e (m), § 90.635 w 1.5 ppm for C	z, 12.5, 25 k mission type & § 90.494	Hz channel s); need to kn ion operation 1	spacings, 929	9-930 MHz and 931-932
	est Location: Fremont Lal Cable Loss: 0.0 dB Cable ID(s): None		Att		UT Voltage: 30.0 dB	13.8 VDC	Total Loss:	30.0 dB
FCC Part 9	0 & RSS-119	-						
Power	Frequency (MHz)		Power	Antenna	Result		RP	
Setting ²		(dBm) ¹	mW	Gain (dBi)	rtoout	dBm	W	
40 dBm	896.0	40.7	11749.0	16.5		57.2	524.807	
40 dBm	901.0	40.6	11481.5	16.5		57.1	512.861	
40 dBm	929.0	40.7	11749.0	16.5		57.2	524.807	
40 dBm	930.0	40.8	12022.6	16.5		57.3	537.032	
40 dBm	935.0	40.7	11749.0	16.5		57.2	524.807	
40 dBm	940.0	40.6	11481.5	16.5		57.1	512.861	
RSS-119 of	nly	Output	Power	Antonno		CII	RP	
Power Setting ²	Frequency (MHz)	(dBm) ¹	mW	Antenna Gain (dBi)	Result	dBm	W	
40 dBm	941.0	40.6	11481.5	16.5		57.1	512.861	
40 dBm	944.0	40.7	11749.0	16.5		57.2	524.807	
40 dBm	952.5	40.8	12022.6	16.5		57.3	537.032	
Note 1: Note 2:	Output power measured Power setting - the softw				included for	reference or	ıly.	

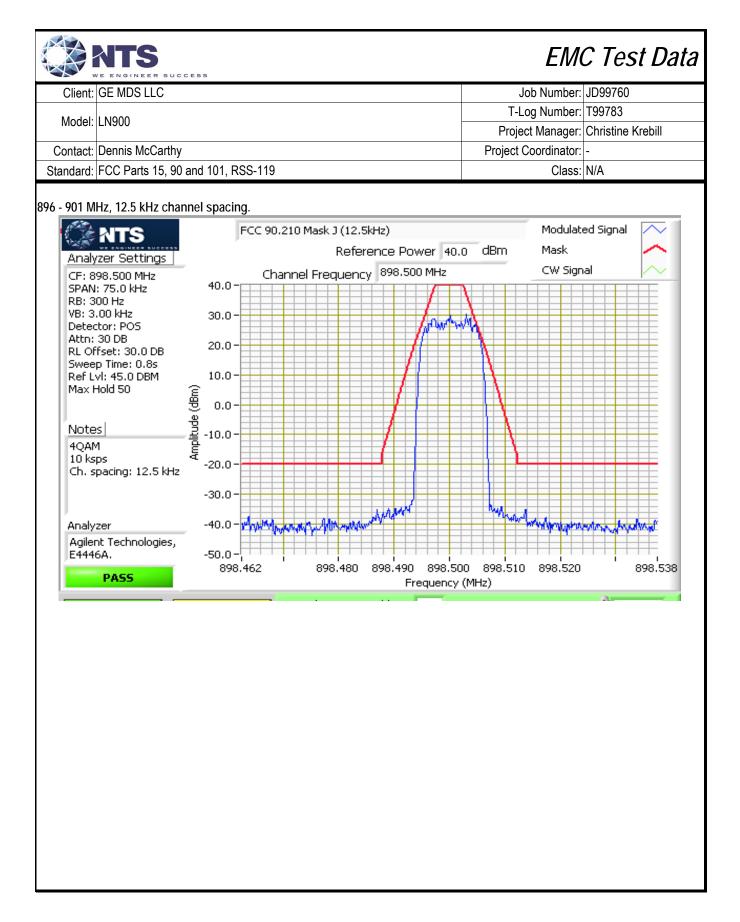
Client	GE MDS LL	C				J	lob Number	: JD99760
Model	LN900						.og Number	
Model						Proje	ect Manager	: Christine Kreb
Contact	Dennis McC	arthy				Project (Coordinator	: -
Standard	FCC Parts 1	5, 90 and 10	1, RSS-119				Class	: N/A
RSS-119 M Nask G for	ask J for 12. 25 kHz char Date of Test:	5 KHz chanr inels 10/26, 10/27	nels (896-90 7, 12/11/2018	1 MHz and 9	0 MHz and J for 896-90 35-940 MHz), Mask D fi Config. Used Config Change	or 12.5 kHz c		
	est Engineer: est Location:			ale	EUT Voltage			
					Lo i voltago	. 10.0 000		
	EUT does no	ot transmit ur	nmodulated	carrier with fu	Il power setting. The me	asured power	levels (usir	ig peak power n
					channel frequency. Nom	•		• • •
lote 1:	nigher than							
ote 1:	U U		•	st case results	S.			
lote 1:	U U		•		S.		•	
	spectral mas	sk measurem	ients as wors	st case results		2 440		
Note 1: Run #2a: S	spectral mas	sk measurem k for 896 - 9	nents as wors 01 & 935-94	st case results 0 MHz bands	s. s (FCC Part 90 and RSS	1		۳
	spectral mas Spectral Mas Power	sk measurem k for 896 - 9 Data	nents as wors 01 & 935-94 Channel	st case results		Emission	Result]
	Spectral mas Spectral Mas Power setting	sk measurem k for 896 - 9 Data rate	nents as wors 01 & 935-94 Channel plan	st case results 0 MHz bands Modulation	s (FCC Part 90 and RSS Frequency (MHz)	Emission mask		
	Spectral mas Spectral Mas Power setting 40 dBm	sk measurem k for 896 - 9 Data rate 4.8 ksps	onts as wors 01 & 935-94 Channel plan 6.25 kHz	o MHz bands Modulation 4QAM	s (FCC Part 90 and RSS Frequency (MHz) 898.5	Emission mask N/A		
	Spectral Mas Power setting 40 dBm 40 dBm	sk measurem k for 896 - 9 Data rate 4.8 ksps 4.8 ksps	01 & 935-94 Channel plan 6.25 kHz 6.25 kHz	o MHz bands Modulation 4QAM 16QAM	s (FCC Part 90 and RSS Frequency (MHz) 898.5 898.5	Emission mask N/A N/A		
	Spectral Mas Power setting 40 dBm 40 dBm 40 dBm	k measurem k for 896 - 9 Data rate 4.8 ksps 4.8 ksps 4.8 ksps	01 & 935-94 Channel plan 6.25 kHz 6.25 kHz 6.25 kHz	o MHz bands Modulation 4QAM 16QAM 64QAM	s (FCC Part 90 and RSS Frequency (MHz) 898.5 898.5 898.5	Emission mask N/A N/A N/A	Result	
	Spectral Mas Power setting 40 dBm 40 dBm 40 dBm 40 dBm	k measurem k for 896 - 9 Data rate 4.8 ksps 4.8 ksps 4.8 ksps 9.6 ksps	01 & 935-94 Channel plan 6.25 kHz 6.25 kHz 6.25 kHz 12.5 kHz	o MHz bands Modulation 4QAM 16QAM 64QAM 4QAM	s (FCC Part 90 and RSS Frequency (MHz) 898.5 898.5	Emission mask N/A N/A N/A J	Result	
	Spectral mas Power setting 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm	k measurem k for 896 - 9 Data rate 4.8 ksps 4.8 ksps 4.8 ksps 9.6 ksps 9.6 ksps	01 & 935-94 Channel plan 6.25 kHz 6.25 kHz 6.25 kHz 12.5 kHz 12.5 kHz	o MHz bands Modulation 4QAM 16QAM 64QAM 4QAM 16QAM	s (FCC Part 90 and RSS Frequency (MHz) 898.5 898.5 898.5 898.5 898.5	Emission mask N/A N/A N/A J J	Result Pass Pass	
	Spectral Mas Power setting 40 dBm 40 dBm 40 dBm 40 dBm	k measurem k for 896 - 9 Data rate 4.8 ksps 4.8 ksps 9.6 ksps 9.6 ksps 9.6 ksps 9.6 ksps	01 & 935-94 Channel plan 6.25 kHz 6.25 kHz 6.25 kHz 12.5 kHz	o MHz bands Modulation 4QAM 16QAM 64QAM 4QAM	s (FCC Part 90 and RSS Frequency (MHz) 898.5 898.5 898.5 898.5 898.5 898.5	Emission mask N/A N/A N/A J	Result	
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	Spectral Mas Power setting 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm	k measurem k for 896 - 9 Data rate 4.8 ksps 4.8 ksps 9.6 ksps 9.6 ksps 9.6 ksps 9.6 ksps	01 & 935-94 Channel plan 6.25 kHz 6.25 kHz 6.25 kHz 12.5 kHz 12.5 kHz 12.5 kHz 12.5 kHz	o MHz bands Modulation 4QAM 16QAM 64QAM 4QAM 64QAM 64QAM 4QAM	s (FCC Part 90 and RSS Frequency (MHz) 898.5 898.5 898.5 898.5 898.5 898.5 898.5 898.5 898.5	Emission mask N/A N/A J J J J J J	Result Pass Pass Pass Pass Pass	
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	Spectral Mas Power setting 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm	k measurem k for 896 - 9 Data rate 4.8 ksps 4.8 ksps 4.8 ksps 9.6 ksps 9.6 ksps 9.6 ksps 10.0 ksps 10.0 ksps 10.0 ksps	01 & 935-94 Channel plan 6.25 kHz 6.25 kHz 6.25 kHz 12.5 kHz 12.5 kHz 12.5 kHz 12.5 kHz 12.5 kHz 12.5 kHz 12.5 kHz	o MHz bands Modulation 4QAM 16QAM 64QAM 16QAM 64QAM 4QAM 16QAM 64QAM 64QAM 64QAM	s (FCC Part 90 and RSS Frequency (MHz) 898.5 898.5 898.5 898.5 898.5 898.5 898.5 898.5 898.5 898.5 898.5 898.5 898.5	Emission mask N/A N/A J J J J J J J J J J J J	Result Pass Pass Pass Pass Pass Pass Pass	

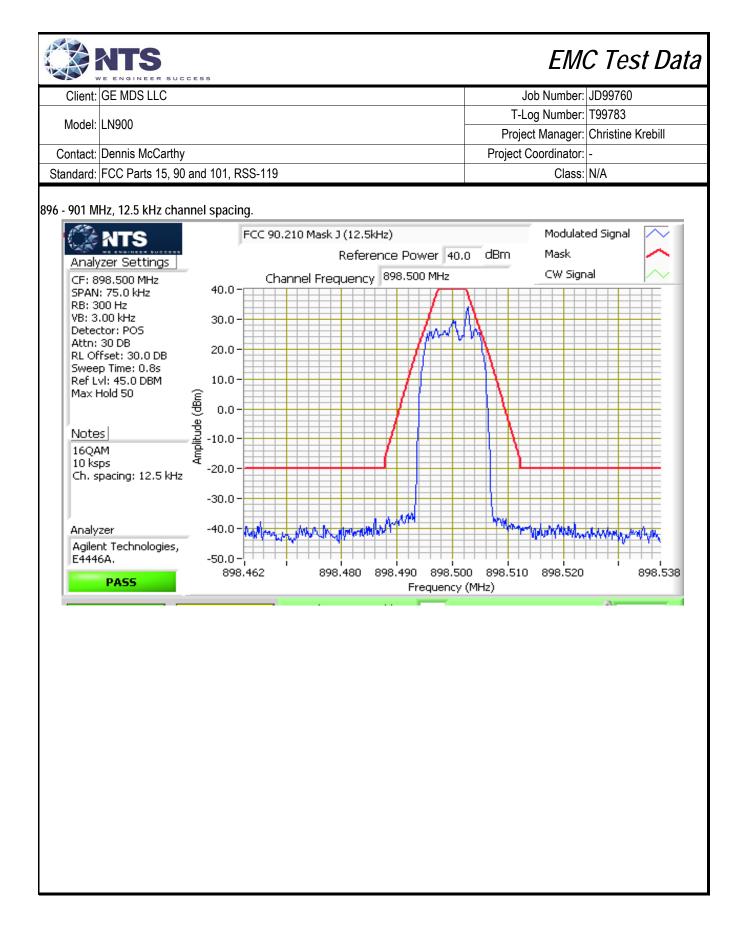
Client	: GE MDS LL	.C				J	ob Number:	JD99760
						T-L	og Number:	T99783
Model	: LN900						2	Christine Kreb
Contact	: Dennis McC	`arthv				-	Coordinator:	
						riojeci v		
Standard	: FCC Parts 1	15, 90 and 10	11, RSS-119				Class:	N/A
#0 1	C				(DCC 110)			
kun #20:		1		30 MHz bands	S (RSS-119)	Emission	Depult	1
	Power	Data	Channel	Modulation	Frequency (MHz)	Emission	Result	
	setting 40 dBm	rate	plan 6.25 kHz	4QAM	928.5	mask N/A		
		4.8 ksps			928.5			
	40 dBm 40 dBm	4.8 ksps 4.8 ksps	6.25 kHz	16QAM 64QAM	928.5	N/A N/A		
	40 dBm 40 dBm		6.25 kHz 12.5 kHz	4QAM 4QAM	928.5	C & D	Paca	
	40 dBm 40 dBm	9.6 ksps	12.5 kHz 12.5 kHz	16QAM	928.5	C&D C&D	Pass Pass	
	40 dBm 40 dBm	9.6 ksps	12.5 kHz 12.5 kHz	64QAM	928.5	C&D C&D		
	40 dBm 40 dBm	9.6 ksps	12.5 kHz 12.5 kHz	4QAM 4QAM	928.5	C&D C&D	Pass	
	40 dBm 40 dBm	10.0 ksps 10.0 ksps	12.5 kHz 12.5 kHz	16QAM	928.5	C&D C&D	Pass Pass	
	40 dBm	10.0 ksps 10.0 ksps	12.5 kHz 12.5 kHz	64QAM	928.5	C&D C&D	Pass	
	40 dBm	16.0 ksps	25.0 kHz	4QAM 4QAM	928.5	C&D C&G	Pass	
	40 dBm	16.0 ksps 16.0 ksps	25.0 kHz	16QAM	928.5	C&G C&G	Pass	
	40 dBm	16.0 ksps 16.0 ksps	25.0 kHz	64QAM	928.5	C&G C&G	Pass	
		10.0 1000	20.0 NHZ		020.0		1 033	J
un #2c• 1	Spectral Mas	k at 929 - 93	0 MHz hand	I (FCC Part 9	0)			
un #2c: \$	r	1		d (FCC Part 9 Modulation	-	Emission	Result	1
un #2c: \$	Power	Data	Channel	d (FCC Part 9 Modulation	0) Frequency (MHz)	Emission mask	Result	
un #2c: 3	Power setting	Data rate	Channel plan	Modulation	Frequency (MHz)	mask		
un #2c: \$	Power setting 40 dBm	Data rate 4.8 ksps	Channel plan 6.25 kHz	Modulation 4QAM	Frequency (MHz) 929.5	mask G	Pass	
un #2c: :	Power setting 40 dBm 40 dBm	Data rate 4.8 ksps 4.8 ksps	Channel plan 6.25 kHz 6.25 kHz	Modulation 4QAM 16QAM	Frequency (MHz) 929.5 929.5	mask G G	Pass Pass	
un #2c: \$	Power setting 40 dBm 40 dBm 40 dBm	Data rate 4.8 ksps 4.8 ksps 4.8 ksps	Channel plan 6.25 kHz 6.25 kHz 6.25 kHz	Modulation 4QAM 16QAM 64QAM	Frequency (MHz) 929.5 929.5 929.5 929.5	mask G G G	Pass Pass Pass	
un #2c: 1	Power setting 40 dBm 40 dBm 40 dBm 40 dBm	Data rate 4.8 ksps 4.8 ksps 4.8 ksps 9.6 ksps	Channel plan 6.25 kHz 6.25 kHz 6.25 kHz 12.5 kHz	Modulation 4QAM 16QAM 64QAM 4QAM	Frequency (MHz) 929.5 929.5 929.5 929.5 929.5	mask G G G G	Pass Pass Pass Pass	
un #2c: \$	Power setting 40 dBm 40 dBm 40 dBm 40 dBm	Data rate 4.8 ksps 4.8 ksps 4.8 ksps 9.6 ksps 9.6 ksps	Channel plan 6.25 kHz 6.25 kHz 6.25 kHz 12.5 kHz 12.5 kHz	Modulation 4QAM 16QAM 64QAM 4QAM 16QAM	Frequency (MHz) 929.5 929.5 929.5 929.5 929.5 929.5	mask G G G G G G	Pass Pass Pass Pass Pass	
un #2c: \$	Power setting 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm	Data rate 4.8 ksps 4.8 ksps 4.8 ksps 9.6 ksps 9.6 ksps 9.6 ksps	Channel plan 6.25 kHz 6.25 kHz 6.25 kHz 12.5 kHz 12.5 kHz 12.5 kHz	Modulation 4QAM 16QAM 64QAM 4QAM 16QAM 64QAM	Frequency (MHz) 929.5 929.5 929.5 929.5 929.5 929.5 929.5	mask G G G G G G G	Pass Pass Pass Pass Pass Pass	
un #2c: \$	Power setting 40 dBm	Data rate 4.8 ksps 4.8 ksps 4.8 ksps 9.6 ksps 9.6 ksps 9.6 ksps 10.0 ksps	Channel plan 6.25 kHz 6.25 kHz 6.25 kHz 12.5 kHz 12.5 kHz	Modulation 4QAM 16QAM 64QAM 4QAM 16QAM 64QAM 4QAM	Frequency (MHz) 929.5 929.5 929.5 929.5 929.5 929.5	mask G G G G G G G G	Pass Pass Pass Pass Pass Pass Pass	
ın #2c: ∶	Power setting 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm	Data rate 4.8 ksps 4.8 ksps 4.8 ksps 9.6 ksps 9.6 ksps 9.6 ksps	Channel plan 6.25 kHz 6.25 kHz 6.25 kHz 12.5 kHz 12.5 kHz 12.5 kHz 12.5 kHz	Modulation 4QAM 16QAM 64QAM 4QAM 16QAM 64QAM	Frequency (MHz) 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5	mask G G G G G G G	Pass Pass Pass Pass Pass Pass	
un #2c: \$	Power setting 40 dBm	Data rate 4.8 ksps 4.8 ksps 9.6 ksps 9.6 ksps 9.6 ksps 10.0 ksps 10.0 ksps	Channel plan 6.25 kHz 6.25 kHz 12.5 kHz 12.5 kHz 12.5 kHz 12.5 kHz 12.5 kHz 12.5 kHz	Modulation 4QAM 16QAM 64QAM 4QAM 16QAM 64QAM 4QAM 16QAM	Frequency (MHz) 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5	mask G G G G G G G G G	Pass Pass Pass Pass Pass Pass Pass Pass	
	Power setting 40 dBm 40 dBm	Data rate 4.8 ksps 4.8 ksps 9.6 ksps 9.6 ksps 9.6 ksps 10.0 ksps 10.0 ksps 10.0 ksps	Channel plan 6.25 kHz 6.25 kHz 12.5 kHz 12.5 kHz 12.5 kHz 12.5 kHz 12.5 kHz 12.5 kHz 12.5 kHz	Modulation 4QAM 16QAM 64QAM 4QAM 16QAM 64QAM 4QAM 16QAM	Frequency (MHz) 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5	mask G G G G G G G G G	Pass Pass Pass Pass Pass Pass Pass Pass	
	Power setting 40 dBm 40 dBm	Data rate 4.8 ksps 4.8 ksps 9.6 ksps 9.6 ksps 9.6 ksps 10.0 ksps 10.0 ksps 10.0 ksps	Channel plan 6.25 kHz 6.25 kHz 12.5 kHz 12.5 kHz 12.5 kHz 12.5 kHz 12.5 kHz 12.5 kHz 12.5 kHz	Modulation 4QAM 16QAM 64QAM 4QAM 64QAM 4QAM 16QAM 16QAM 64QAM	Frequency (MHz) 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5	mask G G G G G G G G G	Pass Pass Pass Pass Pass Pass Pass Pass	
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	Power setting 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm 5pectral Mas Power	Data rate 4.8 ksps 4.8 ksps 9.6 ksps 9.6 ksps 9.6 ksps 10.0 ksps 10.0 ksps 10.0 ksps 10.0 ksps sk at 932 - 94 Data rate	Channel plan 6.25 kHz 6.25 kHz 12.5 kHz	Modulation 4QAM 16QAM 64QAM 16QAM 64QAM 16QAM 16QAM 64QAM 64QAM	Frequency (MHz) 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5	mask G G G G G G G G G Emission	Pass Pass Pass Pass Pass Pass Pass Pass	
	Power setting 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm 5pectral Mas Power setting	Data rate 4.8 ksps 4.8 ksps 9.6 ksps 9.6 ksps 9.6 ksps 10.0 ksps 10.0 ksps 10.0 ksps 10.0 ksps 20.0 ksps 10.0 ksps 10.0 ksps 10.0 ksps 10.0 ksps 10.0 ksps 10.0 ksps	Channel plan 6.25 kHz 6.25 kHz 12.5 kHz	Modulation 4QAM 16QAM 64QAM 4QAM 64QAM 4QAM 16QAM 64QAM 53 MHz banc Modulation	Frequency (MHz) 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 Frequency (MHz)	mask G G G G G G G G G Emission mask	Pass Pass Pass Pass Pass Pass Pass Pass	
	Power setting 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm 5pectral Mas Power setting 40 dBm	Data rate 4.8 ksps 4.8 ksps 9.6 ksps 9.6 ksps 9.6 ksps 10.0 ksps 10.0 ksps 10.0 ksps 10.0 ksps x at 932 - 94 Data rate 9.6 ksps 9.6 ksps	Channel plan 6.25 kHz 6.25 kHz 12.5 kHz Channel plan 12.5 kHz	Modulation 4QAM 16QAM 64QAM 16QAM 64QAM 4QAM 16QAM 53 MHz banc Modulation 4QAM	Frequency (MHz) 929.5	mask G G G G G G G G G Emission mask D	Pass Pass Pass Pass Pass Pass Pass Pass	
	Power setting 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm 5pectral Mas Power setting 40 dBm 40 dBm	Data rate 4.8 ksps 4.8 ksps 9.6 ksps 9.6 ksps 9.6 ksps 10.0 ksps 10.0 ksps 10.0 ksps 10.0 ksps x at 932 - 94 Data rate 9.6 ksps 9.6 ksps 9.6 ksps 9.6 ksps	Channel plan 6.25 kHz 6.25 kHz 12.5 kHz	Modulation 4QAM 16QAM 64QAM 16QAM 64QAM 4QAM 16QAM 53 MHz banc Modulation 4QAM 16QAM	Frequency (MHz) 929.5	mask G G G G G G G G G C C Emission mask D D	Pass Pass Pass Pass Pass Pass Pass Pass	
	Power setting 40 dBm 40 dBm	Data rate 4.8 ksps 4.8 ksps 9.6 ksps 9.6 ksps 9.6 ksps 10.0 ksps 10.0 ksps 10.0 ksps 10.0 ksps x at 932 - 94 Data rate 9.6 ksps 9.6 ksps 9.6 ksps 9.6 ksps 10.0 ksps	Channel plan 6.25 kHz 6.25 kHz 12.5 kHz	Modulation 4QAM 16QAM 4QAM 16QAM 64QAM 4QAM 16QAM 64QAM 53 MHz banc Modulation 4QAM 16QAM 16QAM 64QAM	Frequency (MHz) 929.5	mask G G G G G G G G G G Emission mask D D D D	Pass Pass Pass Pass Pass Pass Pass Pass	
	Power setting 40 dBm 40 dBm	Data rate 4.8 ksps 4.8 ksps 9.6 ksps 9.6 ksps 9.6 ksps 10.0 ksps 10.0 ksps 10.0 ksps 10.0 ksps 4.8 ksps 9.6 ksps 9.6 ksps 9.6 ksps 9.6 ksps 10.0 ksps 10.0 ksps	Channel plan 6.25 kHz 6.25 kHz 12.5 kHz	Modulation 4QAM 16QAM 64QAM 4QAM 64QAM 4QAM 16QAM 64QAM 53 MHz banc Modulation 4QAM 16QAM 16QAM 64QAM 4QAM	Frequency (MHz) 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.4 944 944 944	mask G G G G G G G G G G C G Emission mask D D D D D	Pass Pass Pass Pass Pass Pass Pass Pass	
	Power setting 40 dBm 40 dBm	Data rate 4.8 ksps 4.8 ksps 9.6 ksps 9.6 ksps 9.6 ksps 10.0 ksps 10.0 ksps 10.0 ksps 10.0 ksps 4.8 dt 932 - 94 Data rate 9.6 ksps 9.6 ksps 9.6 ksps 9.6 ksps 10.0 ksps 10.0 ksps 10.0 ksps	Channel plan 6.25 kHz 6.25 kHz 12.5 kHz	Modulation 4QAM 16QAM 64QAM 4QAM 16QAM 4QAM 16QAM 64QAM 64QAM 16QAM 16QAM 64QAM 4QAM 16QAM 64QAM	Frequency (MHz) 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.4 944 944 944 944 944	mask G G G G G G G G G G G C C C D D D D D D	Pass Pass Pass Pass Pass Pass Pass Pass	
	Power setting 40 dBm 40 dBm	Data rate 4.8 ksps 4.8 ksps 9.6 ksps 9.6 ksps 9.6 ksps 10.0 ksps 10.0 ksps 10.0 ksps 10.0 ksps 4.8 ksps 9.6 ksps 9.6 ksps 9.6 ksps 9.6 ksps 10.0 ksps 10.0 ksps	Channel plan 6.25 kHz 6.25 kHz 12.5 kHz	Modulation 4QAM 16QAM 64QAM 4QAM 4QAM 4QAM 4QAM 16QAM 64QAM 53 MHz banc Modulation 4QAM 16QAM 64QAM 4QAM 16QAM	Frequency (MHz) 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.5 929.4 944 944 944 944 944 944	mask G G G G G G G G G G G C C D D D D D D D	Pass Pass Pass Pass Pass Pass Pass Pass	

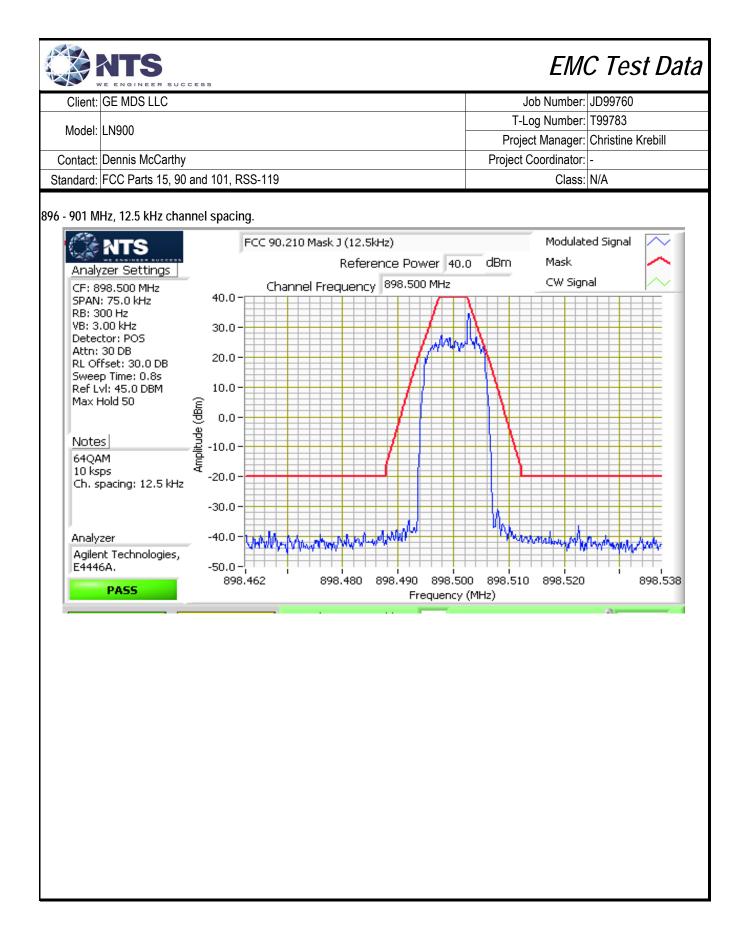


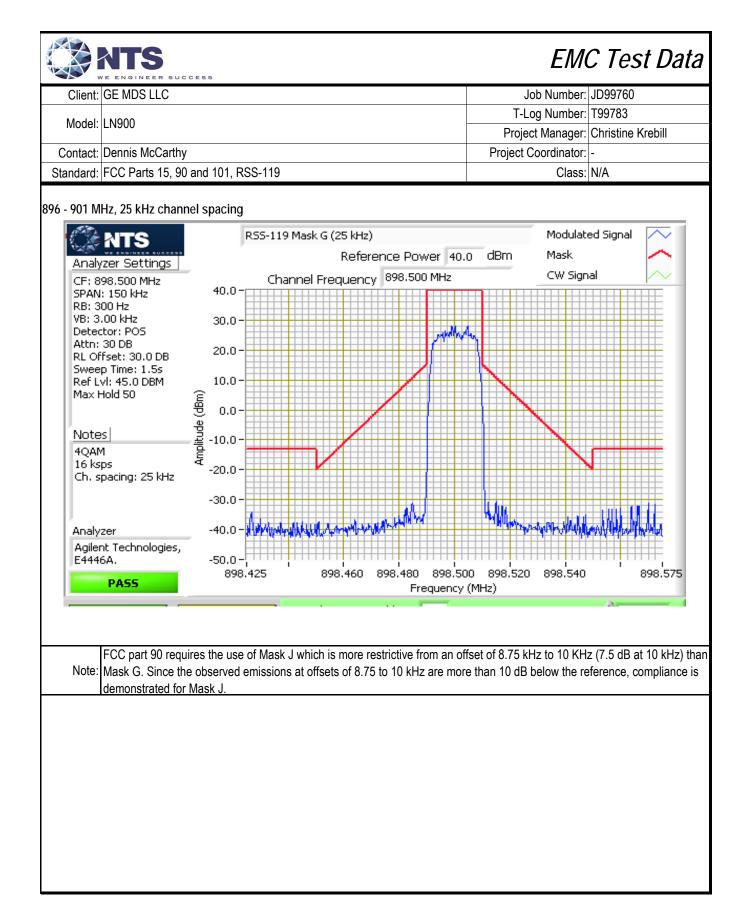


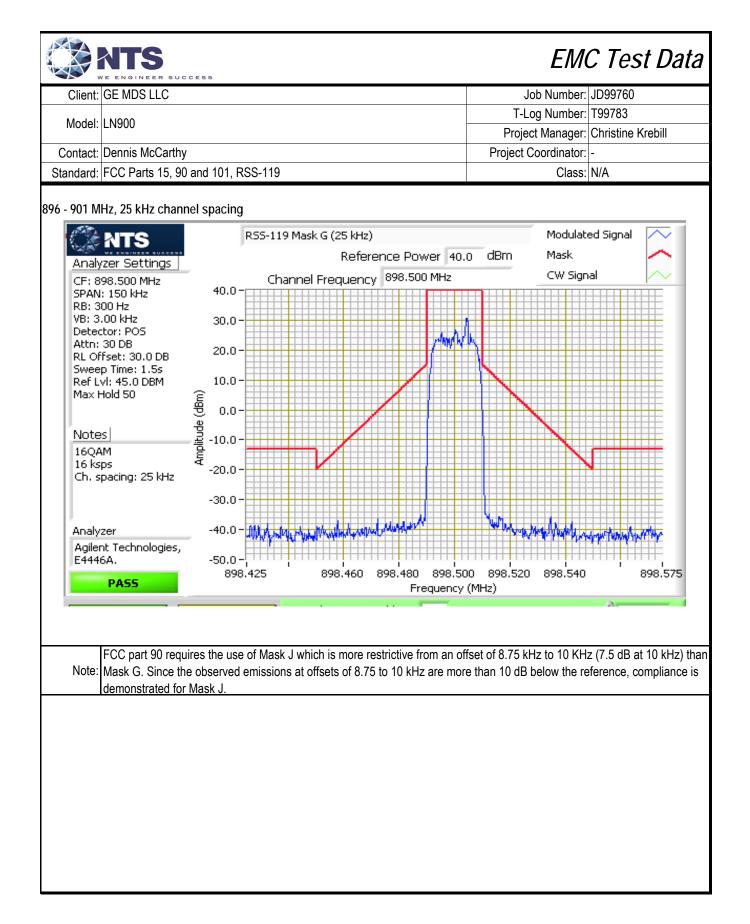


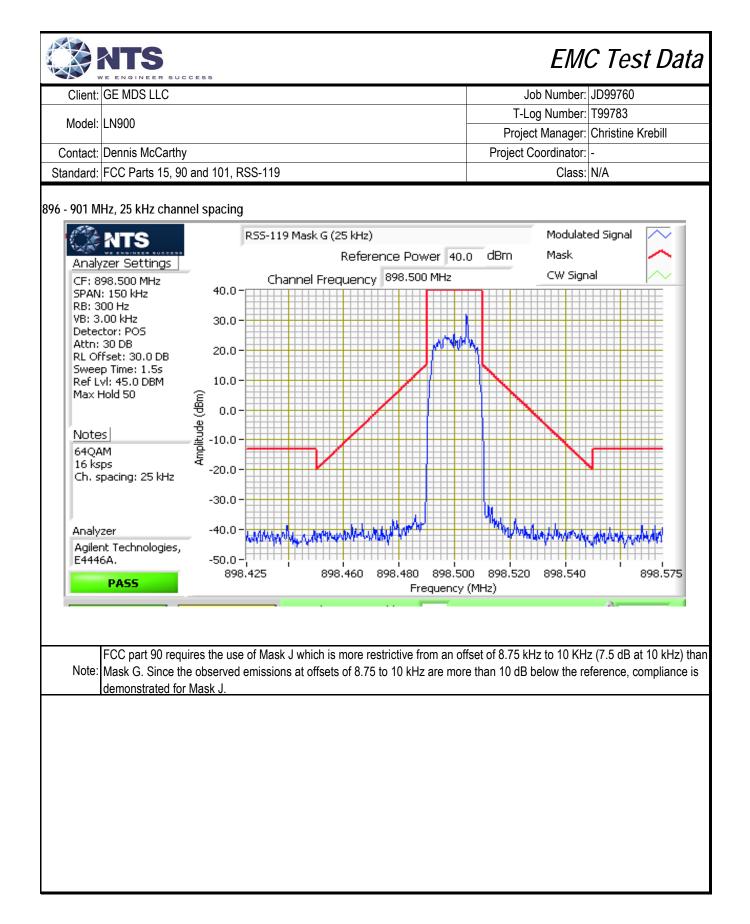


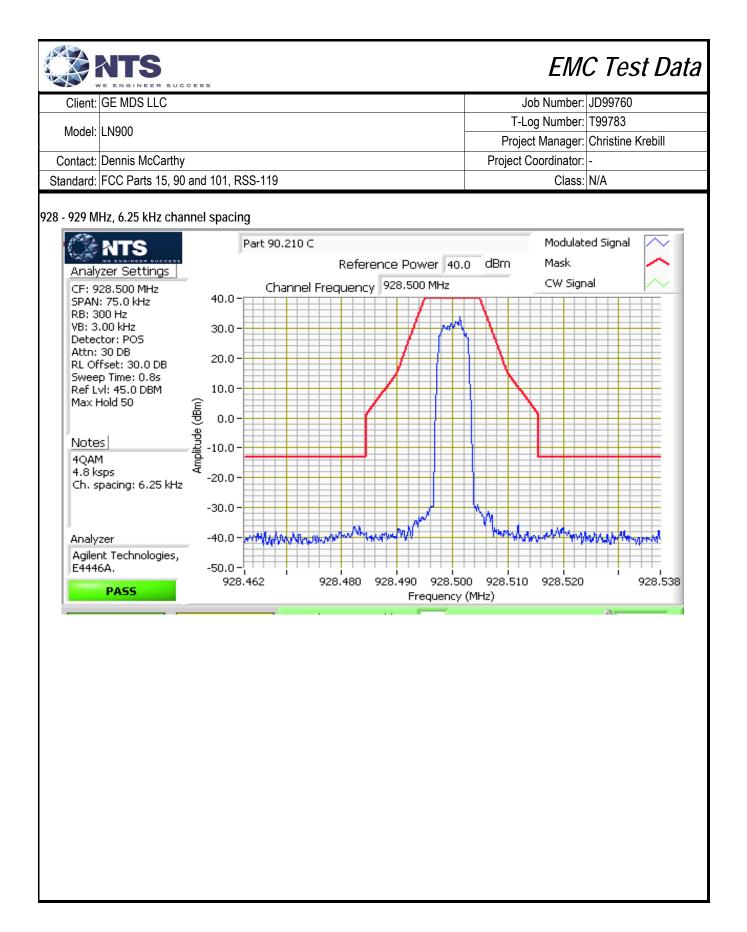


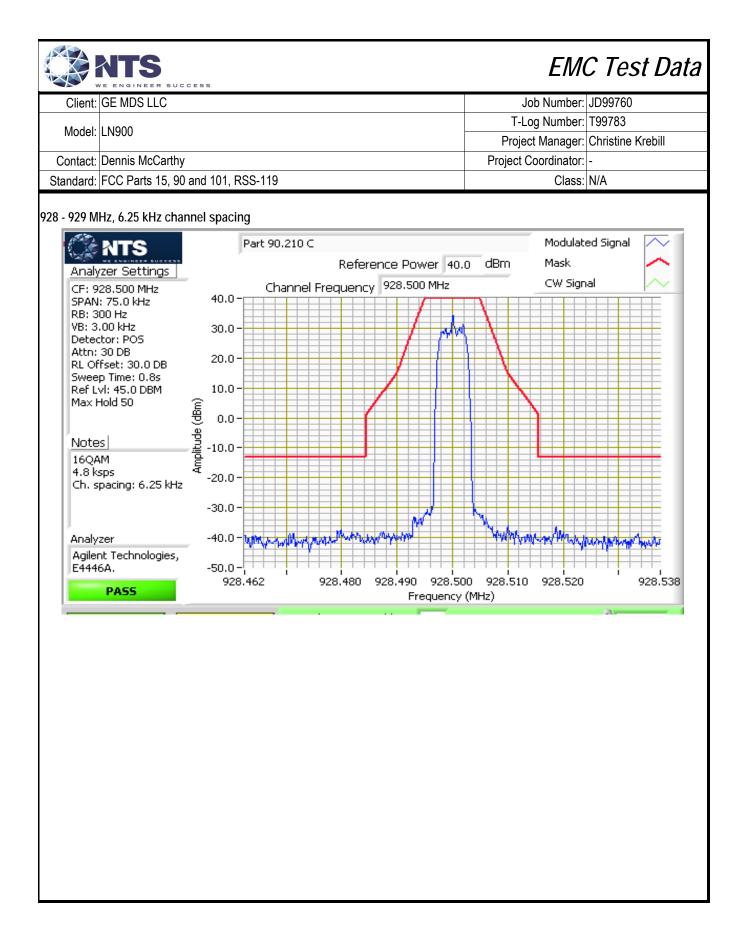


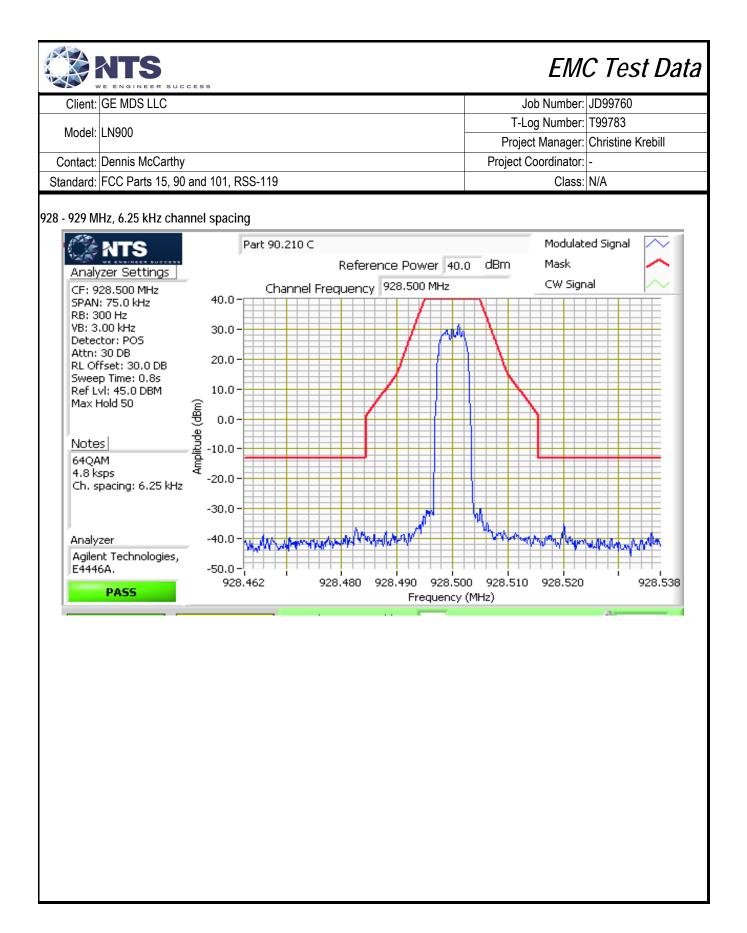


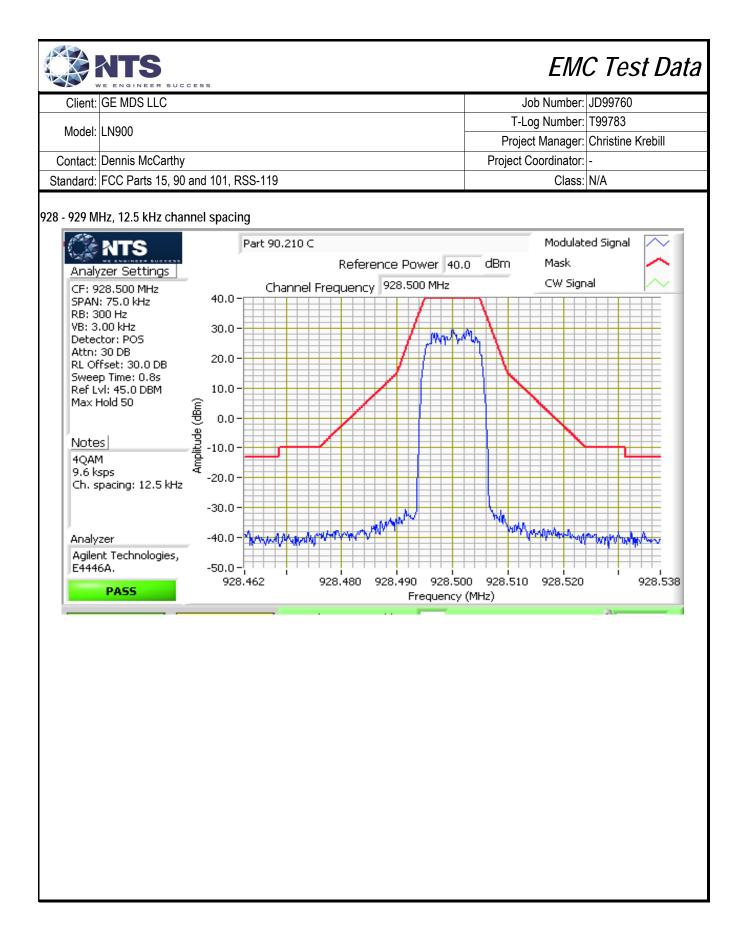


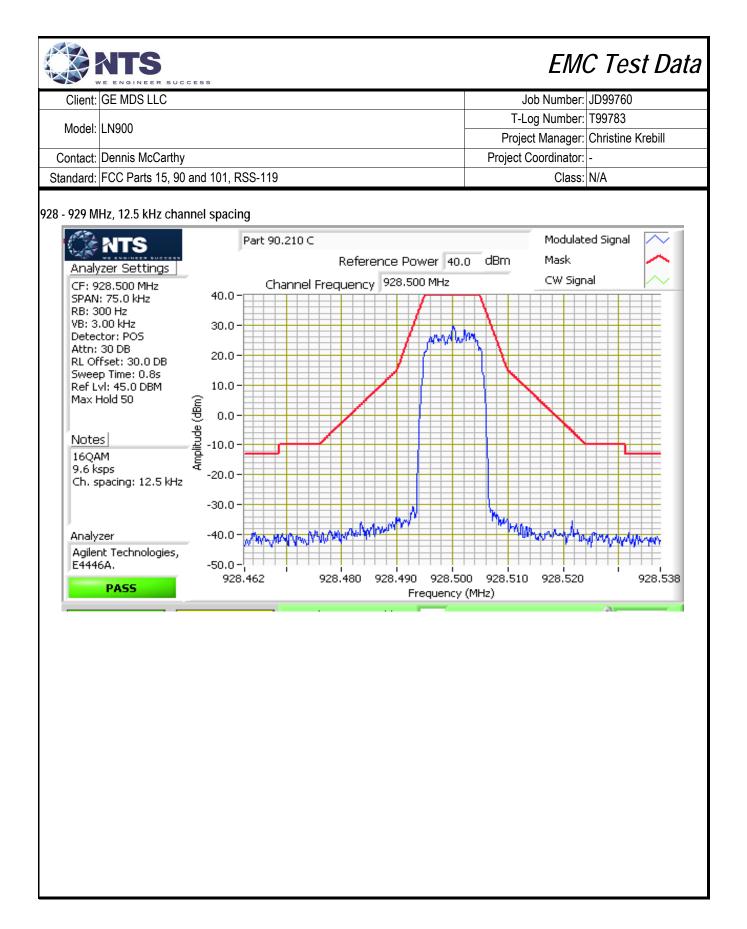


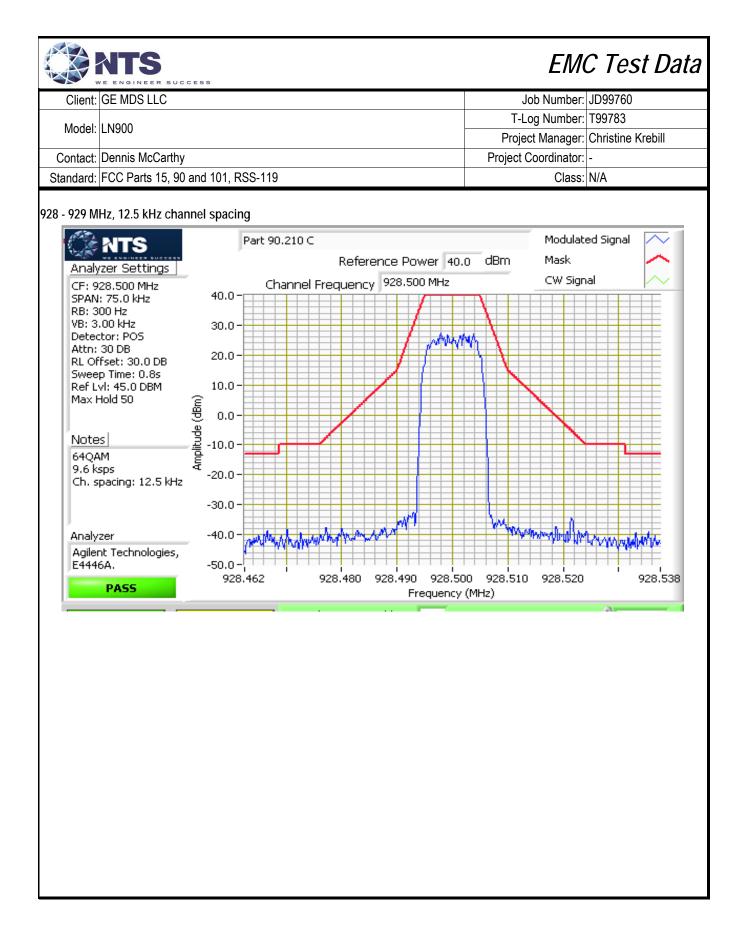


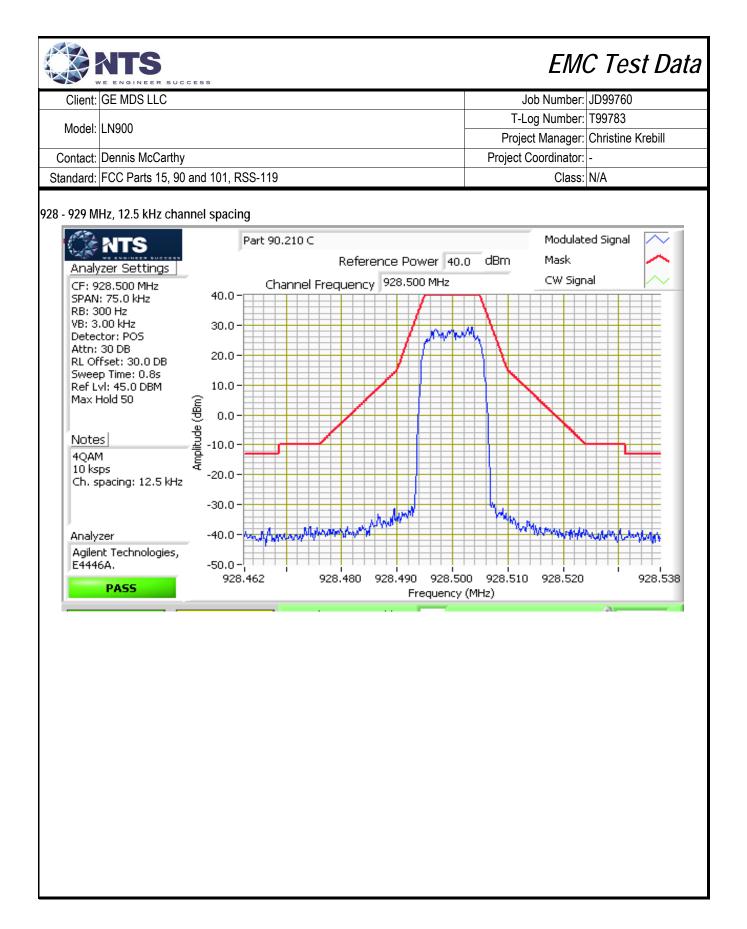


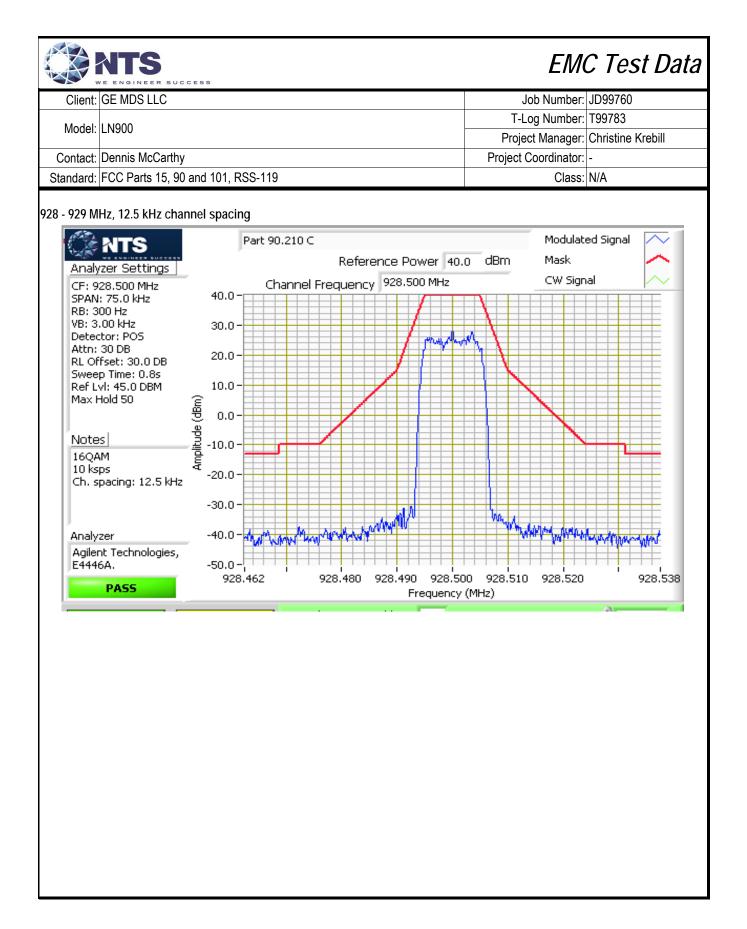


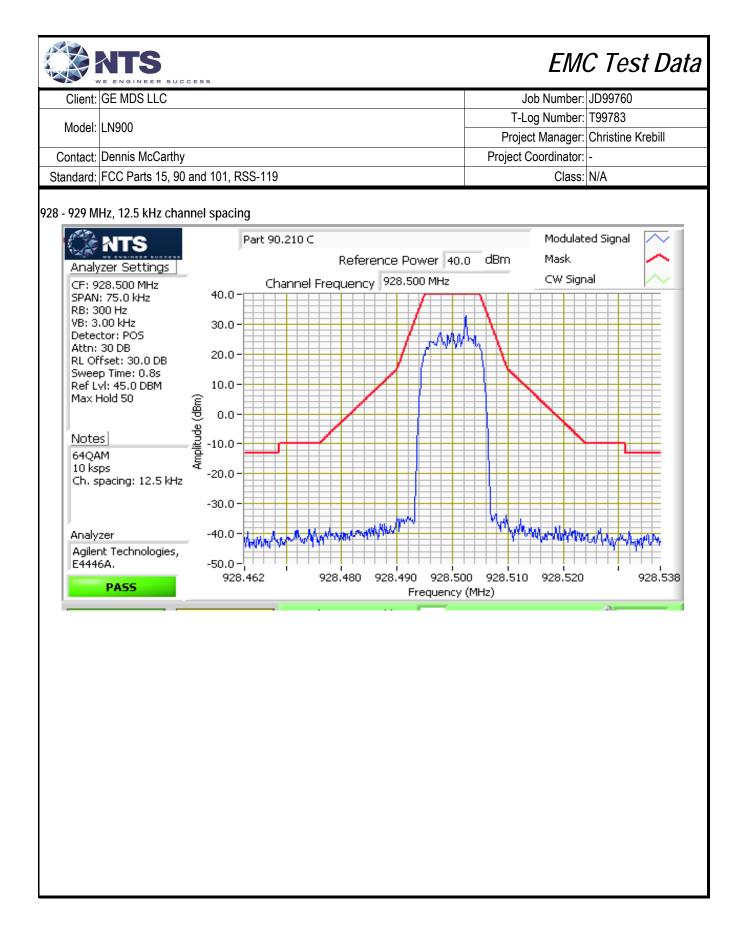


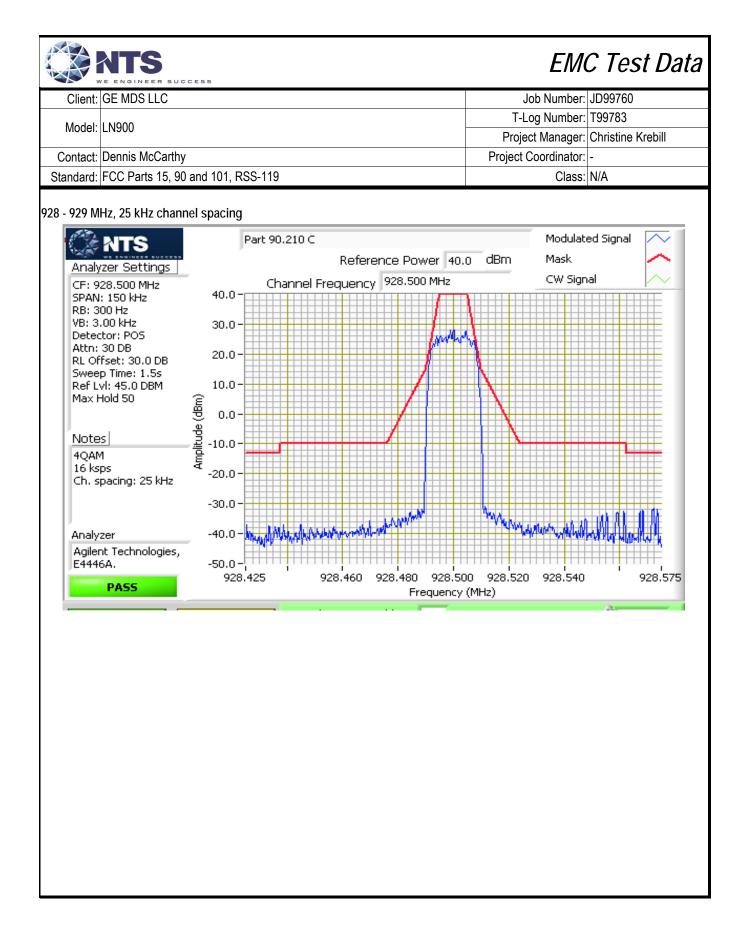


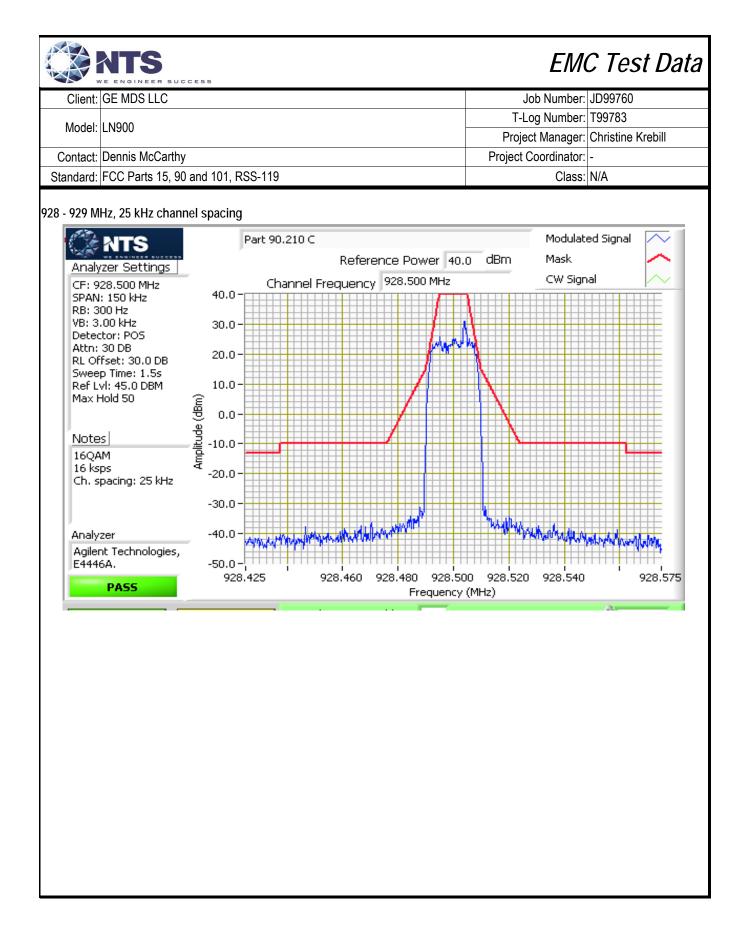


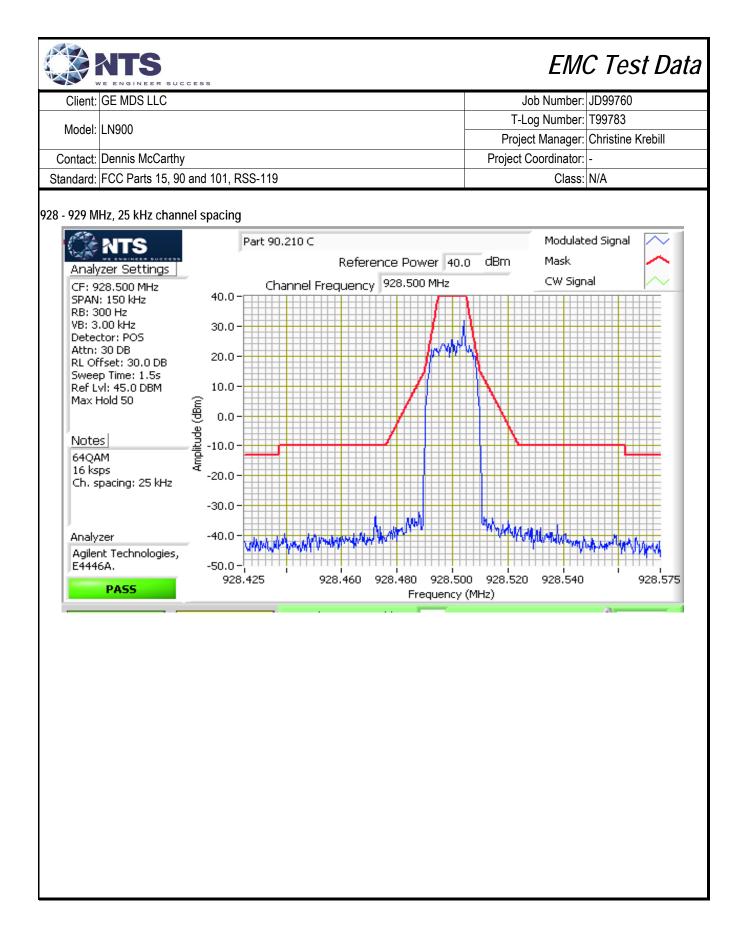


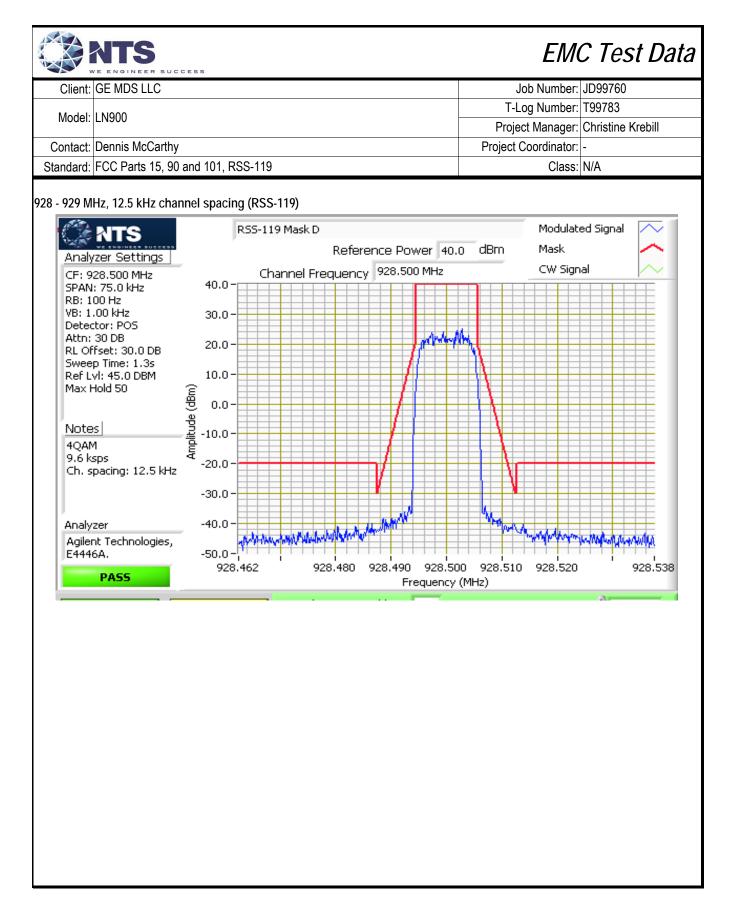


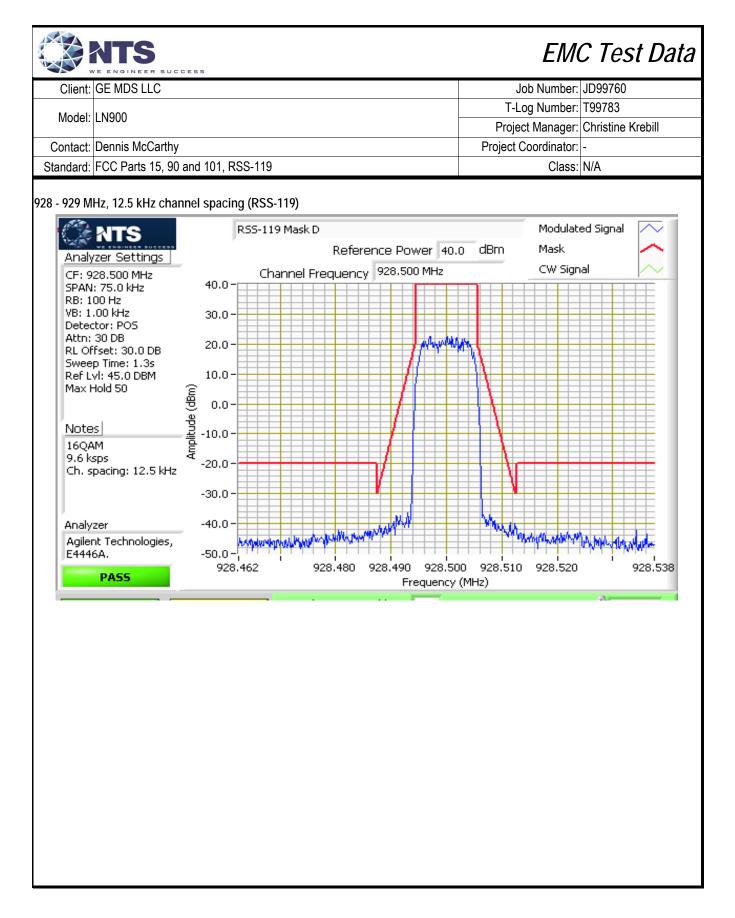


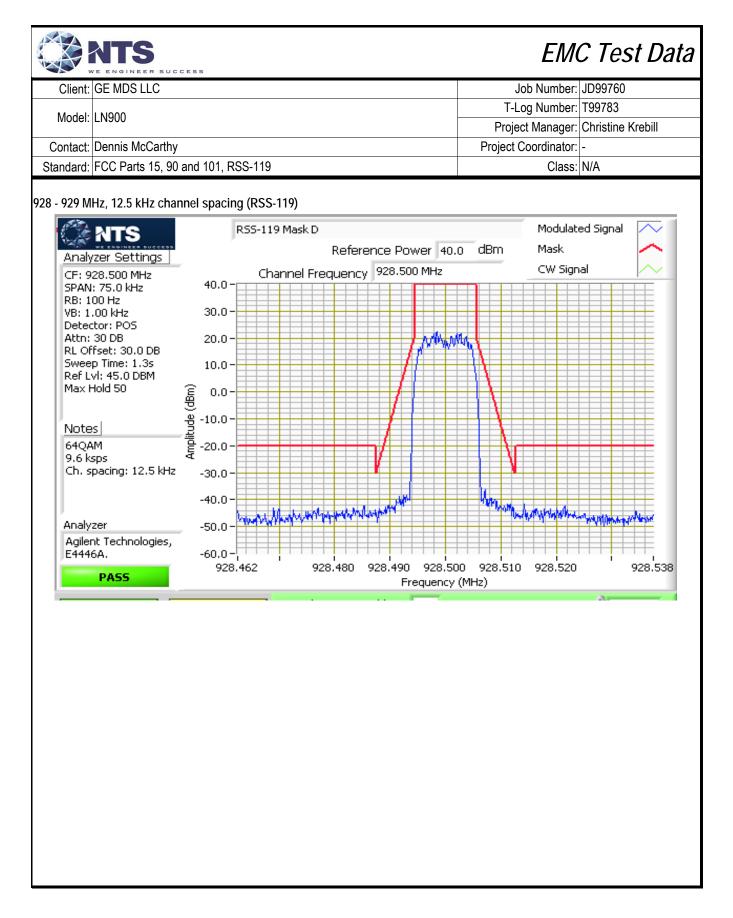


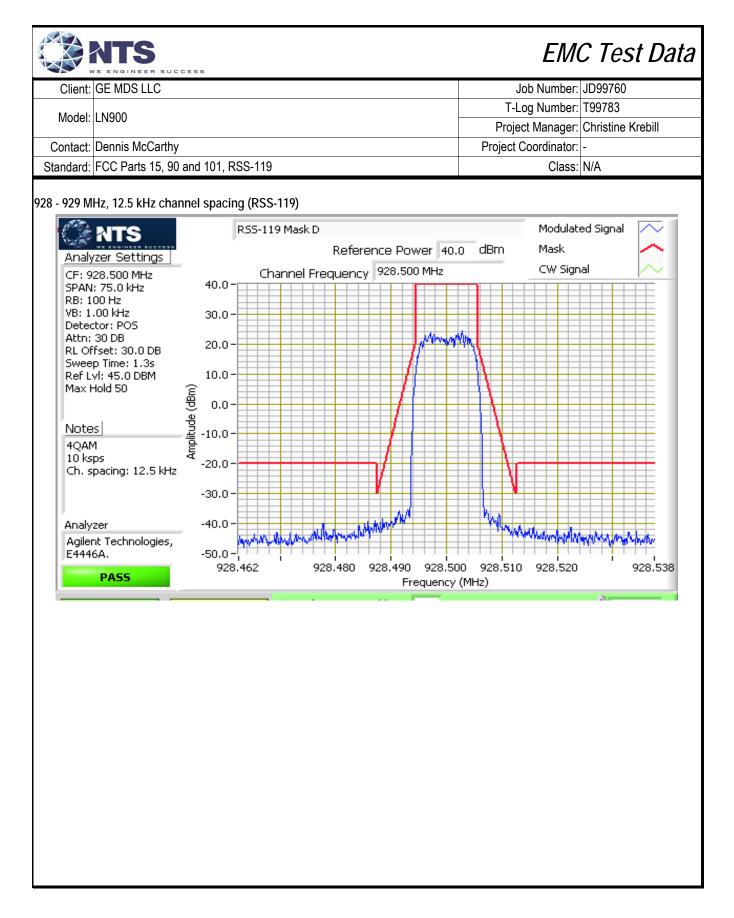


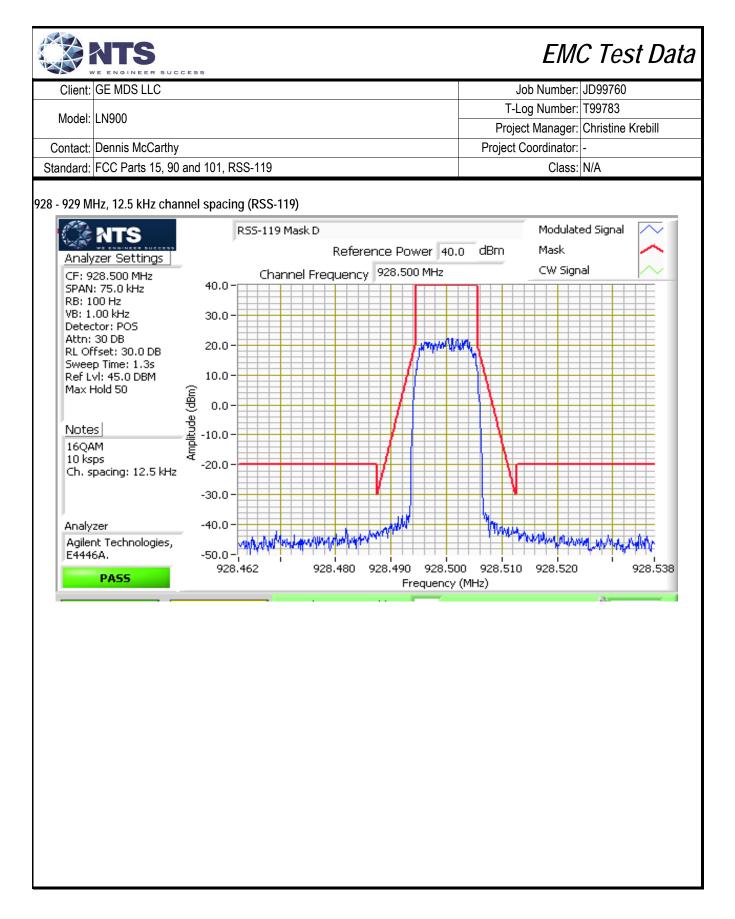


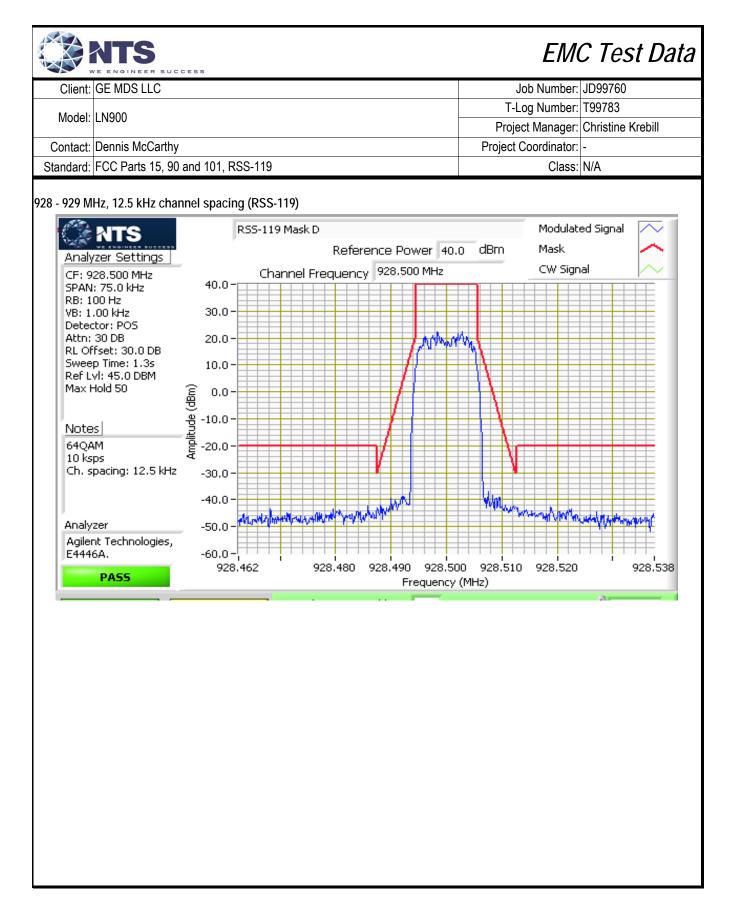


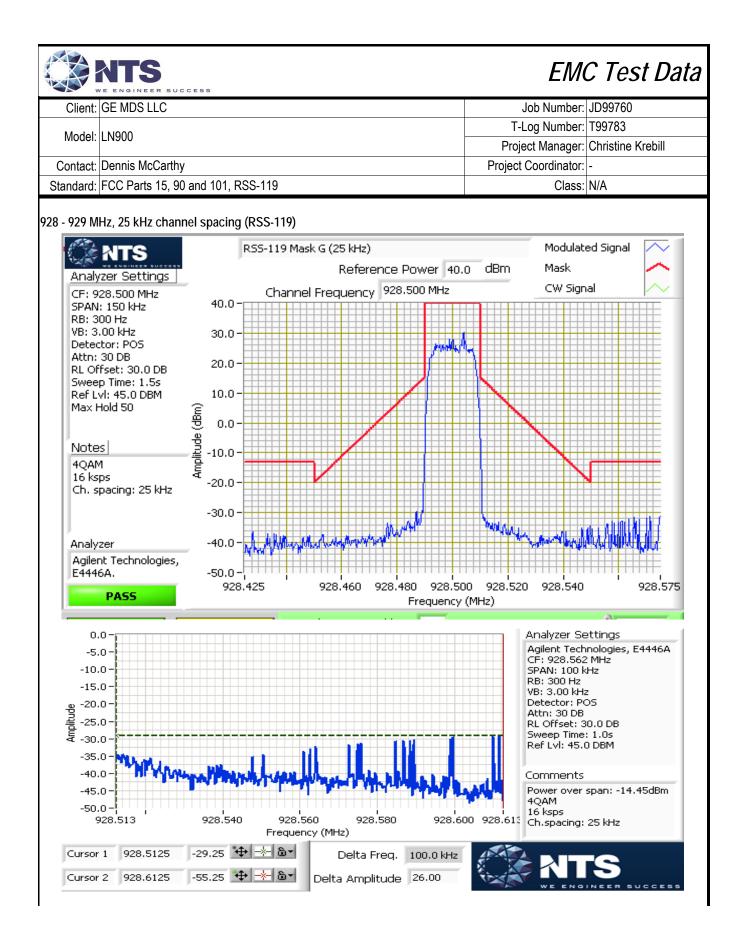


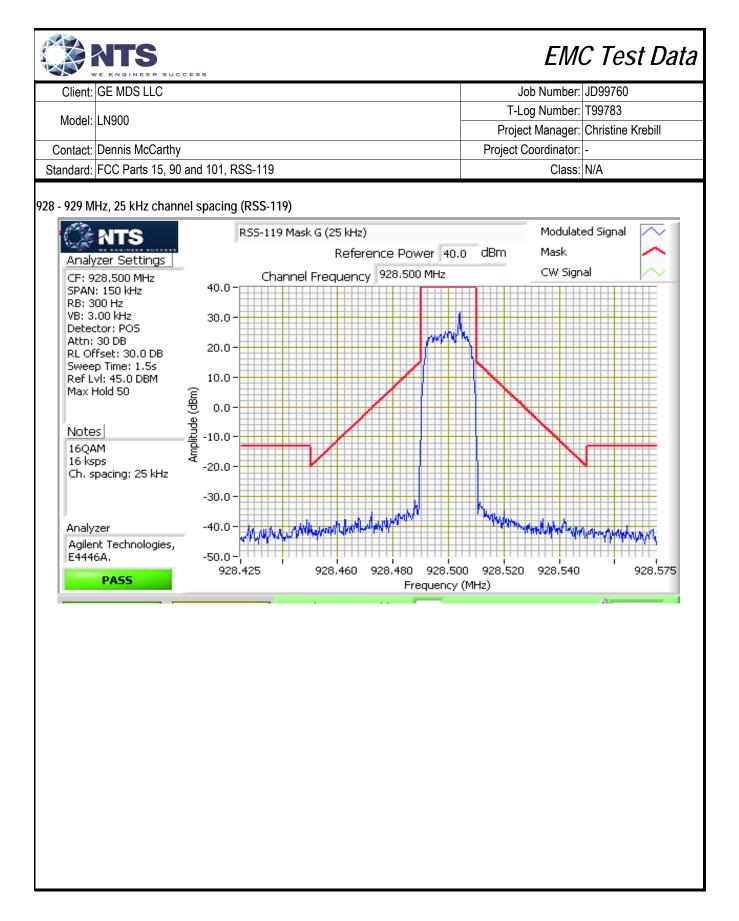


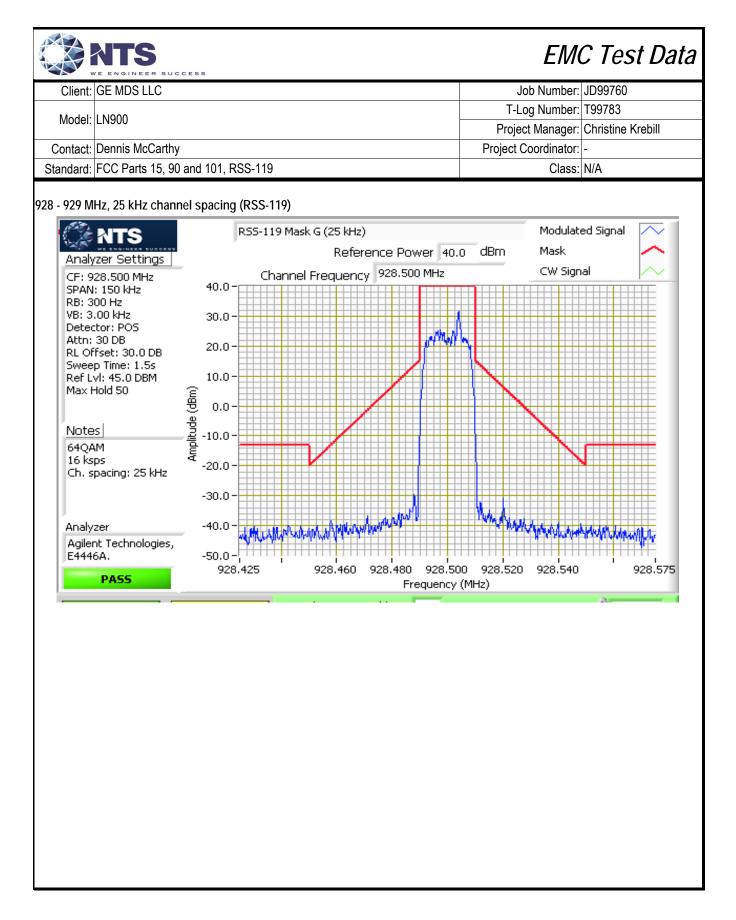


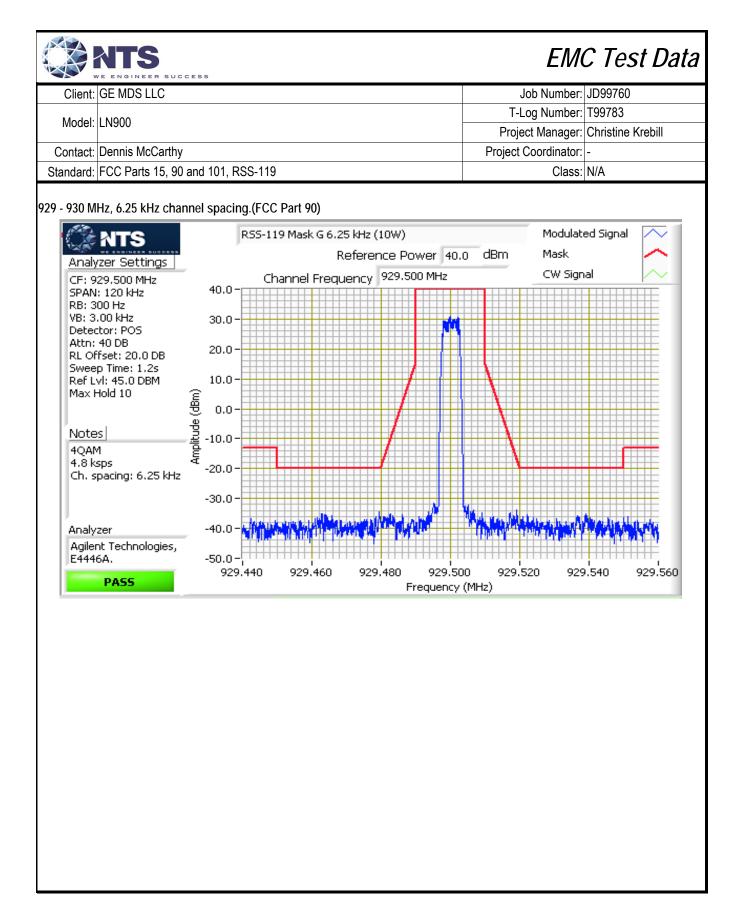


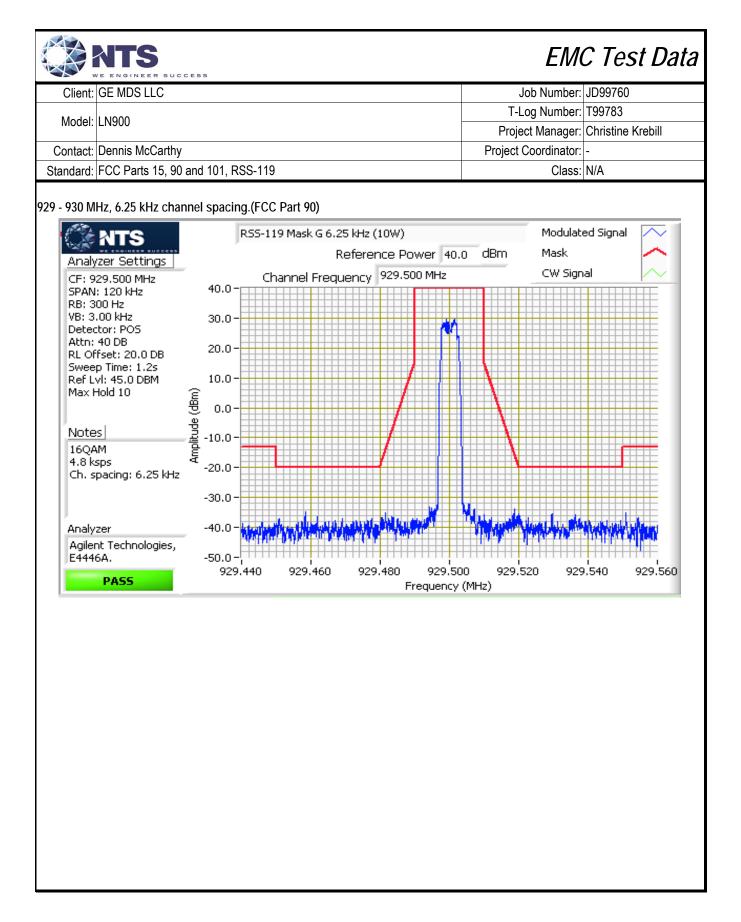


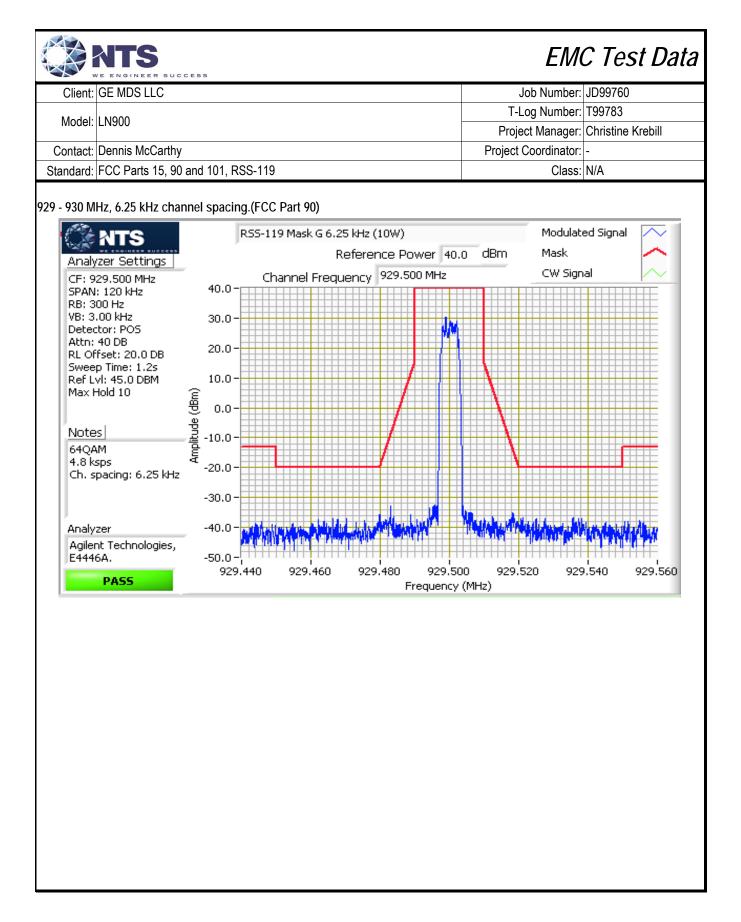


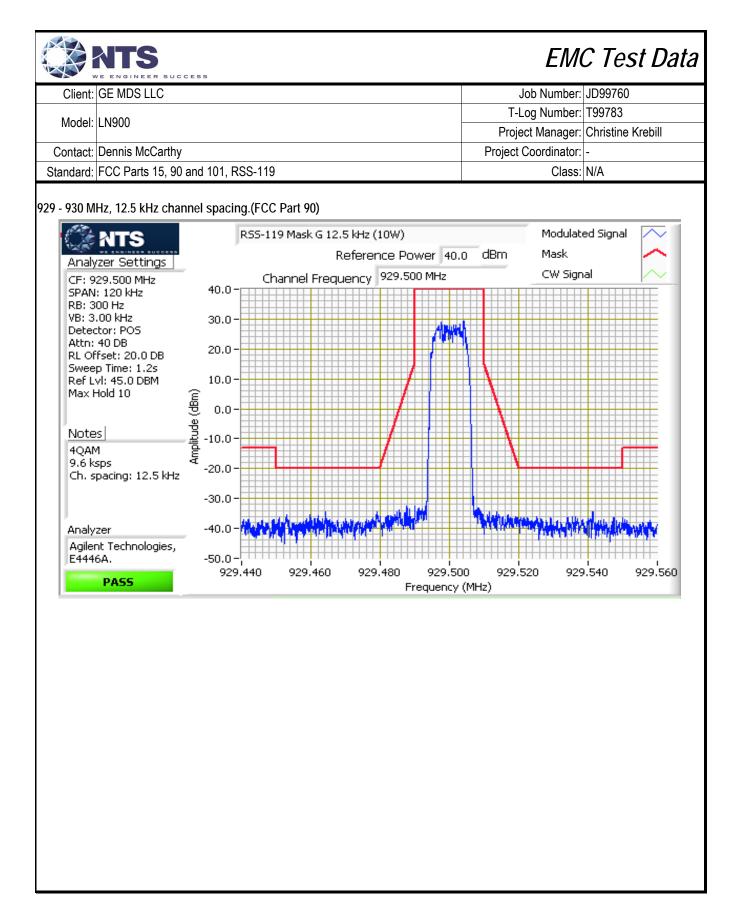


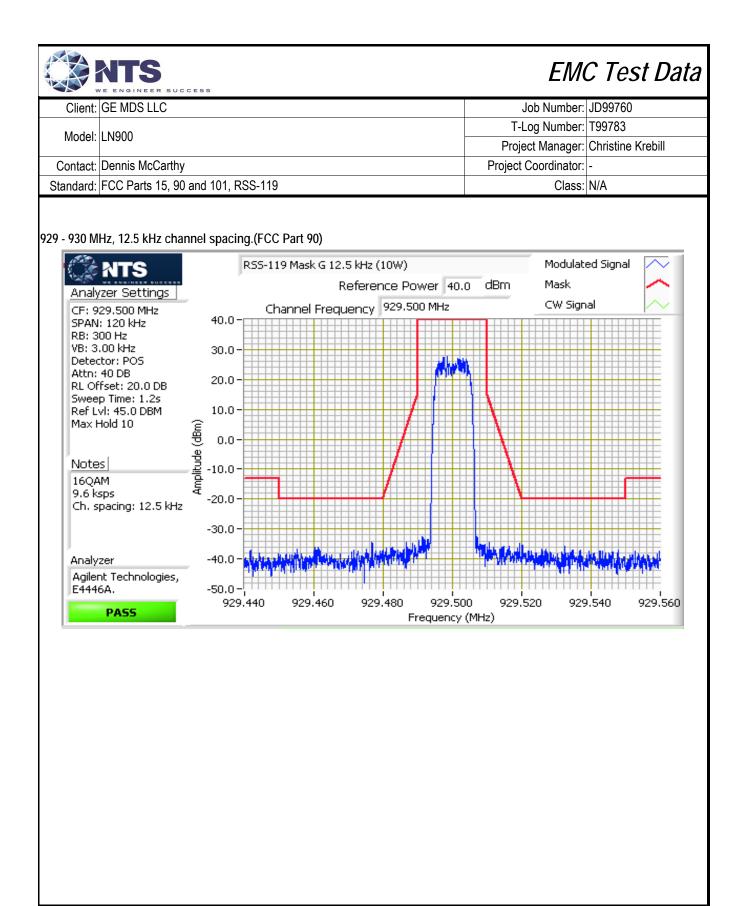


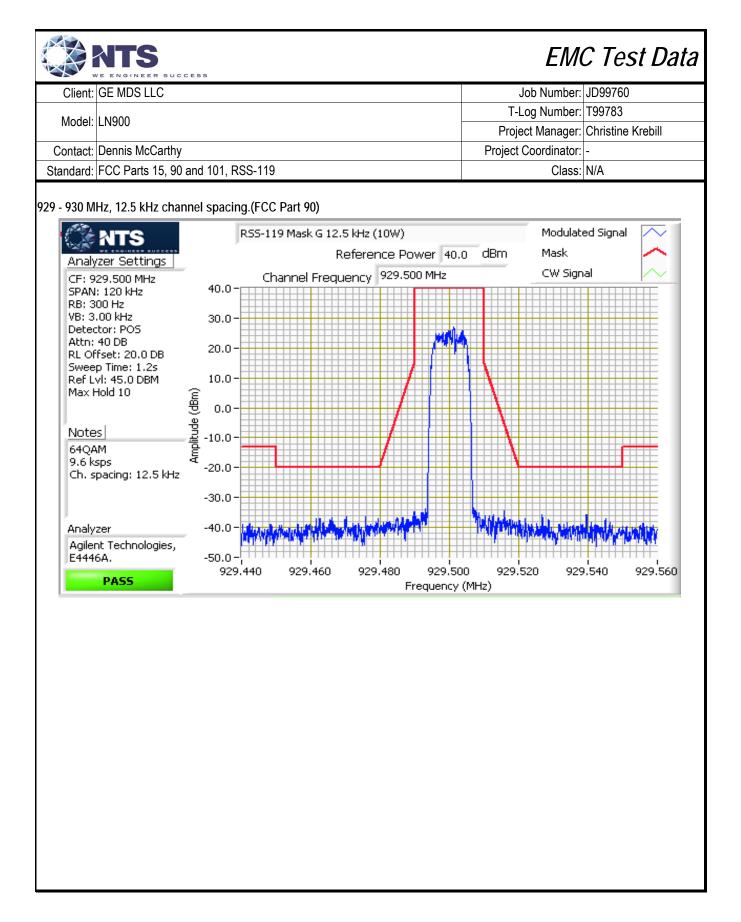


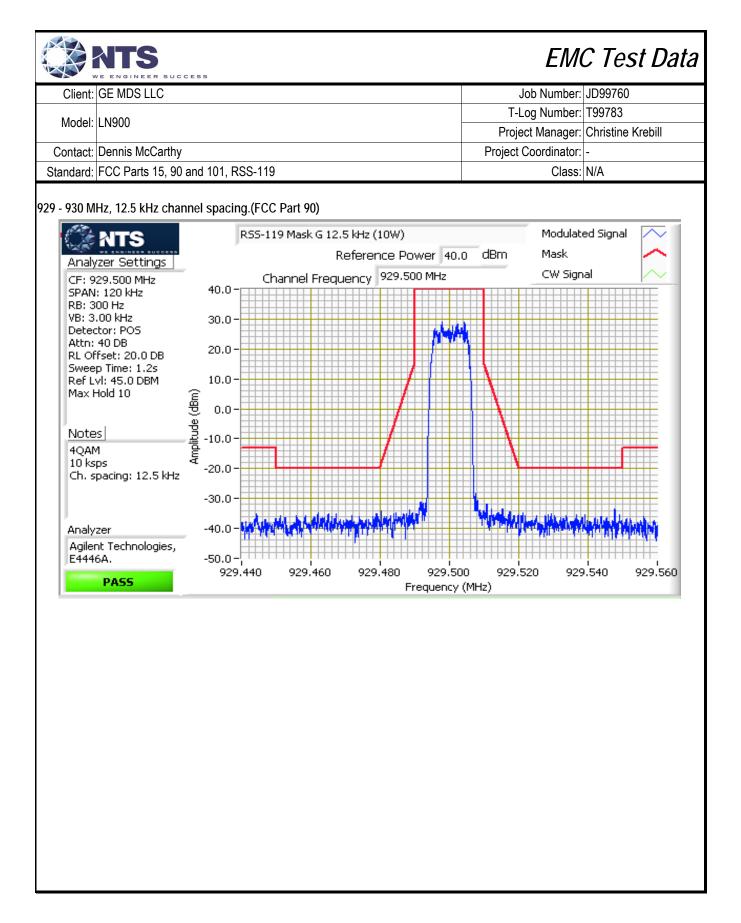


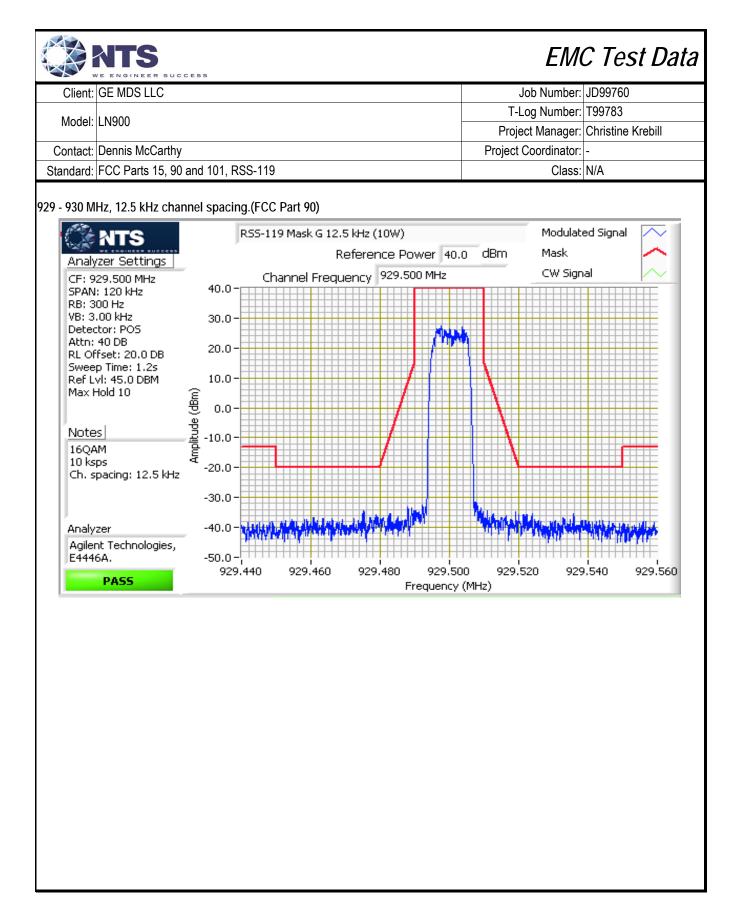


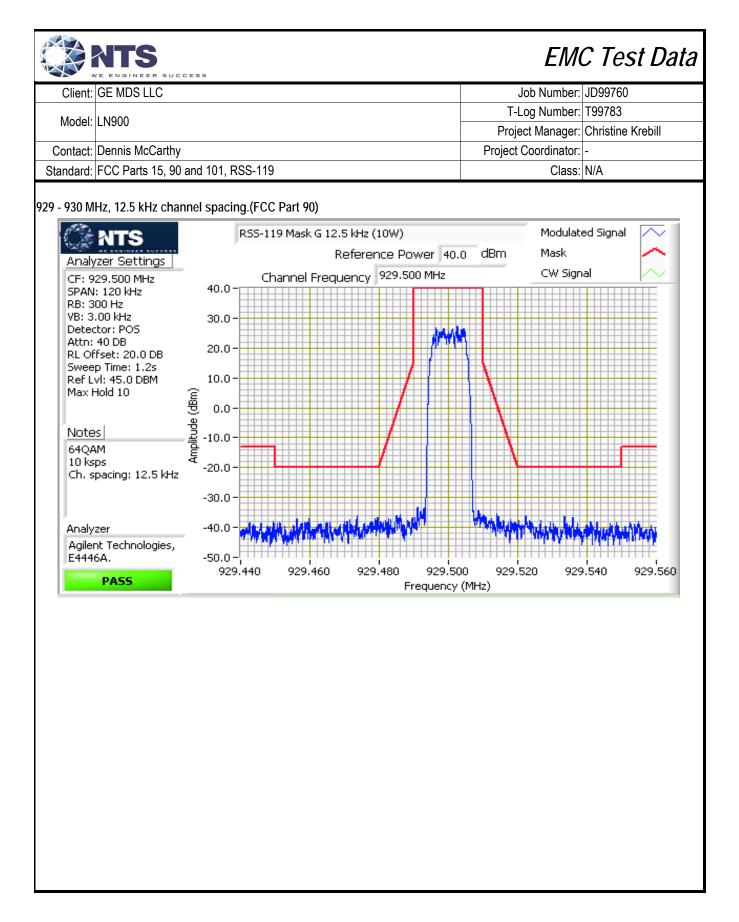




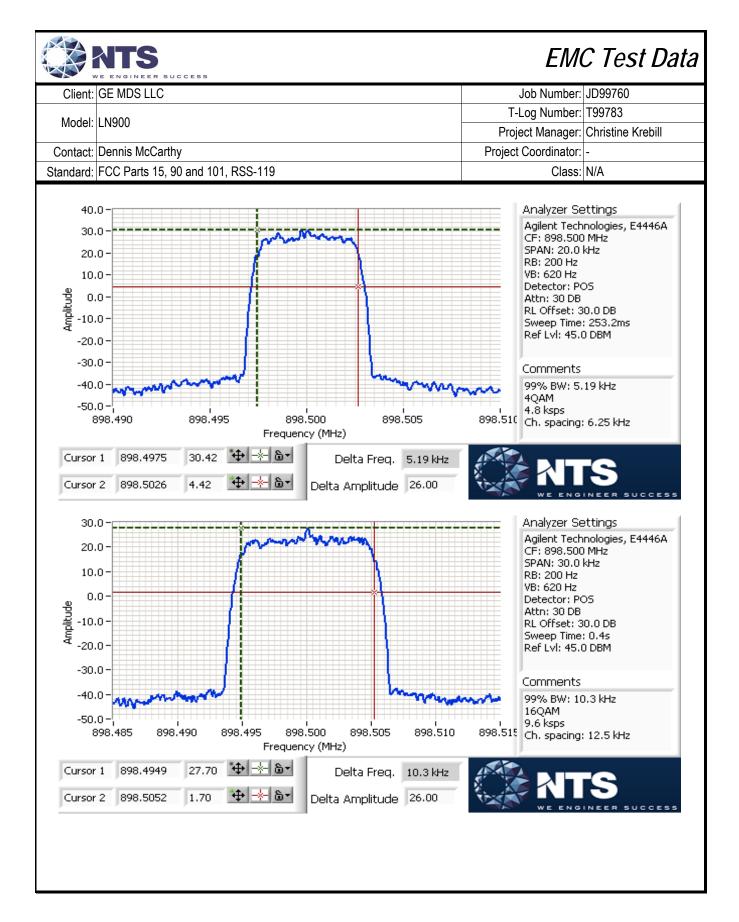


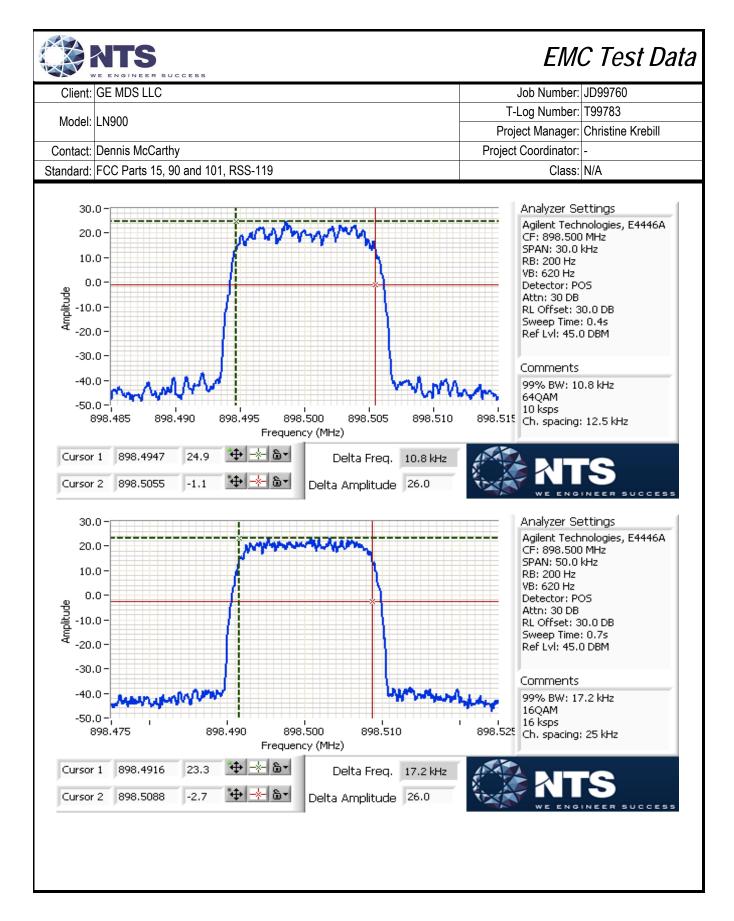




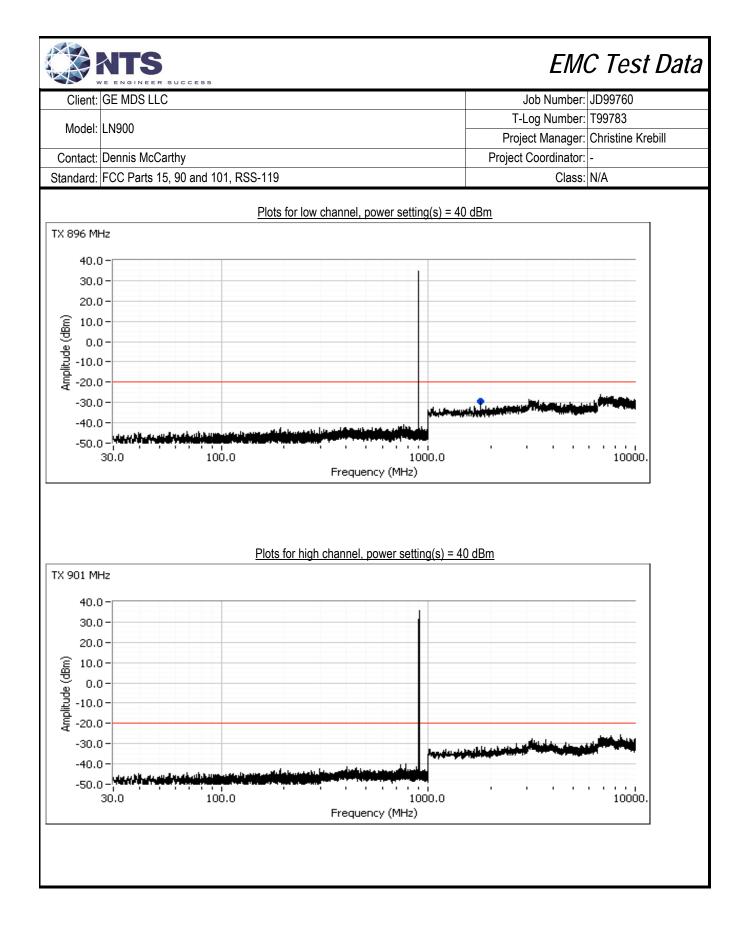


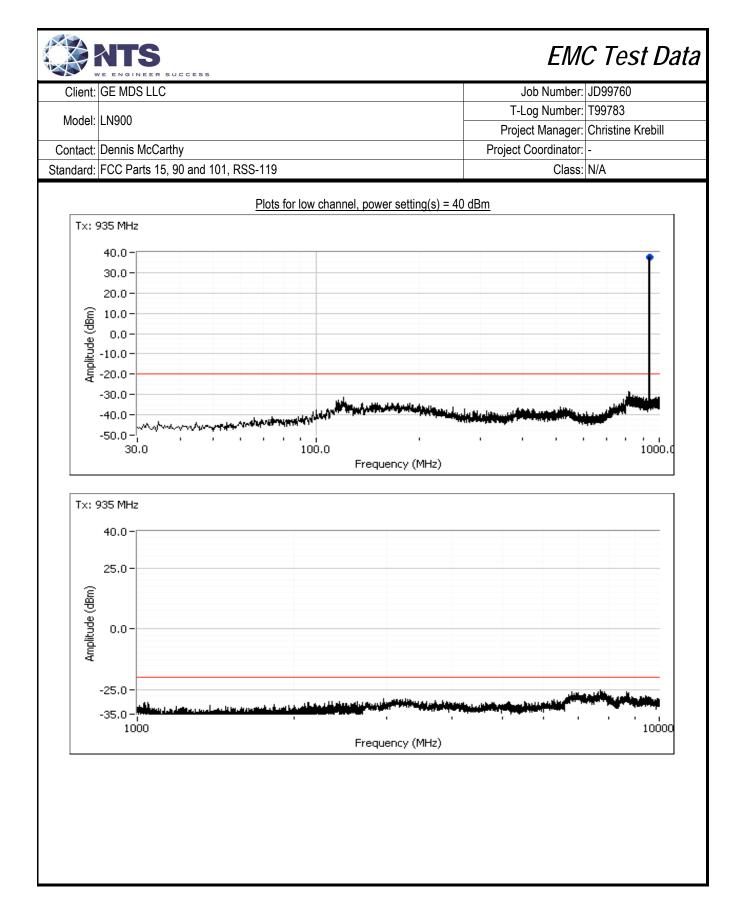
Standard: FCC Parts 15, 90 and 101, RSS-119 Class: N/A
Project Manager: Christine IContact:Dennis McCarthyProject Coordinator:-tandard:FCC Parts 15, 90 and 101, RSS-119Class:N/An #3:Signal Bandwidth Date of Test:10/27/2015 Deniz DemirciConfig. Used:1Test Engineer:Deniz Demirci Deniz DemirciConfig Change:None EUT Voltage:13.8 VDCPowerData rateChannel planModulation ModulationFrequency (MHz)Resolution BandwidthBandwidth (kHz) 99%40 dBm4.8 ksps6.25 kHz4QAM898.5200 Hz5.1940 dBm4.8 ksps6.25 kHz6QAM898.5200 Hz5.1940 dBm4.8 ksps6.25 kHz4QAM898.5200 Hz5.1940 dBm9.6 ksps12.5 kHz4QAM898.5200 Hz5.1940 dBm9.6 ksps12.5 kHz4QAM898.5200 Hz5.19
Standard: FCC Parts 15, 90 and 101, RSS-119 Class: N/A un #3: Signal Bandwidth Date of Test: 10/27/2015 Config. Used: 1 Test Engineer: Deniz Demirci Config Change: None Test Location: FT Lab #6 EUT Voltage: 13.8 VDC Power Data Channel plan Modulation Frequency (MHz) Resolution Bandwidth Bandwidth (kHz) 40 dBm 4.8 ksps 6.25 kHz 4QAM 898.5 200 Hz 5.19 40 dBm 4.8 ksps 6.25 kHz 16QAM 898.5 200 Hz 5.19 40 dBm 4.8 ksps 6.25 kHz 4QAM 898.5 200 Hz 5.19 40 dBm 9.6 ksps 12.5 kHz 4QAM 898.5 200 Hz 5.19
In #3: Signal Bandwidth Date of Test: 10/27/2015 Config. Used: 1 Test Engineer: Deniz Demirci Config Change: None Test Location: FT Lab #6 EUT Voltage: 13.8 VDC Power Data Channel Modulation Frequency (MHz) Resolution Bandwidth (kHz) Bandwidth 99% 40 dBm 4.8 ksps 6.25 kHz 4QAM 898.5 200 Hz 5.19 40 dBm 4.8 ksps 6.25 kHz 16QAM 898.5 200 Hz 5.19 40 dBm 4.8 ksps 6.25 kHz 64QAM 898.5 200 Hz 5.19 40 dBm 4.8 ksps 12.5 kHz 4QAM 898.5 200 Hz 5.19
In #3: Signal Bandwidth Date of Test: 10/27/2015 Config. Used: 1 Test Engineer: Deniz Demirci Config Change: None Test Location: FT Lab #6 EUT Voltage: 13.8 VDC Power Data Channel Modulation Frequency (MHz) Resolution Bandwidth (kHz) Bandwidth 99% 40 dBm 4.8 ksps 6.25 kHz 4QAM 898.5 200 Hz 5.19 40 dBm 4.8 ksps 6.25 kHz 16QAM 898.5 200 Hz 5.19 40 dBm 4.8 ksps 6.25 kHz 64QAM 898.5 200 Hz 5.19 40 dBm 4.8 ksps 12.5 kHz 4QAM 898.5 200 Hz 5.19
Date of Test: 10/27/2015Config. Used: 1Test Engineer: Deniz DemirciConfig Change: NoneTest Location: FT Lab #6EUT Voltage: 13.8 VDCPowerDataChannelModulationFrequency (MHz)ResolutionBandwidthBandwidth (kHz)settingrateplanPower0.25 kHz4QAM898.5200 Hz5.1940 dBm4.8 ksps6.25 kHz16QAM898.5200 Hz5.1940 dBm4.8 ksps6.25 kHz64QAM898.5200 Hz5.1940 dBm9.6 ksps12.5 kHz4QAM898.5200 Hz5.1940 dBm9.6 ksps12.5 kHz4QAM898.5200 Hz10.3
Test Engineer: Deniz Demirci Test Location: FT Lab #6Config Change: None EUT Voltage: 13.8 VDCPowerData rateChannel planModulation PowerFrequency (MHz)Resolution BandwidthBandwidth (kHz) 99%40 dBm4.8 ksps6.25 kHz4QAM898.5200 Hz5.1940 dBm4.8 ksps6.25 kHz16QAM898.5200 Hz5.1940 dBm4.8 ksps6.25 kHz16QAM898.5200 Hz5.1940 dBm4.8 ksps6.25 kHz64QAM898.5200 Hz5.1940 dBm9.6 ksps12.5 kHz4QAM898.5200 Hz10.3
Test Location: FT Lab #6 EUT Voltage: 13.8 VDC Power Data Channel Modulation Frequency (MHz) Resolution Bandwidth (kHz) setting rate plan Frequency (MHz) Resolution Bandwidth 99% 40 dBm 4.8 ksps 6.25 kHz 4QAM 898.5 200 Hz 5.19 40 dBm 4.8 ksps 6.25 kHz 16QAM 898.5 200 Hz 5.19 40 dBm 4.8 ksps 6.25 kHz 64QAM 898.5 200 Hz 5.19 40 dBm 9.6 ksps 12.5 kHz 4QAM 898.5 200 Hz 5.19
Power settingData rateChannel planModulation ModulationFrequency (MHz)Resolution BandwidthBandwidth (kHz) 99%40 dBm4.8 ksps6.25 kHz4QAM898.5200 Hz5.1940 dBm4.8 ksps6.25 kHz16QAM898.5200 Hz5.1940 dBm4.8 ksps6.25 kHz64QAM898.5200 Hz5.1940 dBm4.8 ksps6.25 kHz64QAM898.5200 Hz5.1940 dBm9.6 ksps12.5 kHz4QAM898.5200 Hz10.3
setting rate plan Frequency (MHZ) Bandwidth 99% 40 dBm 4.8 ksps 6.25 kHz 4QAM 898.5 200 Hz 5.19 40 dBm 4.8 ksps 6.25 kHz 16QAM 898.5 200 Hz 5.19 40 dBm 4.8 ksps 6.25 kHz 16QAM 898.5 200 Hz 5.19 40 dBm 4.8 ksps 6.25 kHz 64QAM 898.5 200 Hz 5.19 40 dBm 9.6 ksps 12.5 kHz 4QAM 898.5 200 Hz 5.19
setting rate plan Frequency (MHz) Bandwidth 99% 40 dBm 4.8 ksps 6.25 kHz 4QAM 898.5 200 Hz 5.19 40 dBm 4.8 ksps 6.25 kHz 16QAM 898.5 200 Hz 5.19 40 dBm 4.8 ksps 6.25 kHz 16QAM 898.5 200 Hz 5.19 40 dBm 4.8 ksps 6.25 kHz 64QAM 898.5 200 Hz 5.19 40 dBm 9.6 ksps 12.5 kHz 4QAM 898.5 200 Hz 5.19
40 dBm 4.8 ksps 6.25 kHz 4QAM 898.5 200 Hz 5.19 40 dBm 4.8 ksps 6.25 kHz 16QAM 898.5 200 Hz 5.19 40 dBm 4.8 ksps 6.25 kHz 16QAM 898.5 200 Hz 5.19 40 dBm 4.8 ksps 6.25 kHz 64QAM 898.5 200 Hz 5.19 40 dBm 9.6 ksps 12.5 kHz 4QAM 898.5 200 Hz 5.19
40 dBm 4.8 ksps 6.25 kHz 16QAM 898.5 200 Hz 5.19 40 dBm 4.8 ksps 6.25 kHz 64QAM 898.5 200 Hz 5.19 40 dBm 9.6 ksps 12.5 kHz 4QAM 898.5 200 Hz 5.19
40 dBm 4.8 ksps 6.25 kHz 64QAM 898.5 200 Hz 5.19 40 dBm 9.6 ksps 12.5 kHz 4QAM 898.5 200 Hz 10.3
40 dBm 9.6 ksps 12.5 kHz 4QAM 898.5 200 Hz 10.3
40 dBm 9.6 ksps 12.5 kHz 16QAM 898.5 200 Hz 10.3
40 dBm 9.6 ksps 12.5 kHz 64QAM 898.5 200 Hz 10.3
40 dBm 10.0 ksps 12.5 kHz 4QAM 898.5 200 Hz 10.8
40 dBm 10.0 ksps 12.5 kHz 16QAM 898.5 200 Hz 10.8
40 dBm 10.0 ksps 12.5 kHz 64QAM 898.5 200 Hz 10.8
40 dBm 16.0 ksps 25.0 kHz 4QAM 898.5 200 Hz 17.2
40 dBm 16.0 ksps 25.0 kHz 16QAM 898.5 200 Hz 17.2
40 dBm 16.0 ksps 25.0 kHz 64QAM 898.5 200 Hz 17.1
99% bandwidth measured in accordance with ANSI C63.10, with RB between 1% and 5% of the measured band \geq 3*RB and Span \geq 1.5% and \leq 5% of measured bandwidth.

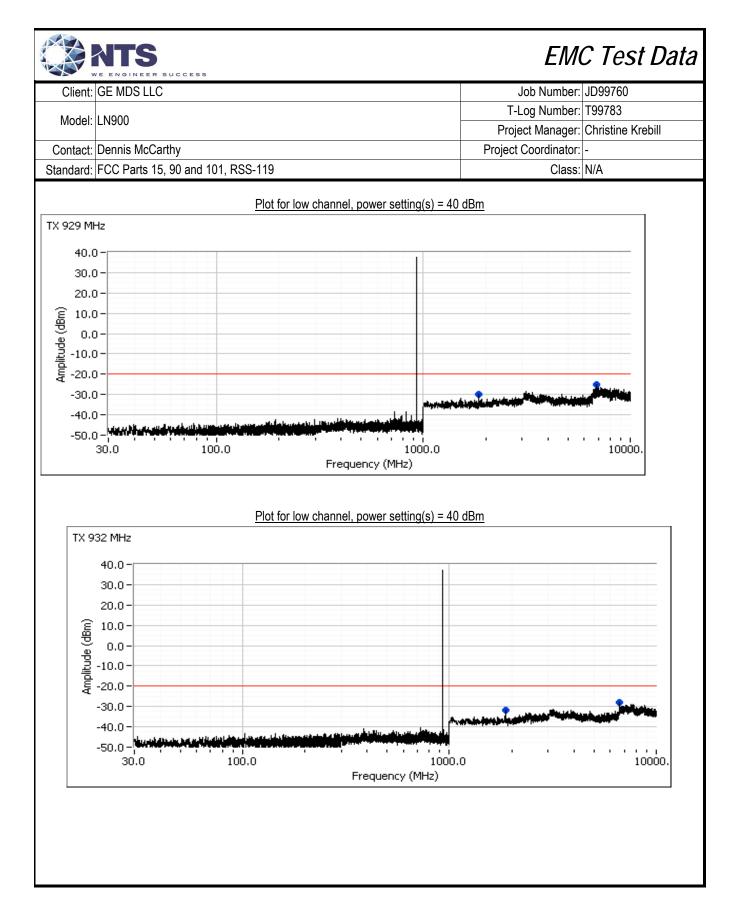


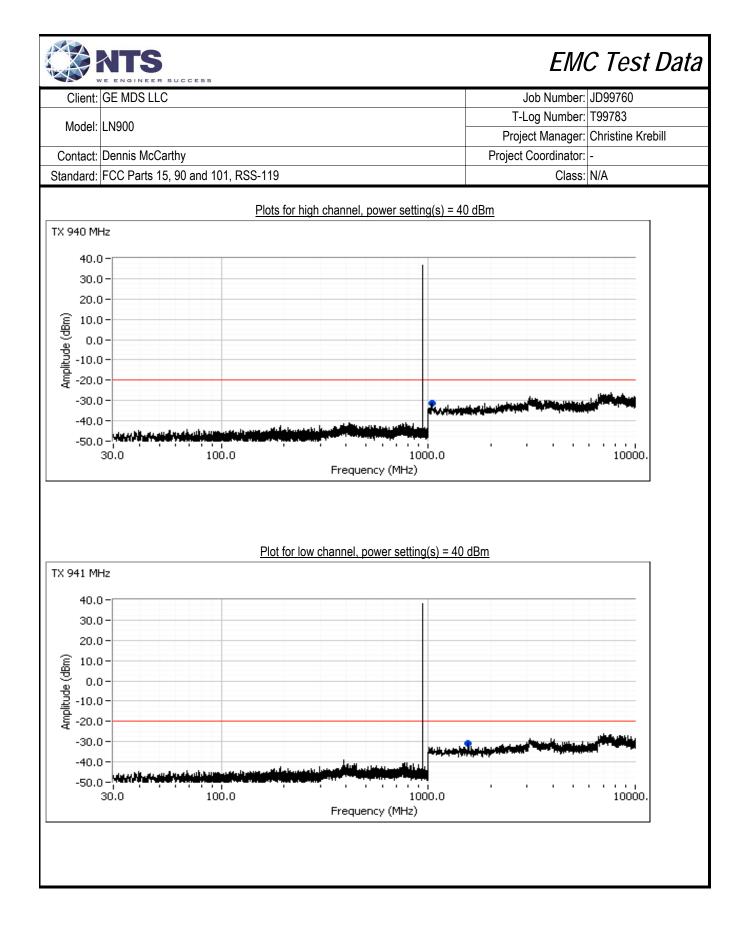


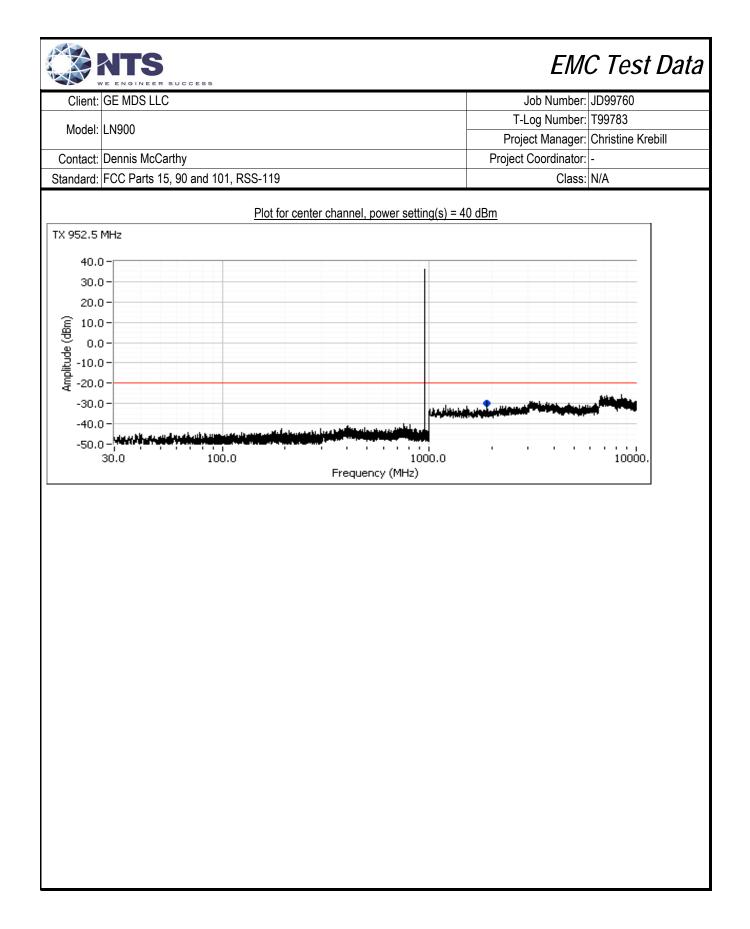
		RSUCCESS					EMC	Test Data
Client:	GE MDS LL	C					Job Number: J	D99760
Madalı							T-Log Number: T	99783
Model:	LIN900						Project Manager: C	Christine Krebill
Contact:	Dennis McC	arthy					Project Coordinator: -	
Standard:	FCC Parts 1	15, 90 and 10)1, RSS-119				Class: N	I/A
Run #4: Ot	it of Band S	purious Em	issions, Cor	nducted				
The limit is t	aken from F	CC Part 90 N	lask D					
_				_		<i>c</i>		
		10/29, 10/30	•			onfig. Used:		
	-	Deniz Demi Fremont Ch				nfig Change: I UT Voltage:		
	st Location:		#3 and Lab	#4D	E	o i voltage:	13.0 VDC	
Frequency	Level	AC	FCC F	Part 90	Detector	Comments		Channel
MHz	dBµV	Line	Limit	Margin				MHz
1869.580	-28.2	RF Port	-20.0	-8.2	PK	PK (CISPR)-	RB 1 MHz; VB: 3 MHz	932
6653.350	-48.9	RF Port	-20.0	-28.9	PK	PK (CISPR)-	RB 1 MHz; VB: 8 MHz	932
1858.860	-27.3	RF Port	-20.0	-7.3	PK	PK (CISPR)-	RB 1 MHz; VB: 3 MHz	929
6886.100	-49.5	RF Port	-20.0	-29.5	PK	PK (CISPR)-	RB 1 MHz; VB: 8 MHz	929
1906.340	-28.8	RF Port	-20.0	-8.8			RB 1 MHz; VB: 8 MHz	952.5
1791.970	-27.8	RF Port	-20.0	-7.8	PK	PK (CISPR)-	RB 1 MHz; VB: 8 MHz	896
	The emplity	do of ominio	na ahaya Ev	Charin the te	hla ahava ar	lower then is	a tha plata dua ta tha uga c	of loss attenuation for
Note 1:							n the plots due to the use on measurement system.	
							medaurement system.	
	Ва	nds	Channels t	o be tested	1			
	896 - 9	01 MHz	896 MHz a	nd 901 MHz				
	935 - 9	40 MHz	935 MHz a	nd 940 MHz				
	928 - 9	29 MHz		-	928 MHz tes	sted under Pa	rt 101	
		30 MHz		MHz	1			
		35 MHz		MHz]			
		44 MHz		MHz	944 MHz tes	sted under Pa	rt 101	
	952 - 9	53 MHz	952.5	MHz				
					_			
l								





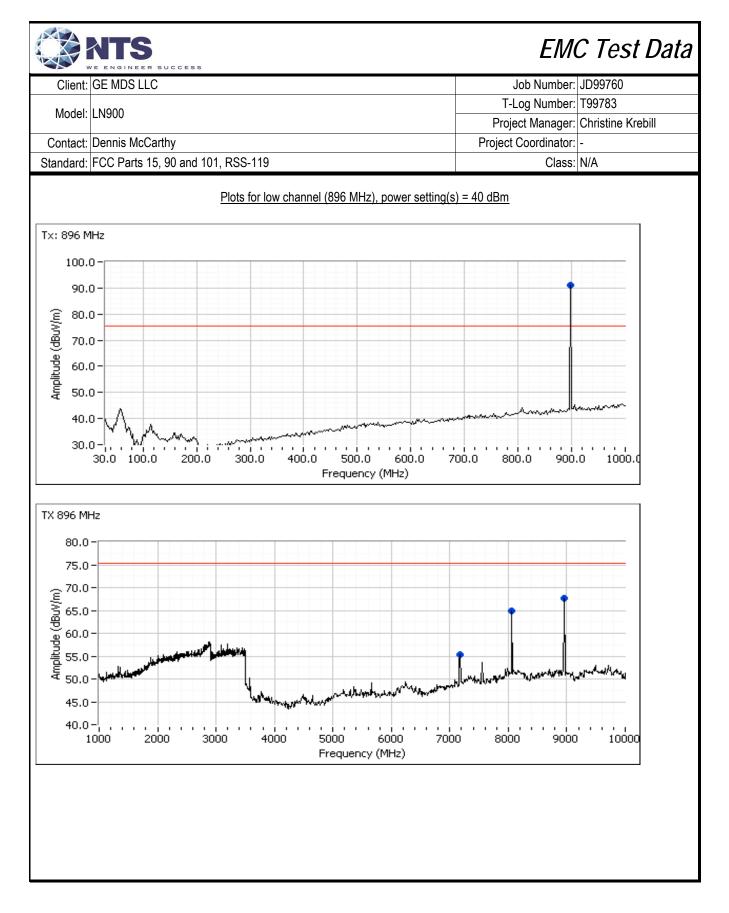


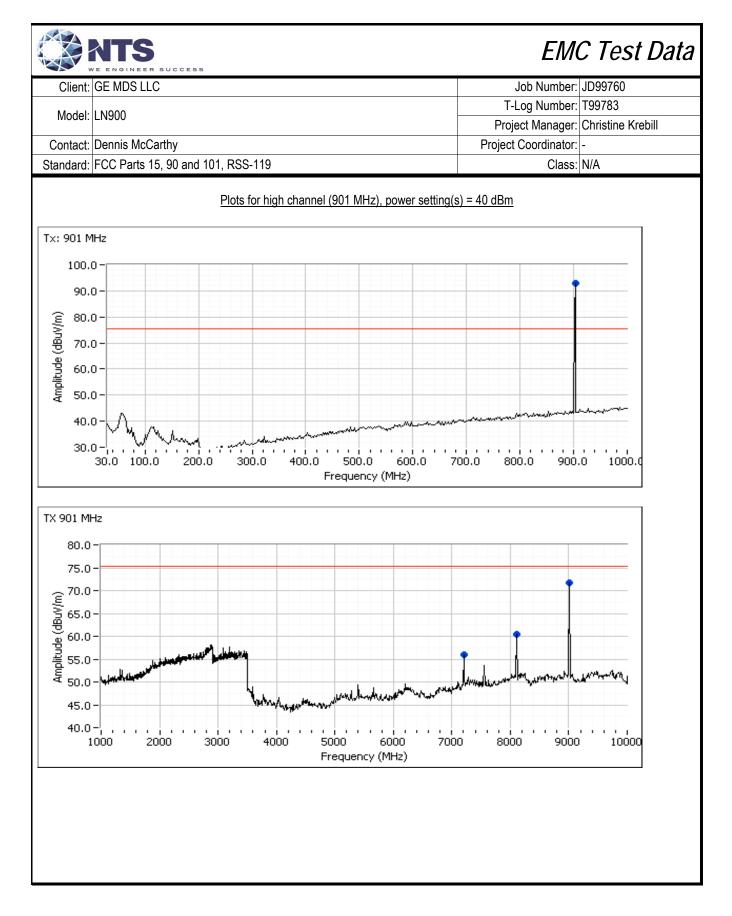


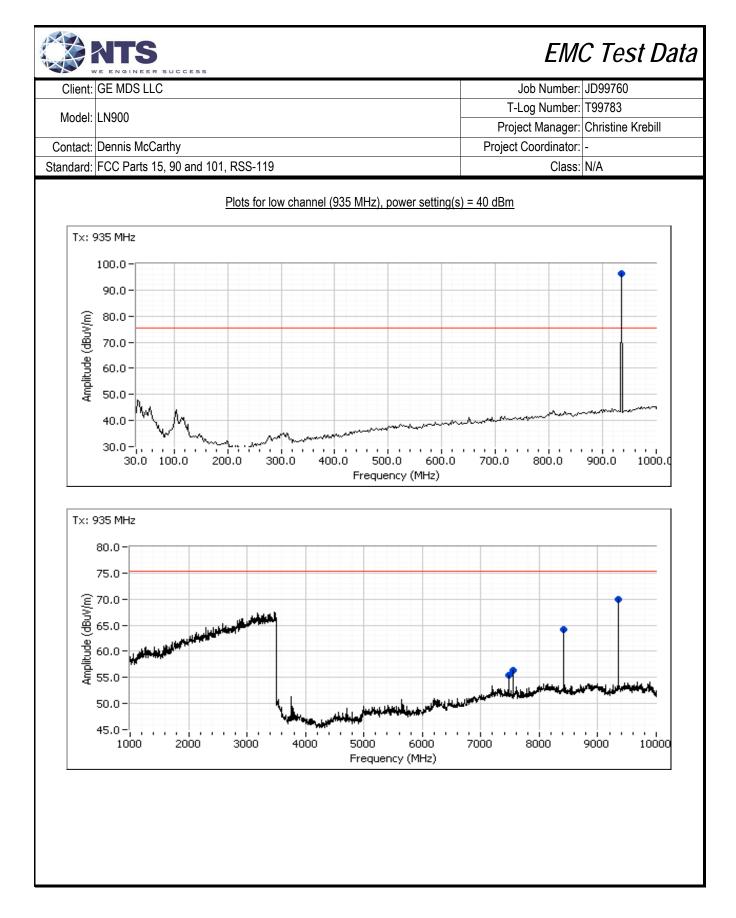


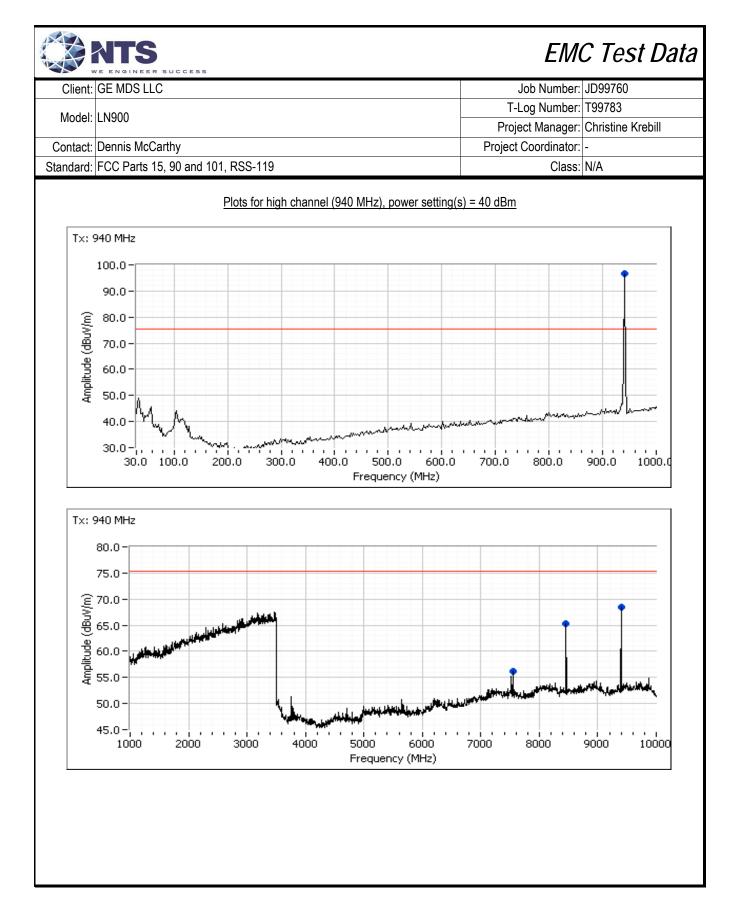
Client:	GE MDS LL	С						Job Number:	JD99760	
	1 1 1 0 0 0						T-	Log Number:	T99783	
Model:	LN900						Proj	ect Manager:	Christine k	Krebill
Contact:	Dennis McC	arthy					-	Coordinator:		
	FCC Parts 1		1 RSS-119					Class:		
otanuaru.		0, 00 010 10	, 1, 100 110					01000.	11/7	
Run #5: Ou	ut of Band S	purious Em	issions, Ra	diated						
		Conducted	l limit (dBm):	-20						
I	Approximate		· · · ·							
he limit is t	aken from F0	CC Part 90 M	lask D							
	Preliminary n			er scans						
[Date of Test:	12/14/2015,	12/15/2015			onfig. Used:				
	est Engineer:			ire		fig Change:				
Te	est Location:	FT Ch #3 &	7		E	UT Voltage:	13.8 VDC a	and 5 VDC		
requency	Level	Pol	FCC	Part 90	Detector	Azimuth	Height	Comments		Chann
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	Comments		MHz
896.008	90.9	H	-	iviargin	PK	41	1.0	Carrier frequ	iency	896.0
168.000	55.4	V	75.3	-19.9	Peak	100	2.5		Joney	896.0
3064.000	64.9	V	75.3	-10.4	Peak	190	2.5			896.0
3960.000	67.6	V	75.3	-7.7	Peak	38	2.0			896.0
901.006	93.1	Н	-	-	PK	240	1.0	Carrier frequ	uency	901.0
208.000	55.9	V	75.3	-19.4	Peak	360	2.5	·		901.0
3109.000	60.4	V	75.3	-14.9	Peak	180	2.0			901.0
9010.000	71.8	V	75.3	-3.5	Peak	42	2.0			901.0
929.020	90.7	Н	-	-	PK	204	1.0	Carrier frequ	uency	929.0
361.000	61.3	V	75.3	-14.0	Peak	181	1.5			929.0
9290.000	67.1	V	75.3	-8.2	Peak	181	1.5			929.0
932.008	92.3	Н	-	-	PK	272	1.0	Carrier frequ	lency	932.0
3388.000	59.9	V	75.3	-15.4	Peak	175	2.5			932.0
9320.000	72.0	V	75.3	-3.3	Peak	61	2.5			932.0
941.003	95.0	V	-	-	PK	208	1.5	Carrier frequ	lency	941.0
3469.000	65.8	V	75.3	-9.5	Peak	201	2.0			941.0
	62.2	V	75.3	-13.1	Peak	352	1.5			941.0
9410.000	54.3	V V	75.3	-21.0	Peak PK	353 228	2.5 2.0	Corrior from	100001	941.0 952.5
9410.000 7528.000		V	- 75.3	-5.6	PK Peak	61	2.0	Carrier frequ	иенсу	952.5 952.5
9410.000 7528.000 952.497	95.1 60.7		75.3	-5.0 -8.2	Peak	26	1.0			952.5 952.5
9410.000 7528.000 952.497 3572.700	69.7	1/	10.0	-0.Z	Peak	262	1.0	Carrier frequ	IANCV	952.5 935.0
9410.000 7528.000 952.497 8572.700 9525.190	69.7 67.1	V H				202	1.0		ленсу	300.0
9410.000 7528.000 952.497 8572.700 9525.190 935.052	69.7 67.1 96.2	Н	- 75 3	- _10.8			2.2			
9410.000 7528.000 952.497 8572.700 9525.190 935.052 7480.000	69.7 67.1 96.2 55.5	H V	- 75.3 75.3	- -19.8 -19.0	Peak	176	2.2			
9410.000 7528.000 952.497 8572.700 9525.190 935.052 7480.000 7552.880 8415.000	69.7 67.1 96.2	Н	- 75.3 75.3 75.3	- -19.8 -19.0 -11.2			2.2 2.5 2.2			

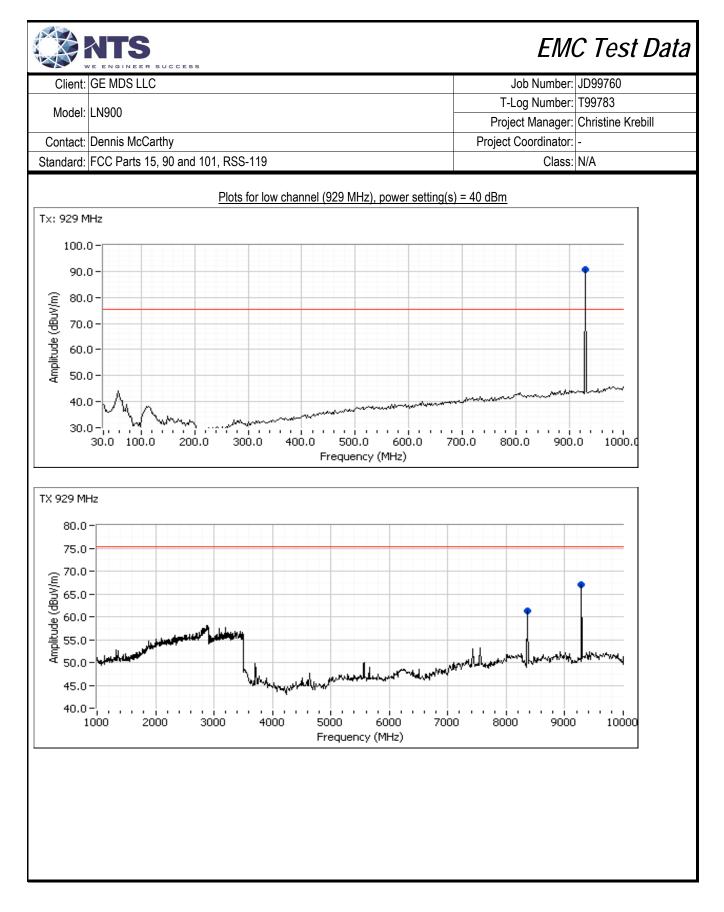
Onorn.	GE MDS LLC)						Job Number: JD99760	
Model:							T-	Log Number: T99783	
woder:	LIN900						Proj	ect Manager: Christine	Krebill
Contact:	Dennis McCa	arthy					Project	Coordinator: -	
Standard:	FCC Parts 15	5, 90 and 10)1, RSS-119					Class: N/A	
Frequency	Level	Pol	FCC F	Part 90	Detector	Azimuth	Height	Comments	Channe
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters		MHz
939.992	96.8	H	-	-	PK	267	1.0	Carrier frequency	940.0
7520.000	55.1	V	75.3	-20.2	Peak	152	1.9		
7552.850 8460.000	56.1 65.3	V V	75.3 75.3	-19.2 -10.0	Peak	152 170	1.9 2.2		
9400.000	68.5	V	75.3	-10.0	Peak Peak	357	2.2		
	The field stre	ngth limit in	the tables al	bove was ca	lculated from	the erp/eirp I	imit detailed	d in the standard using	the free space
		•						•	•
Note 1:		•	. ,					presence of the groun	•
						ha arn ar airi	n for all sign	ale with less than 20 dl	R of margin
	for erp limits,		,			• •	-		b or margin
Note 2: Engineering I - 3.5 GHz	relative to this Measuremen	s field strend ts are made /: 100 kHz, '	gth limit is de with the ant VBW: 300 kH	etermined us tenna port te	sing substitutic erminated.	• •	-		
Note 2: Engineering 1 - 3.5 GHz	relative to this Measuremen notes: no LNA, RBW z with LNA ar	s field streng ts are made /: 100 kHz, ' nd Filter #11	gth limit is de with the ant VBW: 300 kH 57 RBW: 1 M	etermined us tenna port te Hz MHz, VBW: 3	sing substitutic erminated. 3 MHz	• •	-		
Note 2: Engineering 1 - 3.5 GHz	relative to this Measuremen notes: no LNA, RBW z with LNA ar Ban	s field streng ts are made /: 100 kHz, ' nd Filter #11 ds	gth limit is de e with the ant VBW: 300 kH 57 RBW: 1 N Channels t	etermined us tenna port te dz MHz, VBW: 3	sing substitutic erminated. 3 MHz	• •	-		
Note 2: Engineering 1 - 3.5 GHz	relative to this Measuremen notes: no LNA, RBW z with LNA ar	s field streng ts are made /: 100 kHz, ' nd Filter #11 ds 1 MHz	gth limit is de with the ant VBW: 300 kF 57 RBW: 1 M Channels t 896 MHz a	etermined us tenna port te dz MHz, VBW: 3 to be tested nd 901 MHz	sing substitutic erminated. 3 MHz	• •	-		
Note 2: Engineering 1 - 3.5 GHz	relative to this Measuremen notes: no LNA, RBM z with LNA ar Ban 896 - 90	s field strend ts are made /: 100 kHz, / nd Filter #11 ds 1 MHz 0 MHz	gth limit is de with the ant VBW: 300 kF 57 RBW: 1 M Channels t 896 MHz a	etermined us tenna port te dz MHz, VBW: 3	sing substitutic erminated. 3 MHz	n measurem	lents.		
Note 2: Engineering 1 - 3.5 GHz	relative to this Measuremen notes: no LNA, RBW z with LNA ar Ban 896 - 90 935 - 94	s field streng ts are made /: 100 kHz, ' 100 kHz, ' 100 kHz, ' 100 kHz 100 kHz 100 kHz 100 kHz 100 kHz	gth limit is de with the ant VBW: 300 kF 57 RBW: 1 M Channels t 896 MHz an 935 MHz an	etermined us tenna port te dz MHz, VBW: 3 to be tested nd 901 MHz	sing substitutic erminated. 3 MHz	n measurem	lents.		
Note 2: Engineering 1 - 3.5 GHz	relative to this Measuremen notes: no LNA, RBW z with LNA ar Ban 896 - 90 935 - 94 928 - 92	s field streng ts are made (: 100 kHz, ' nd Filter #11 ds 1 MHz 0 MHz 9 MHz 0 MHz 0 MHz	gth limit is de with the ant VBW: 300 kH 57 RBW: 1 M Channels t 896 MHz an 935 MHz an 929	etermined us tenna port te Hz MHz, VBW: 3 to be tested nd 901 MHz nd 940 MHz	sing substitutic erminated. 3 MHz	n measurem	lents.		
Note 2: Engineering 1 - 3.5 GHz	relative to this Measuremen notes: no LNA, RBW z with LNA ar Ban 896 - 90 935 - 94 928 - 92 929 - 93	s field streng ts are made /: 100 kHz, ' nd Filter #11 ds 1 MHz 0 MHz 0 MHz 5 MHz	gth limit is de with the ant VBW: 300 kH 57 RBW: 1 M Channels t 896 MHz an 935 MHz an 929 929 932	etermined us tenna port te Hz MHz, VBW: 3 to be tested nd 901 MHz - MHz	sing substitutio erminated. 3 MHz 928 MHz tes	n measurem	art 101		

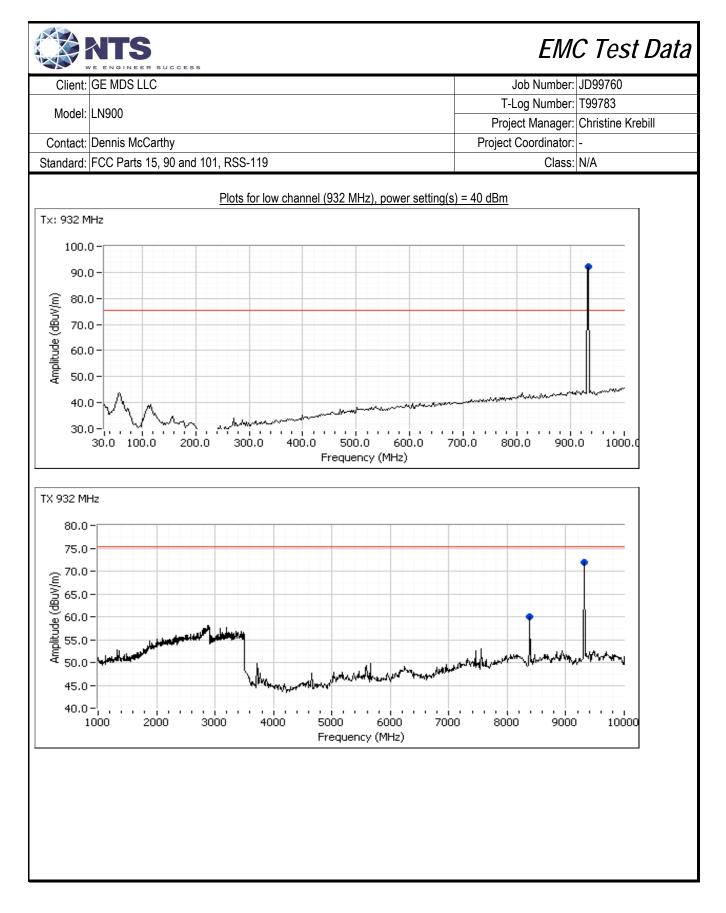


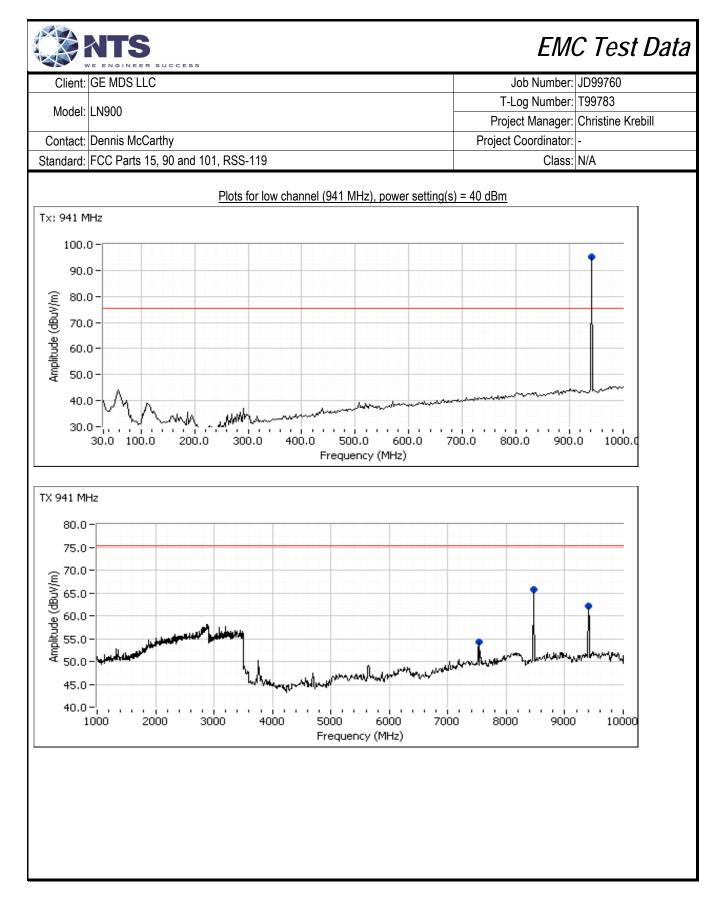


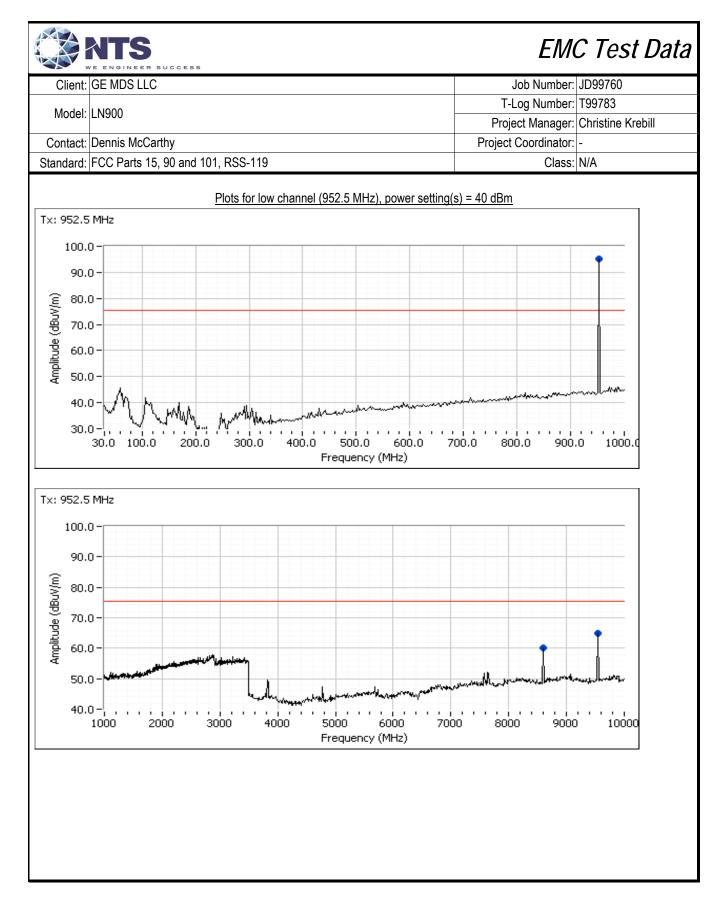












Client	GE MDS LLC)						Job Number:	JD99760	
Madal	LN900						T-	Log Number:	T99783	
woder	LIN900						Proj	ect Manager:	Christine Kr	ebill
Contact	Dennis McCa	arthy					Proiect	Coordinator:	-	
	FCC Parts 1	-	1 RSS-119				.,	Class:	N/A	
otandara		,	.,					0.000		
Run #5b: -	Final Field St	renath and	Substitutio	n Measurer	nents					
	Date of Test:					onfig. Used:	1			
Te	est Engineer: I	David Bare			Cor	fig Change:	None			
Т	est Location: I	Fremont Ch	amber #3		E	UT Voltage:	13.8 VDC a	and 5 VDC		
UT Field	· · · ·	Pol	FCCI	Part 90	Detector	Animuth	Height	Commonto		Channa
requency MHz	Level dBµV/m	v/h	Limit	1	Detector Pk/QP/Avg	Azimuth	Height	Comments		Channe
7166.670	σθμν/m 57.1	V	75.3	Margin -18.2	PK PK	degrees 101	meters 2.4	RB 1 MHz;VB 3		896.0
8064.760	64.9	V	75.3	-10.2	PK	101	2.4	RB 1 MHz;VB 3	-	896.0
8960.710	69.1	V	75.3	-6.2	PK	40	2.4	RB 1 MHz;VB 3		896.0
7207.870	58.4	Н	75.3	-16.9	PK	360	2.0	RB 1 MHz;VB 3		901.0
8109.330	65.0	V	75.3	-10.3	PK	180	2.0	RB 1 MHz;VB 3		901.0
9009.030	73.8	V	75.3	-1.5	PK	40	2.0	RB 1 MHz;VB 3		901.0
8360.080	69.2	V	75.3	-6.1	PK	182	1.5	RB 1 MHz;VB 3		929.0
9290.670	69.5	V	75.3	-5.8	PK	182	1.5	RB 1 MHz;VB 3		929.0
8388.290	64.0	V	75.3	-11.3	PK	172	2.5	RB 1 MHz;VB 3		932.0
9319.590	74.3	V	75.3	-1.0	PK	59	2.5	RB 1 MHz;VB 3		932.0
8469.720	66.8	V	75.3	-8.5	PK	202	2.0	RB 1 MHz;VB 3		941.0
9410.060	70.2	V	75.3	-5.1	PK	353	1.5	RB 1 MHz;VB 3		941.0
7529.250	57.6	V	75.3	-17.7	PK	353	2.5	RB 1 MHz;VB 3		941.0
8572.700	69.7	V	75.3	-5.6	PK	61	2.4	RB 1 MHz;VB 3		952.5
9525.190	67.1	V	75.3	-8.2	PK	26	1.0	RB 1 MHz;VB 3	3 MHz;Peak	952.5
		-				• •		d in the standa	-	•
ata 1.		•	()					presence of	U 1	
	for erp limits,		,			•	-	als with less t	than 20dB o	f margin
		e field etropy	nth limit is de	etermined us	ina substitutic	n measurem	ients.			
lote 1: lote 2:	relative to thi Measuremen					mineasaren				

Substitution mea Horizontal	0 is McCarthy Parts 15, 90 and asurements Substitution meas	101, RSS-119				T-L Proje	lob Number: .og Number: ct Manager: Coordinator:		ebill
Contact: Denn Standard: FCC Substitution mea Horizontal Frequency S MHz P 7207.870 -4	iis McCarthy Parts 15, 90 and asurements Substitution meas	101, RSS-119				Proje	ct Manager:		əbill
Standard: FCC Substitution mea Horizontal Frequency P MHz P 7207.870 -4	Parts 15, 90 and asurements Substitution meas	01, RSS-119					-	- Christine Kre	
Standard: FCC Substitution mea Horizontal Frequency MHz P 7207.870 -4	Parts 15, 90 and asurements Substitution meas	101, RSS-119				Project	Coordinator:	-	
Substitution mea Horizontal Frequency MHz P 7207.870 -4	asurements Substitution meas	101, RSS-119							
Horizontal Frequency MHz P 7207.870 -4	Substitution meas						Class:	N/A	
Frequency S MHz P 7207.870 -4									
MHz P 7207.870 -4		uromonte	Site	EU	T measureme	onte	eirp Limit	erp Limit	Margin
7207.870 -4	1 Oct. 2	FS ³		FS ⁵	eirp (dBm)		dBm	dBm	dB
		65.5	Factor ⁴ 95.3	FS 58.4	-36.9	erp (dBm) -39.1	UDIII	UDIII	uБ
	0.0 10.2	05.5	90.0	50.4	-30.9	-39.1			
	Substitution meas	urements	Site	EU	T measureme	ents	eirp Limit	erp Limit	Margin
	Pin ¹ Gain ²	FS ³	Factor ⁴	FS ⁵	eirp (dBm)	erp (dBm)	dBm	dBm	dB
	0.0 10.5	67.0	96.5	57.1	-39.4	-41.6		-20.0	-21.6
	0.1 10.8	68.1	97.4	64.9	-32.5	-34.7		-20.0	-14.7
	0.2 11.0	68.2	97.4	69.1	-28.3	-30.5		-20.0	-10.5
	0.1 11.1	68.1	97.1	65.0	-32.1	-34.3		-20.0	-14.3
	0.2 10.9	68.4	97.7	73.8	-23.9	-26.1		-20.0	-6.1
	0.1 11.1	67.4	96.4	69.2	-27.2	-29.4		-20.0	-9.4
9290.670 -4	0.2 11.5	68.0	96.7	69.5	-27.2	-29.4		-20.0	-9.4
8388.290 -4	0.1 11.1	67.5	96.5	64.0	-32.5	-34.7		-20.0	-14.7
	0.2 11.5	68.0	96.7	74.3	-22.4	-24.6		-20.0	-4.6
	0.1 11.0	67.5	96.6	66.8	-29.8	-32.0		-20.0	-12.0
	0.2 11.5	68.1	96.8	70.2	-26.6	-28.8		-20.0	-8.8
	0.0 11.5	67.6	96.1	57.6	-38.5	-40.7		-20.0	-20.7
	0.1 10.8	67.6	96.9	69.7	-27.2	-29.4		-20.0	-9.4
9525.190 -4	0.2 11.6	68.1	96.7	67.1	-29.6	-31.8		-20.0	-11.8
Note 1: Pin is	the input power (dBm) to the su	ubstitution an	tenna					
	is the gain (dBi) for								
	the field strength			he substitutio	on antenna.				
Note 4: Site F	actor - this is the	site factor to c	onvert from a	a field strengt	h in dBuV/m	to an eirp in	dBm.		
Note 5: EUT	field strength as n	neasured durir	ig initial run.						

Client	GE MDS LL	С						Job Number:	JD99760	
							T-l	_og Number:	T99783	
Model	LN900						Proje	ect Manager:	Christine Kre	bill
Contact	Dennis McC	arthy					Project	Coordinator:	-	
Standard	FCC Parts 1	5, 90 and 10	1, RSS-119					Class:	N/A	
Te T	Final Field S Date of Test: est Engineer: est Location:	11/30 & 12/1 David Bare	16/2015	on Measuren	C Cor	config. Used: nfig Change: UT Voltage:	None	nd 5 VDC		
EUT Field S Frequency		Pol	FCC	Part 90	Detector	Azimuth	Hoight	Comments		Channe
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	Height meters	Comments		Channe
8415.100	б9.1	V	75.3	-6.2	PK	183	2.2	RB 1 MHz;VB 3	MHz.Doak	935
9349.790	69.9	V	75.3	-0.2	PK	32	2.2	RB 1 MHz;VB 3		935
3343.130		V	75.3	-20.4	PK	151	1.8	RB 1 MHz;VB 3		940
7552 710		v	15.5			170		RB 1 MHz;VB		940
7552.710	54.9 74.6	V	75 3	_0 7						
8460.390	74.6	V	75.3 75.3	-0.7	PK PK		2.2			
8460.390 9400.510	74.6 69.9 The field stre propagation for erp limits	V ength limit in equation: E= , the dipole g	75.3 the tables al ≂√(30PG)/d. jain (2.2dBi)	-5.4 0.0 bove was ca This limit is o has not bee	PK Iculated from conservative n included. T	357 the erp/eirp - it does not o he erp or eir	2.2 limit detailed consider the p for all signa	RB 1 MHz;VB 3 in the standa presence of	3 MHz;Peak ard using the the ground pl	940 free spac ane and,
8460.390 9400.510 Note 1:	74.6 69.9 The field stree propagation for erp limits relative to th Measuremen	V ength limit in equation: E= , the dipole g is field strens nts are made	75.3 the tables al ≂√(30PG)/d. jain (2.2dBi) gth limit is de	-5.4 0.0 bove was ca This limit is o has not bee etermined us	PK Iculated from conservative n included. T ing substitutio	357 the erp/eirp - it does not o he erp or eir	2.2 limit detailed consider the p for all signa	RB 1 MHz;VB 3 in the standa presence of	3 MHz;Peak ard using the the ground pl	940 free spac ane and,
8460.390 9400.510 Note 1:	74.6 69.9 The field stree propagation for erp limits relative to th	V ength limit in equation: E= , the dipole g is field strens nts are made	75.3 the tables al ≂√(30PG)/d. jain (2.2dBi) gth limit is de	-5.4 0.0 bove was ca This limit is o has not bee etermined us	PK Iculated from conservative n included. T ing substitutio	357 the erp/eirp - it does not o he erp or eir	2.2 limit detailed consider the p for all signa	RB 1 MHz;VB 3 in the standa presence of	3 MHz;Peak ard using the the ground pl	940 free spac ane and,
8460.390 9400.510 Jote 1: Jote 2: Substitutic /ertical	74.6 69.9 The field stree propagation for erp limits relative to th Measuremen	V ength limit in equation: E= , the dipole g is field strens nts are made	75.3 the tables al =√(30PG)/d. gain (2.2dBi) gth limit is de with the ant	-5.4 0.0 bove was ca This limit is o has not bee etermined us	PK Iculated from conservative n included. T ing substitutio rminated.	357 the erp/eirp - it does not o he erp or eir	2.2 limit detailed consider the p for all signa nents.	RB 1 MHz;VB 3 in the standa presence of	3 MHz;Peak ard using the the ground pl	940 free spac ane and, margin
8460.390 9400.510 lote 1: lote 2: cubstitutic retical	74.6 69.9 The field stree propagation for erp limits relative to th Measuremen	V ength limit in equation: E= , the dipole g is field streng nts are made nents	75.3 the tables al =√(30PG)/d. gain (2.2dBi) gth limit is de with the ant	-5.4 0.0 bove was ca This limit is o has not bee etermined us tenna port te	PK Iculated from conservative n included. T ing substitutio rminated.	357 the erp/eirp - it does not o he erp or eir on measurem	2.2 limit detailed consider the p for all signa nents.	RB 1 MHz;VB 3 in the standa presence of als with less t	3 MHz;Peak ard using the the ground pl han 20dB of	940 free spac ane and,
8460.390 9400.510 lote 1: lote 2: Gubstitutic rertical Frequency MHz	74.6 69.9 The field stree propagation for erp limits relative to th Measuremen on measuremen Substitu	V ength limit in equation: E= , the dipole g is field streng nts are made ents	75.3 the tables a ⊲√(30PG)/d. gain (2.2dBi) gth limit is de with the and with the and	-5.4 0.0 bove was ca This limit is o has not bee etermined us tenna port te	PK Iculated from conservative n included. T ing substitutio rminated. EU	357 the erp/eirp - it does not o 'he erp or eir on measurem	2.2 limit detailed consider the p for all signation nents.	RB 1 MHz;VB 3 in the standa presence of als with less t eirp Limit	ard using the the ground pl han 20dB of erp Limit	940 free spac ane and, margin Margir
8460.390 9400.510 lote 1: lote 2: cubstitutic requency MHz 8415.100	74.6 69.9 The field stree propagation for erp limits relative to th Measuremen on measuremen Substitu Pin ¹	V ength limit in equation: E= , the dipole g is field streng nts are made nents ution measur Gain ²	75.3 the tables a ≂√(30PG)/d. gain (2.2dBi) gth limit is de with the ant ements FS ³	-5.4 0.0 bove was ca This limit is of has not bee etermined us tenna port te Site Factor ⁴	PK Iculated from conservative n included. T ing substitutio rminated. EU [*]	357 the erp/eirp - it does not o he erp or eir on measurem T measureme eirp (dBm)	2.2 limit detailed consider the p for all signa nents. ents erp (dBm)	RB 1 MHz;VB 3 in the standa presence of als with less t eirp Limit	ard using the the ground pl han 20dB of erp Limit dBm	940 free spac ane and, margin Margin dB
8460.390 9400.510 Jote 1: Jote 2: Substitutic /ertical Frequency MHz 8415.100 9349.790 7552.710	74.6 69.9 The field stree propagation for erp limits relative to th Measuremen on measurem Substitu Pin ¹ -40.1 -40.2 -40.0	V ength limit in equation: E= , the dipole g is field streng nts are made ents ution measur <u>Gain² 11.1 11.5 11.5</u>	75.3 the tables a $=\sqrt{(30PG)/d}$. gain (2.2dBi) gth limit is de with the and ements FS ³ 67.5 68.4 67.5	-5.4 0.0 bove was ca This limit is of has not bee etermined us tenna port te Site Factor ⁴ 96.5 97.1 96.0	PK lculated from conservative n included. T ing substitutio rminated. EU FS ⁵ 69.1 69.9 54.9	357 the erp/eirp - it does not o he erp or eir on measurem eirp (dBm) -27.4 -27.2 -41.1	2.2 limit detailed consider the p for all signa- nents. erp (dBm) -29.6 -29.4 -43.3	RB 1 MHz;VB 3 in the standa presence of als with less t eirp Limit	ard using the the ground pl han 20dB of erp Limit dBm -20.0 -20.0 -20.0	940 free spar ane and, margin Margin dB -9.6 -9.4 -23.3
8460.390 9400.510 Jote 1: Jote 2: Substitutic /ertical Frequency MHz 8415.100 9349.790 7552.710 8460.390	74.6 69.9 The field stree propagation for erp limits relative to th Measuremen on measuremen Substitut Pin ¹ -40.1 -40.2 -40.1 -40.1 -40.1	V ength limit in equation: E= , the dipole g is field streng nts are made ents ution measur <u>Gain² 11.1 11.5 11.5 11.1</u>	75.3 the tables a $=\sqrt{(30PG)/d}$. gain (2.2dBi) gth limit is de with the ant ements FS ³ 67.5 68.4 67.5 67.3	-5.4 0.0 bove was ca This limit is of has not bee etermined us tenna port te Factor ⁴ 96.5 97.1 96.0 96.3	PK lculated from conservative n included. T ing substitutio rminated. EU FS ⁵ 69.1 69.9 54.9 74.6	357 the erp/eirp - it does not of the erp or eir on measurem eirp (dBm) -27.4 -27.2 -41.1 -21.7	2.2 limit detailed consider the p for all signa- nents. erp (dBm) -29.6 -29.4 -43.3 -23.9	RB 1 MHz;VB 3 in the standa presence of als with less t eirp Limit	erp Limit dBm -20.0 -20.0 -20.0 -20.0	940 free spar ane and, margin Margin dB -9.6 -9.4 -23.3 -3.9
8460.390 9400.510 Jote 1: Jote 2: Substitutic /ertical Frequency MHz 8415.100 9349.790 7552.710 8460.390	74.6 69.9 The field stree propagation for erp limits relative to th Measuremen on measurem Substitu Pin ¹ -40.1 -40.2 -40.0	V ength limit in equation: E= , the dipole g is field streng nts are made ents ution measur <u>Gain² 11.1 11.5 11.5</u>	75.3 the tables a $=\sqrt{(30PG)/d}$. gain (2.2dBi) gth limit is de with the and ements FS ³ 67.5 68.4 67.5	-5.4 0.0 bove was ca This limit is of has not bee etermined us tenna port te Site Factor ⁴ 96.5 97.1 96.0	PK lculated from conservative n included. T ing substitutio rminated. EU FS ⁵ 69.1 69.9 54.9	357 the erp/eirp - it does not o he erp or eir on measurem eirp (dBm) -27.4 -27.2 -41.1	2.2 limit detailed consider the p for all signa- nents. erp (dBm) -29.6 -29.4 -43.3	RB 1 MHz;VB 3 in the standa presence of als with less t eirp Limit	ard using the the ground pl han 20dB of erp Limit dBm -20.0 -20.0 -20.0	940 free spa ane and, margin Margi dB -9.6 -9.4 -23.3 -3.9
8460.390 9400.510 Note 1: Note 2: Substitutic /ertical Frequency MHz 8415.100 9349.790 7552.710 8460.390 9400.510	74.6 69.9 The field stree propagation for erp limits relative to th Measuremen on measuremen Substitut Pin ¹ -40.1 -40.2 -40.1 -40.2	V ength limit in equation: E= , the dipole g is field strens nts are made nents ution measur <u>Gain²</u> 11.1 11.5 11.5 11.5 11.1 11.5	75.3 the tables a $=\sqrt{(30PG)/d}$. gain (2.2dBi) gth limit is de with the ant ements FS ³ 67.5 68.4 67.5 68.4 67.3 68.2	-5.4 0.0 bove was ca This limit is of has not bee etermined us tenna port te Factor ⁴ 96.5 97.1 96.0 96.3 96.3 96.9	PK lculated from conservative n included. T ing substitutio rminated. EU FS ⁵ 69.1 69.9 54.9 74.6 69.9	357 the erp/eirp - it does not of the erp or eir on measurem eirp (dBm) -27.4 -27.2 -41.1 -21.7	2.2 limit detailed consider the p for all signa- nents. erp (dBm) -29.6 -29.4 -43.3 -23.9	RB 1 MHz;VB 3 in the standa presence of als with less t eirp Limit	erp Limit dBm -20.0 -20.0 -20.0 -20.0	940 free spar ane and, margin Margin dB -9.6 -9.4 -23.3 -3.9
8460.390 9400.510 Jote 1: Jote 2: Substitutic Vertical Frequency MHz 8415.100 9349.790 7552.710 8460.390 9400.510 Jote 1:	74.6 69.9 The field stree propagation for erp limits relative to th Measuremen on measuremen Substitu Pin ¹ -40.1 -40.2 -40.1 -40.2 Pin is the inp	V ength limit in equation: E= , the dipole g is field streng nts are made ents ution measur Gain ² 11.1 11.5 11.5 11.5 11.5 11.5 0000000000	T5.3 the tables a $=\sqrt{(30PG)/d}$. gain (2.2dBi) gth limit is de with the ant ements FS ³ 67.5 68.4 67.5 68.4 67.3 68.2 Bm) to the su	-5.4 0.0 bove was ca This limit is of has not bee etermined us tenna port te Factor ⁴ 96.5 97.1 96.0 96.3 96.9 ubstitution ar	PK lculated from conservative n included. T ing substitutio rminated. EU FS ⁵ 69.1 69.9 54.9 74.6 69.9 74.6	357 the erp/eirp - it does not of the erp or eir on measurem eirp (dBm) -27.4 -27.2 -41.1 -21.7	2.2 limit detailed consider the p for all signa- nents. erp (dBm) -29.6 -29.4 -43.3 -23.9	RB 1 MHz;VB 3 in the standa presence of als with less t eirp Limit	erp Limit dBm -20.0 -20.0 -20.0 -20.0	940 free spar ane and, margin Margin dB -9.6 -9.4 -23.3 -3.9
8460.390 9400.510 lote 1: lote 2: substitutic requency MHz 8415.100 9349.790 7552.710 8460.390 9400.510 lote 1: lote 2:	74.6 69.9 The field strepropagation for erp limits relative to th Measurement Substitut Pin 1 -40.1 -40.2 -40.1 -40.2 Pin is the inp Gain is the g	V ength limit in equation: E= , the dipole g is field streng nts are made ents ution measur <u>Gain²</u> 11.1 11.5 11.5 11.5 11.5 11.5 11.5 11.	T5.3 the tables a $=\sqrt{(30PG)/d}$. gain (2.2dBi) gth limit is de with the ant ements FS ³ 67.5 68.4 67.5 68.4 67.5 68.2 Bm) to the substitut	-5.4 0.0 bove was ca This limit is of has not bee etermined us tenna port te Factor ⁴ 96.5 97.1 96.0 96.3 96.9 ubstitution ar tion antenna.	PK lculated from conservative n included. T ing substitutio rminated. EU [*] FS ⁵ 69.1 69.9 54.9 74.6 69.9 74.6 69.9	357 the erp/eirp - it does not of the erp or eir on measurem eirp (dBm) -27.4 -27.2 -41.1 -21.7 -27.0	2.2 limit detailed consider the p for all signa- nents. erp (dBm) -29.6 -29.4 -43.3 -23.9	RB 1 MHz;VB 3 in the standa presence of als with less t eirp Limit	erp Limit dBm -20.0 -20.0 -20.0 -20.0	940 free spar ane and, margin Margin dB -9.6 -9.4 -23.3 -3.9
8460.390 9400.510 Note 1: Note 2: Substitutic /ertical Frequency	74.6 69.9 The field stree propagation for erp limits relative to th Measuremen on measuremen Substitut Pin ¹ -40.1 -40.2 -40.1 -40.2 Pin is the inp Gain is the g FS is the field	V ength limit in equation: E= , the dipole g is field streng nts are made ents ution measur Gain ² 11.1 11.5 11.5 11.1 11.5 11.1 11.5 out power (dB pain (dBi) for d strength (d	T5.3 the tables at $=\sqrt{(30PG)/d}$. gain (2.2dBi) gth limit is de with the ant ements FS ³ 67.5 68.4 67.5 67.3 68.2 Bm) to the su the substitut BuV/m) mea	-5.4 0.0 bove was ca This limit is of has not bee etermined us tenna port te Factor ⁴ 96.5 97.1 96.0 96.3 96.9 ubstitution ar tion antenna. asured from t	PK lculated from conservative n included. T ing substitutio rminated. EU FS ⁵ 69.1 69.9 54.9 74.6 69.9 74.6	357 the erp/eirp - it does not of the erp or eir on measurem eirp (dBm) -27.4 -27.2 -41.1 -21.7 -21.7 -27.0	2.2 limit detailed consider the p for all signa- nents. erp (dBm) -29.6 -29.4 -43.3 -23.9 -29.2	RB 1 MHz;VB 3	erp Limit dBm -20.0 -20.0 -20.0 -20.0	940 free spar ane and, margin Margin dB -9.6 -9.4 -23.3

	NTS	EMC Test Data
Client:	GE MDS LLC	Job Number: JD99760
Madalı	1 NOOO	T-Log Number: T99783
Model:	LN900	Project Manager: Christine Krebill
Contact:	Dennis McCarthy	Project Coordinator: -
Standard:	FCC Parts 15, 90 and 101, RSS-119	Class: N/A
	equency Stability Date of Test: 10/28/2015	Config. Used: 1

Date of Test: 10/28/2015 Test Engineer: Deniz Demirci Test Location: FT Lab #4b Config. Used: 1 Config Change: None EUT Voltage: 13.8 VDC

Nominal Frequency: 898.50000 MHz

Frequency Stability Over Temperature

The EUT was soaked at each temperature for a minimum of 30 minutes prior to making the measurements to ensure the EUT and chamber had stabilized at that temperature.

Temperature	Frequency Measured	D	rift
(Celsius)	(MHz)	(Hz)	(ppm)
-30	898.500153	153	0.2
-20	898.500087	87	0.1
-10	898.500245	245	0.3
0	898.500092	92	0.1
10	898.499992	-8	0.0
20	898.500050	50	0.1
30	898.500255	255	0.3
40	898.500283	283	0.3
50	898.500283	283	0.3
	Worst case:	283	0.3

Frequency Stability Over Input Voltage

Nominal Voltage range is 11.8 - 52.2 Vdc.

<u>Voltage</u>	Frequency Measured	D	rift
(DC)	(MHz)	(Hz)	(ppm)
10	898.500057	57	0.1
60	898.500057	57	0.1
	Worst case:	57	0.3

Note 1: Maximum drift of fundamental frequency before it shut down at 9.2 Vdc is 57 Hz.

EMC Test Data

Client:	GE MDS LLC	Job Number:	JD99760
Model:		T-Log Number:	Т99783
wouer.	EN900	Project Manager:	Christine Krebill
Contact:	Dennis McCarthy	Project Coordinator:	-
Standard:	FCC Parts 15, 90 and 101, RSS-119	Class:	N/A

FCC Part 101

Power, Occupied Bandwidth, Frequency Stability and Spurious Emissions

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

General Test Configuration

With the exception of the radiated spurious emissions tests, all measurements are made with the EUT's rf port connected to the measurement instrument via an attenuator or dc-block if necessary. All amplitude measurements are adjusted to account for the attenuation between EUT and measuring instrument. For frequency stability measurements the EUT was place inside an environmental chamber.

Radiated measurements are made with the EUT located on a non-conductive table, 3m from the measurement antenna.

Ambient Conditions:	Temperature:	18-22 °C
	Rel. Humidity:	30-36 %

Summary of Results

Test Performed	Limit	Pass / Fail	Result / Margin
Output Power Depe	ends on license	Pass	40.9 dBm
Spectral Mask varies	with modulation	Pass	Complied with Mask
99% or Occupied Bandwidth varies	with modulation	-	See below
Spurious Emissions (conducted)	-20 dBm	Pass	-25.5 dBm @ 1920.2 MHz (-5.5 dB)
Spurious emissions (radiated)	-20 dBm	Pass	-28.2 dBm @ 9439.9 MHz (-8.2 dB)
Frequency Stability	1.5 ppm	Pass	0.3 ppm
	Output Power Department Spectral Mask varies 99% or Occupied Bandwidth varies Spurious Emissions (conducted) Spurious emissions (radiated)	Output Power Depends on license Spectral Mask varies with modulation 99% or Occupied Bandwidth varies with modulation Spurious Emissions (conducted) -20 dBm Spurious emissions (radiated) -20 dBm	Output Power Depends on license Pass Spectral Mask varies with modulation Pass 99% or Occupied Bandwidth varies with modulation - Spurious Emissions (conducted) -20 dBm Pass Spurious emissions (radiated) -20 dBm Pass

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

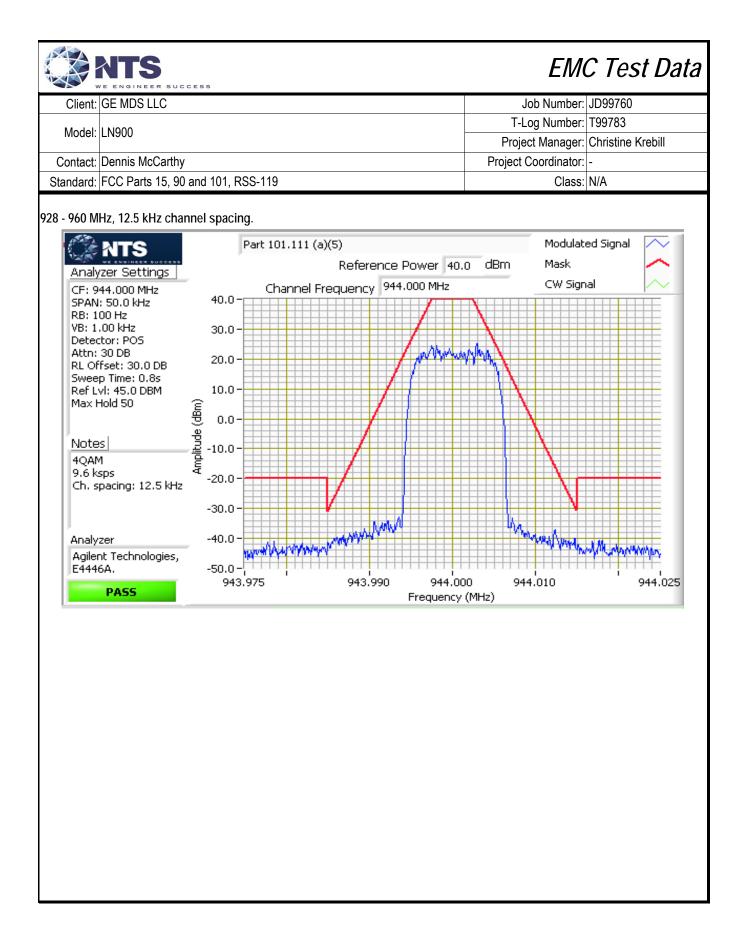
Test Notes

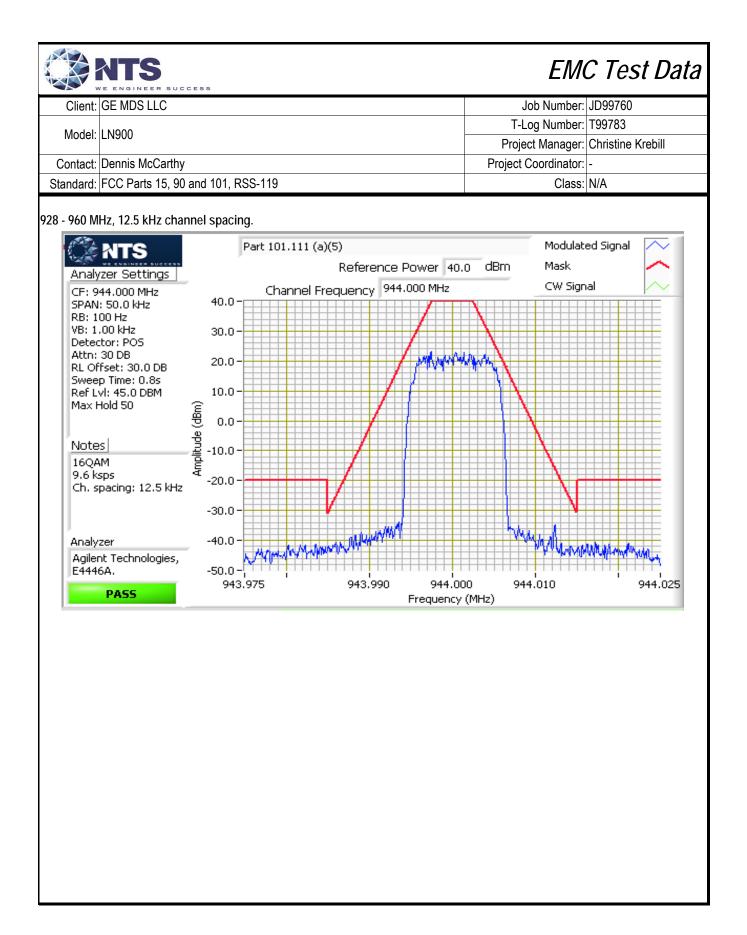
Part 101: 928-960MHz, 12.5, 25 & 50 kHz channel spacings.

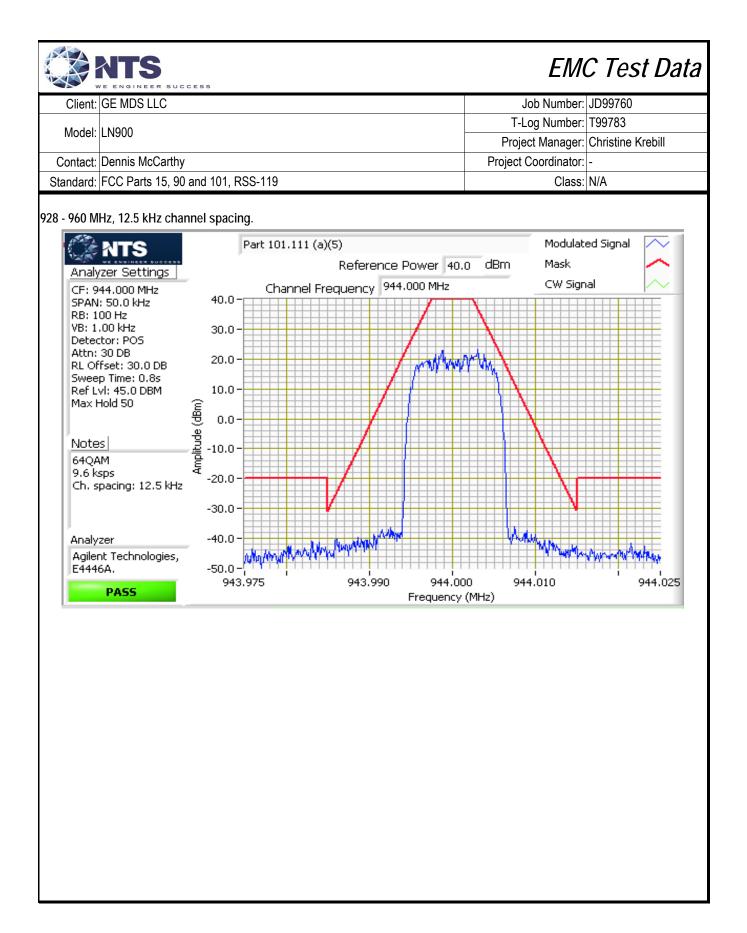
Target power: 10 Watts (40 dBm). QAM modulaiton; need to know rated power and tolerance which cannot exceed measured power Limited Modular approval

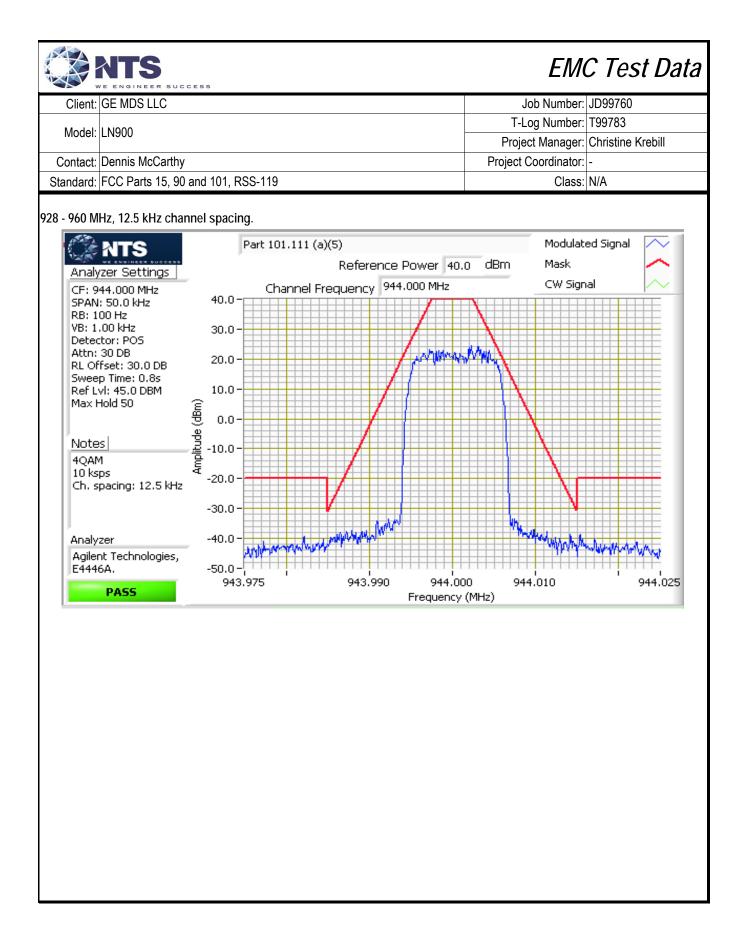
Client: GE MDS LLC Job Number: JD99760 Model: LN900 T-Log Number: T97783 Contact: Dennis McCarthy Project Manager: Christine Krebill Contact: Dennis McCarthy Project Coordinator: Class: N/A Standard: FCC Parts 15, 90 and 101, RSS-119 Class: N/A Xun #1: Output Power Config. Used: 1 Class: N/A Test Enginee: Denici Config. Used: 1 Standard: FCC Parts 15, 90 and 101, RSS-119 Class: None Cable Loss: 00.dB Config. Used: 1 Test Enginee:: Denici Config. Used: 1 Test Location: FT Lab #4b EUT Voltage: 13.8 VDC Cable D(5): None Total Loss: 30.0 dB Cable D(5): None Attenuator: 30.0 dB Standard: #2007 Power Frequency (MHz) Output Power Antenuator: IDS: Asset #1878 + #2097 Power 94.0 0.7 1174.90 16.5 Pass 57.2 524.007 40 dBm 960.0 <		NTS VE ENGINEER SUCCESS						EM	C Test Data
Model: LN900 Project Manager: Christine Krebill Contact: Dennis McCarthy Project Coordinator: - Standard: FCC Parts 15, 90 and 101, RSS-119 Class: N/A Run #1: Output Power Config. Used: 1 - Date of Test: 10/28/2015 Config Change: None - Test Engineer: Deniz Demirci Config Change: None - Test Location: FT Lab #4b EUT Voltage: 13.8 VDC - Cable Loss: 0.0 dB Attenuator: 30.0 dB Total Loss: 30.0 dB Power Cable ID(s): None Attenuator IDs: Asset #1878 + #2097 - Power Frequency (MHz) Output Power Antenna Result EIRP Setting ² Frequency (MHz) Output Power Antenna Result dBm W 40 dBm 928.0 40.7 11749.0 16.5 Pass 57.2 524.807 40 dBm 960.0 40.9 12302.7 16.5 Pass 57.4 549.541 Note 1: Output power measured using a peak po	Client:	GE MDS LLC						Job Number:	JD99760
Project Manager: Christine KrebillContact:Dennis McCarthyProject Coordinator:-Standard:FCC Parts 15, 90 and 101, RSS-119Class:N/ARun #1:Output Power Date of Test:10/28/2015 Test Engineer:Config. Used: 1 Config. Config. Config. Config. Config. Config. Used: 1 	Madal						T-I	Log Number:	Т99783
Standard: FCC Parts 15, 90 and 101, RSS-119 Class: N/A Run #1: Output Power Date of Test: 10/28/2015 Config. Used: 1 Test Engineer: Deniz Demirci Config Change: None Test Location: FT Lab #4b EUT Voltage: 13.8 VDC Cable Loss: 0.0 dB Attenuator: 30.0 dB Total Loss: 30.0 dB Cable ID(s): None Attenuator IDs: Asset #1878 + #2097 Total Loss: 30.0 dB Power Frequency (MHz) Output Power Antenna Result EIRP Setting ² Frequency (MHz) Output Power Antenna Result dBm W 40 dBm 928.0 40.7 11749.0 16.5 Pass 57.2 524.807 40 dBm 944.0 40.8 12022.6 16.5 Pass 57.4 549.541 Note 1: Output power measured using a peak power meter Iotal pass 57.4 549.541	wouer.	LIN900					Proje	ect Manager:	Christine Krebill
Run #1: Output Power Date of Test: 10/28/2015 Config. Used: 1 Test Engineer: Deniz Demirci Config Change: None Test Location: FT Lab #4b EUT Voltage: 13.8 VDC Cable Loss: 0.0 dB Attenuator: 30.0 dB Total Loss: 30.0 dB Cable ID(s): None Attenuator IDs: Asset #1878 + #2097 Power Frequency (MHz) Output Power Antenna (dBm) 1 mW Gain (dBi) Result EIRP 40 dBm 928.0 40.7 11749.0 16.5 Pass 57.2 524.807 40 dBm 960.0 40.9 12302.7 16.5 Pass 57.4 549.541	Contact:	Dennis McCarthy					Project	Coordinator:	-
Date of Test:10/28/2015Config. Used:1Test Engineer:Deniz DemirciConfig Change:NoneTest Location:FT Lab #4bEUT Voltage:13.8 VDCCable Loss:0.0 dBAttenuator:30.0 dBTotal Loss:30.0 dBCable ID(s):NoneAttenuator IDs:Asset #1878 + #2097Power Setting2Frequency (MHz)Output Power (dBm)1Antenna MWResultEIRP dBm40 dBm928.040.711749.016.5Pass57.2524.80740 dBm944.040.812022.616.5Pass57.3537.03240 dBm960.040.912302.716.5Pass57.4549.541Note 1:Output power measured using a peak power meter	Standard:	FCC Parts 15, 90 and 10	1, RSS-119					Class:	N/A
Cable ID(s): None Attenuator IDs: Asset #1878 + #2097 Power Setting ² Frequency (MHz) Output Power (dBm) ¹ Antenna mW Result Gain (dBi) EIRP dBm 40 dBm 928.0 40.7 11749.0 16.5 Pass 57.2 524.807 40 dBm 944.0 40.8 12022.6 16.5 Pass 57.3 537.032 40 dBm 960.0 40.9 12302.7 16.5 Pass 57.4 549.541 Note 1: Output power measured using a peak power meter	C Te	Date of Test: 10/28/2015 est Engineer: Deniz Demir	ci		Cor	nfig Change:	None		
Setting ² Frequency (MHz) (dBm) ¹ mW Gain (dBi) Result dBm W 40 dBm 928.0 40.7 11749.0 16.5 Pass 57.2 524.807 40 dBm 944.0 40.8 12022.6 16.5 Pass 57.3 537.032 40 dBm 960.0 40.9 12302.7 16.5 Pass 57.4 549.541 Note 1: Output power measured using a peak power meter				Att			78 + #2097	Total Loss:	30.0 dB
40 dBm 944.0 40.8 12022.6 16.5 Pass 57.3 537.032 40 dBm 960.0 40.9 12302.7 16.5 Pass 57.4 549.541 Note 1: Output power measured using a peak power meter	Setting ²		(dBm) ¹	mW		Result		W	
40 dBm 960.0 40.9 12302.7 16.5 Pass 57.4 549.541 Note 1: Output power measured using a peak power meter									
Note 1: Output power measured using a peak power meter									
	40 UDIII	900.0	40.9	12302.7	10.3	Pass	07.4	049.041	

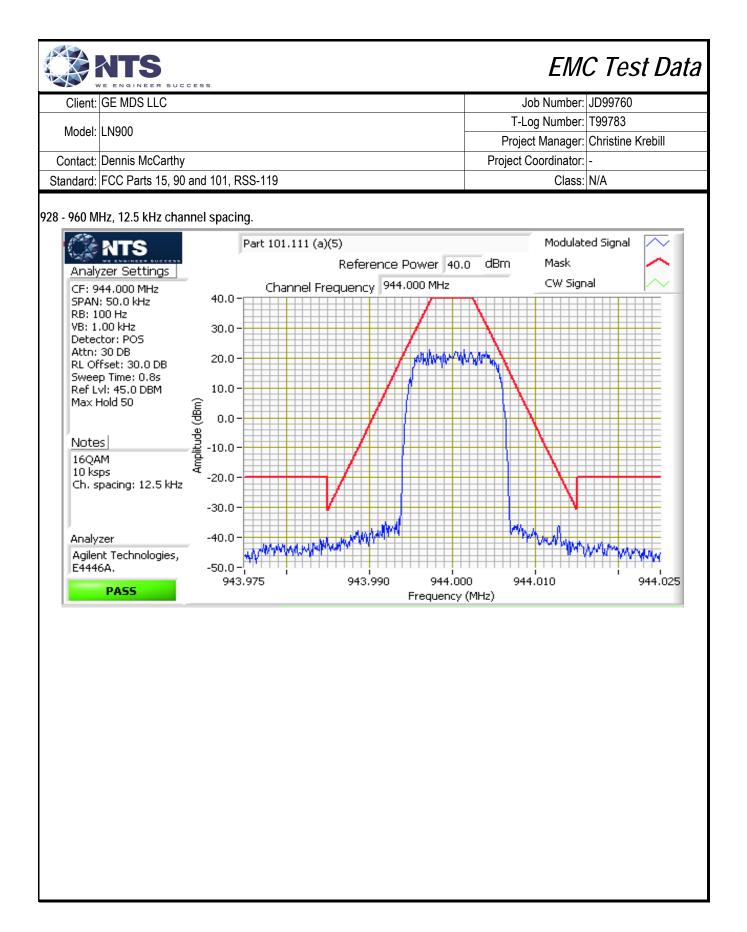
Cilent	: GE MDS LL	С				Job Number:	JD99760
		•				T-Log Number:	
Model	l: LN900					Project Manager:	
Control	: Dennis McC	orthy				Project Coordinator:	
		-	4 000 440			,	
Standard	EFCC Parts 1	5, 90 and 10	1, RSS-119			Class:	N/A
Dun #2+ S	pectral Mask	ECC Dart 1	01 111(2)(5)	and 101 11	1(2)(6)		
Kull #2. 3	Date of Test:				Config. Used:	1	
т	est Engineer:			are	Config Change:		
	Test Location:				EUT Voltage:		
					Ũ		
	EUT does n	ot transmit u	nmodulated	carrier with fu	II power setting. The mea	asured power levels (usin	g peak powe
Note 1:	-		•	•		nal 40 dBm reference pov	wer level use
	spectral mas	sk measuren	ents as wor	st case result	S.		
C				101			
Spectral w	lask at 928 - 9 Power	Data	Channel	Modulation		Emission	Result
	setting	rate	plan	wouldion	Frequency (MHz)	mask	Result
	40 dBm	9.6 ksps	12.5 kHz	4QAM	944.0	101.111(a)(5)	Pass
		9.6 ksps	12.5 kHz	16QAM	944.0	101.111(a)(5)	Pass
	40 dBm	0.0 1000		64QAM	944.0	101.111(a)(5)	Pass
	40 dBm 40 dBm	9.6 ksps				101.111(a)(J)	
	40 dBm 40 dBm 40 dBm	9.6 ksps 10.0 ksps	12.5 kHz 12.5 kHz	4QAM	944.0	101.111(a)(5)	Pass
	40 dBm	9.6 ksps 10.0 ksps 10.0 ksps					
	40 dBm 40 dBm	10.0 ksps	12.5 kHz	4QAM	944.0	101.111(a)(5)	Pass
	40 dBm 40 dBm 40 dBm	10.0 ksps 10.0 ksps	12.5 kHz 12.5 kHz	4QAM 16QAM	944.0 944.0 944.0 944.0	101.111(a)(5) 101.111(a)(5) 101.111(a)(5) 101.111(a)(6)	Pass Pass
	40 dBm 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm	10.0 ksps 10.0 ksps 10.0 ksps	12.5 kHz 12.5 kHz 12.5 kHz 25.0 kHz 25.0 kHz	4QAM 16QAM 64QAM 4QAM 16QAM	944.0 944.0 944.0 944.0 944.0	101.111(a)(5) 101.111(a)(5) 101.111(a)(5) 101.111(a)(6) 101.111(a)(6)	Pass Pass Pass
	40 dBm 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm	10.0 ksps 10.0 ksps 10.0 ksps 16.0 ksps 16.0 ksps 16.0 ksps	12.5 kHz 12.5 kHz 12.5 kHz 25.0 kHz 25.0 kHz 25.0 kHz	4QAM 16QAM 64QAM 4QAM 16QAM 64QAM	944.0 944.0 944.0 944.0 944.0 944.0 944.0	101.111(a)(5) 101.111(a)(5) 101.111(a)(5) 101.111(a)(6) 101.111(a)(6) 101.111(a)(6)	Pass Pass Pass Pass
	40 dBm 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm	10.0 ksps 10.0 ksps 10.0 ksps 16.0 ksps 16.0 ksps 16.0 ksps 20.0 ksps	12.5 kHz 12.5 kHz 12.5 kHz 25.0 kHz 25.0 kHz 25.0 kHz 50.0 kHz	4QAM 16QAM 64QAM 4QAM 16QAM 64QAM 4QAM	944.0 944.0 944.0 944.0 944.0 944.0 944.0 944.0	101.111(a)(5) 101.111(a)(5) 101.111(a)(5) 101.111(a)(6) 101.111(a)(6) 101.111(a)(6) 101.111(a)(6)	Pass Pass Pass Pass Pass Pass Pass
	40 dBm 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm 40 dBm	10.0 ksps 10.0 ksps 10.0 ksps 16.0 ksps 16.0 ksps 16.0 ksps	12.5 kHz 12.5 kHz 12.5 kHz 25.0 kHz 25.0 kHz 25.0 kHz	4QAM 16QAM 64QAM 4QAM 16QAM 64QAM	944.0 944.0 944.0 944.0 944.0 944.0 944.0	101.111(a)(5) 101.111(a)(5) 101.111(a)(5) 101.111(a)(6) 101.111(a)(6) 101.111(a)(6)	Pass Pass Pass Pass Pass Pass

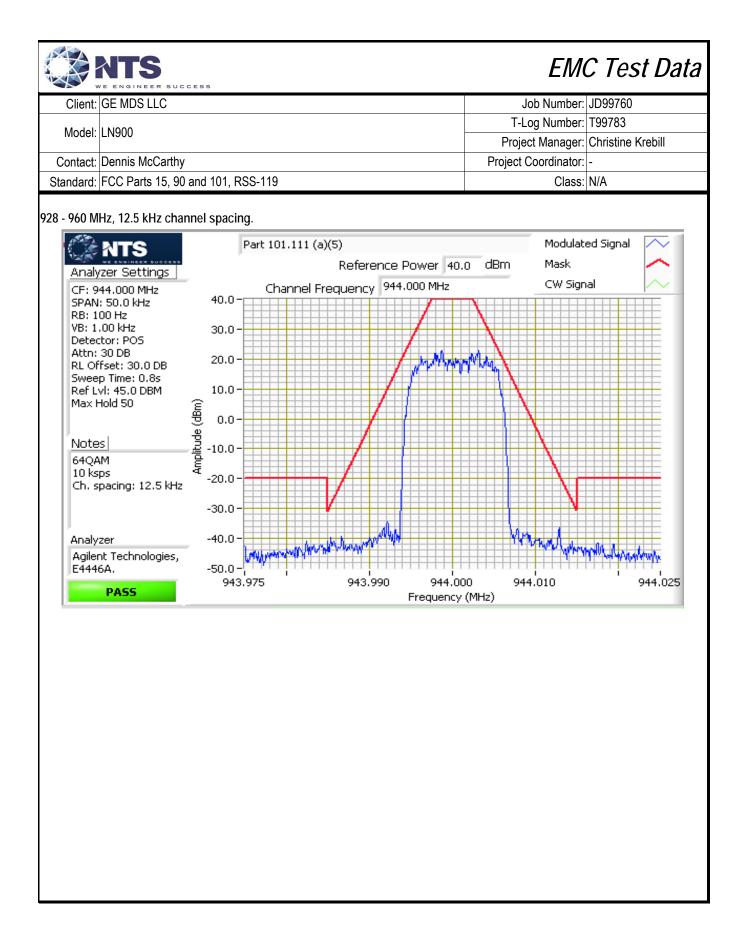


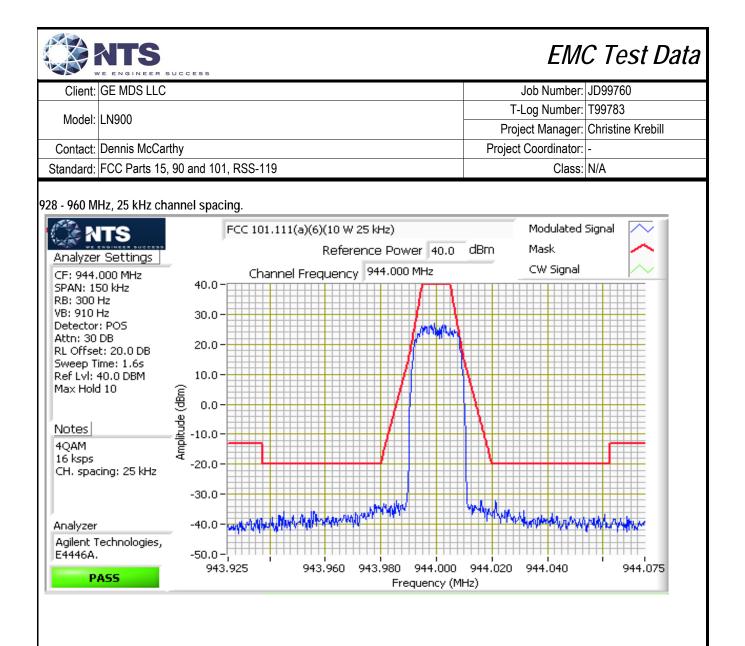


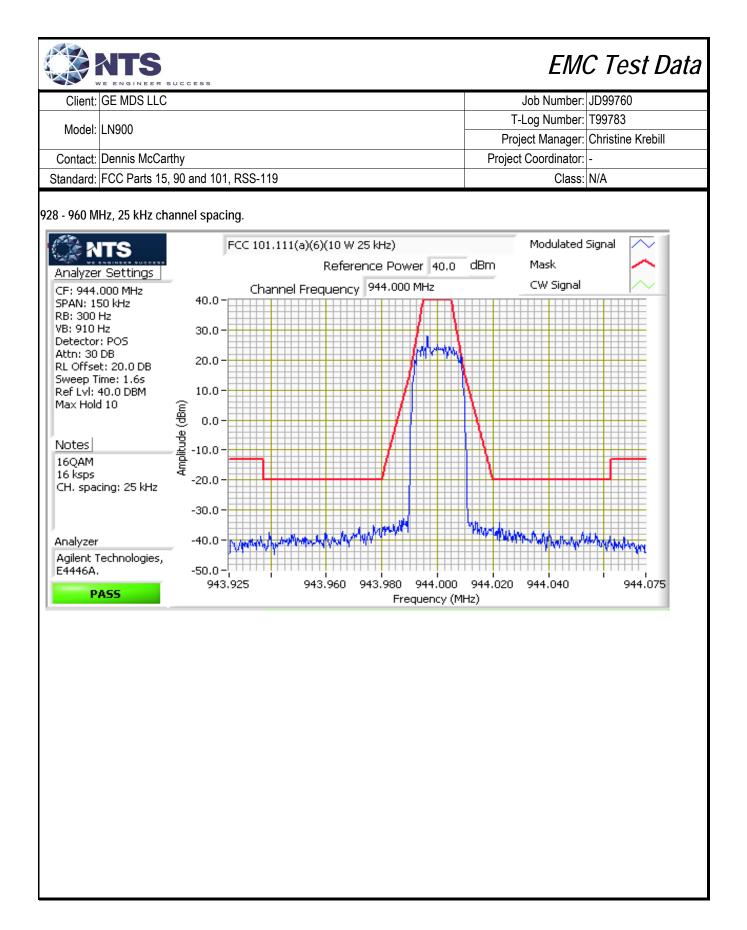


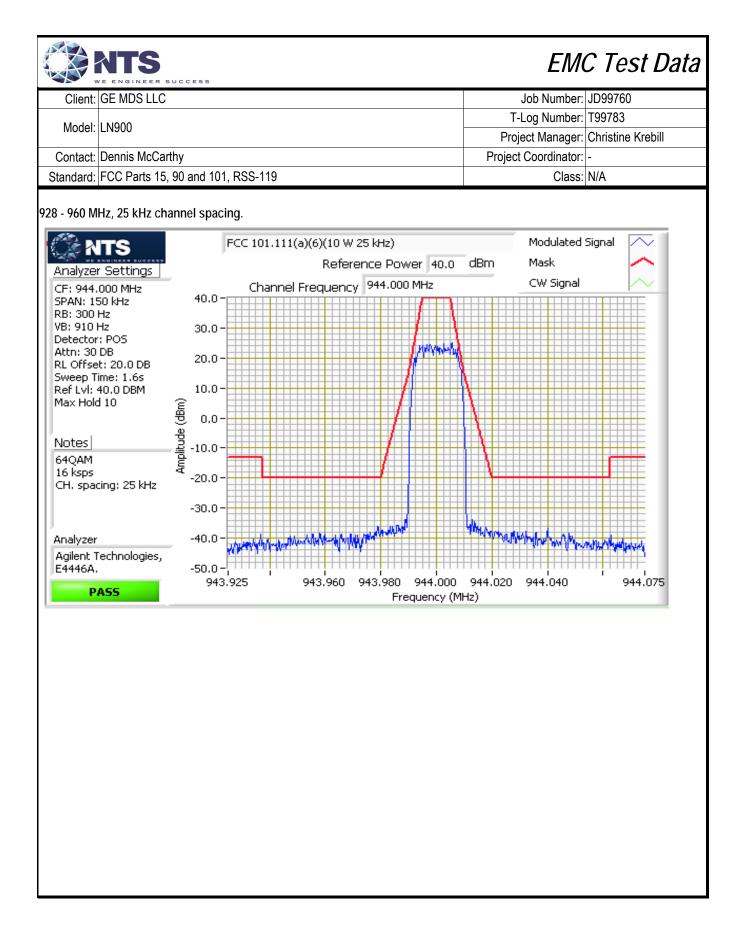


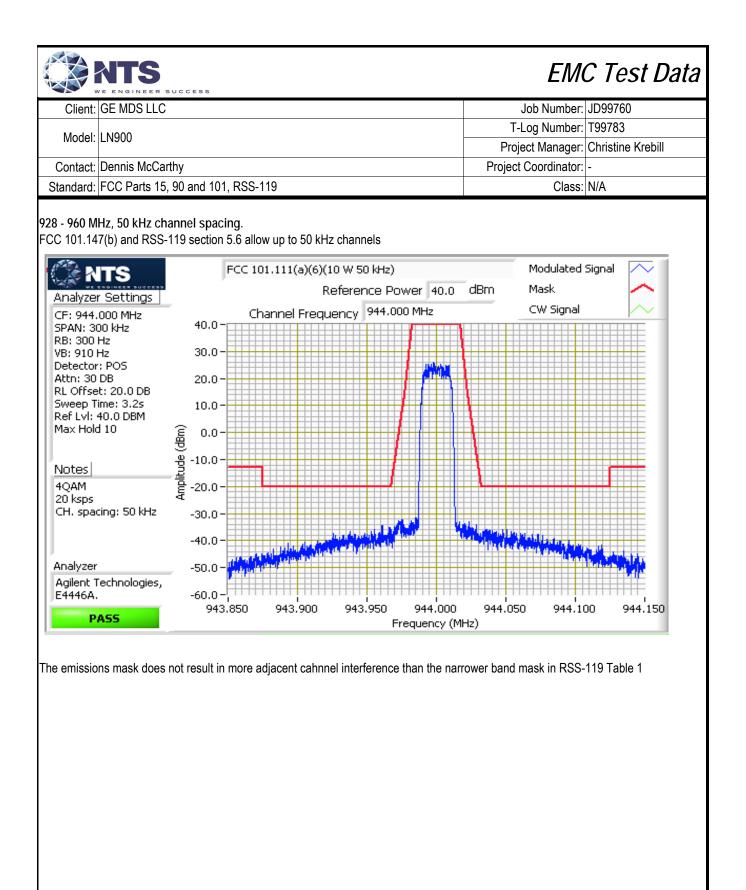


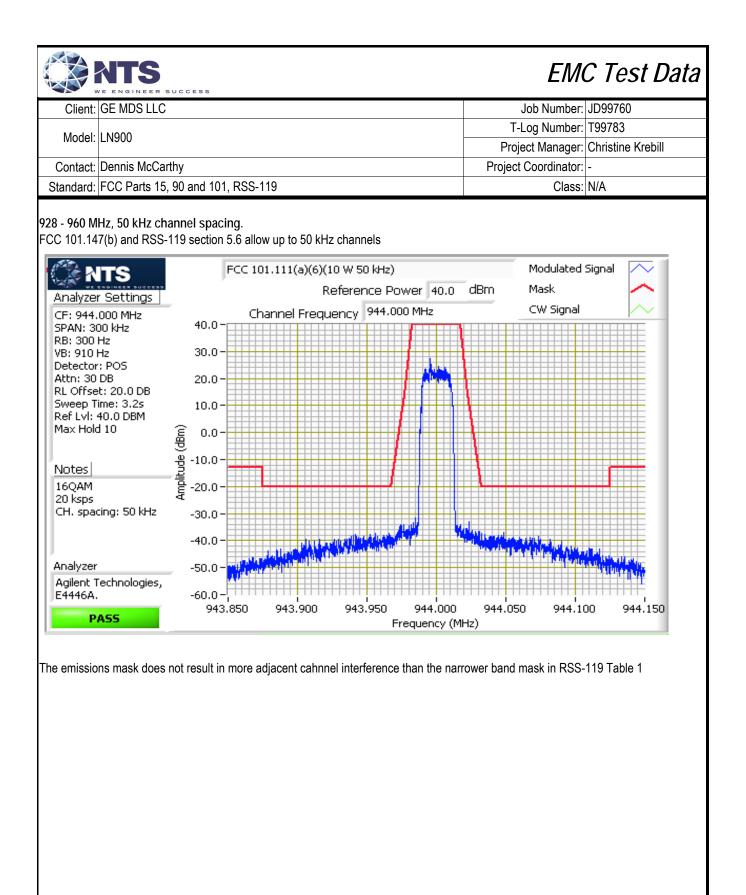


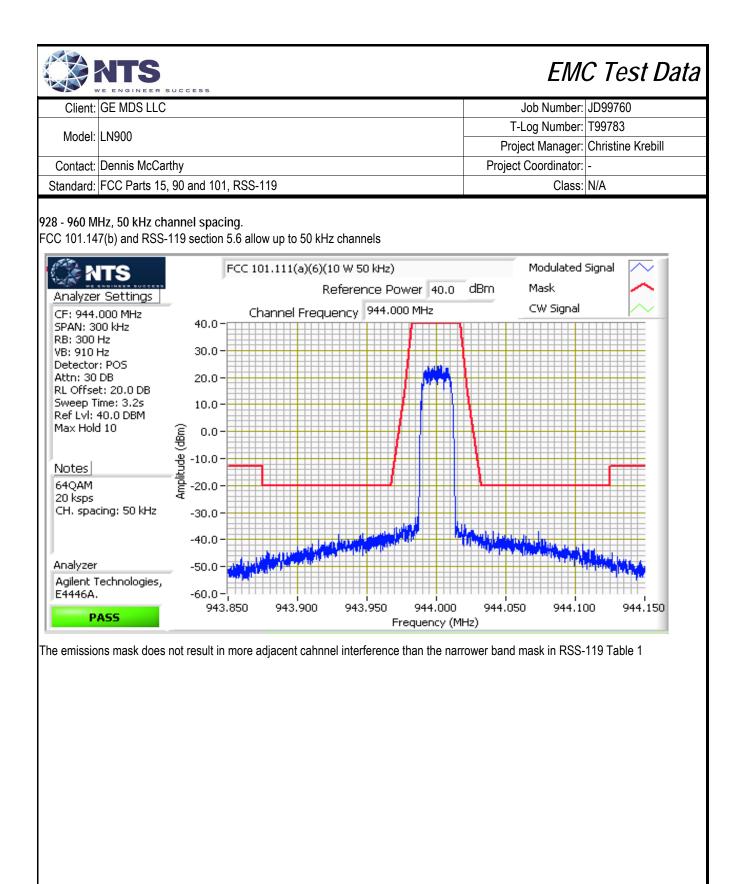




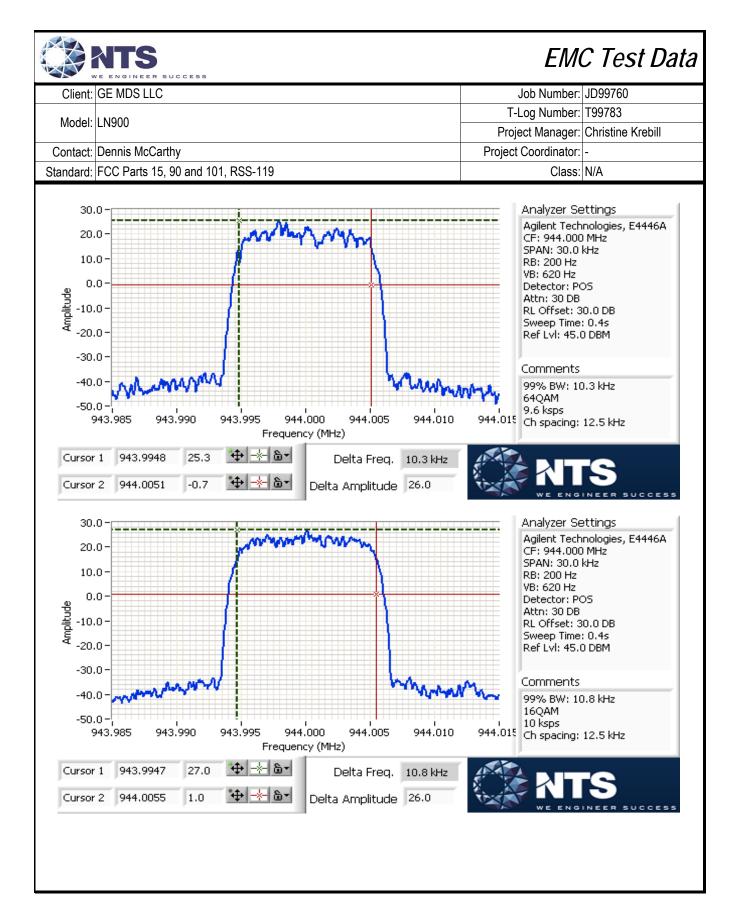


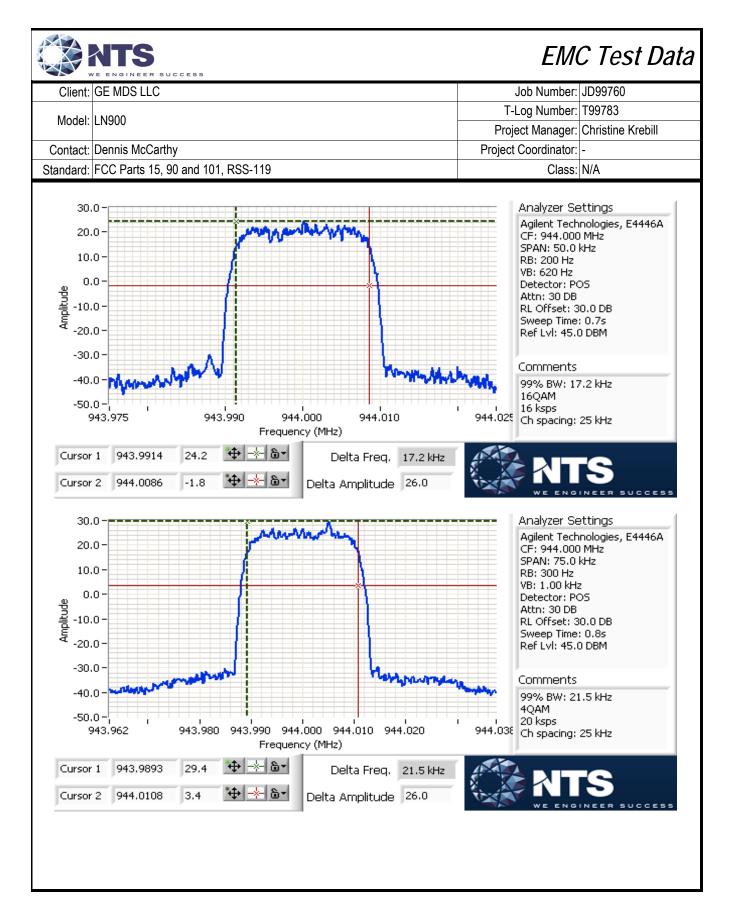




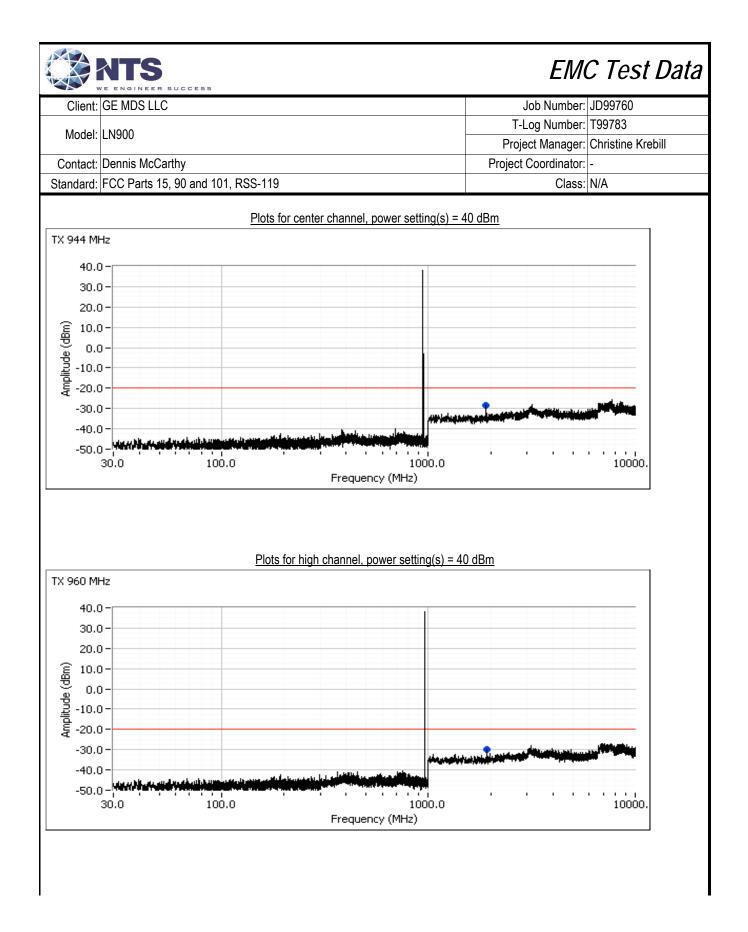


Standard: FCC Parts 15, 90 and 101, RSS-119 Class: N/A
Project Manager: Christine KContact:Dennis McCarthyProject Coordinator:-Standard:FCC Parts 15, 90 and 101, RSS-119Class:N/An #3:Signal Bandwidth Date of Test:10/28/2015Config. Used: 1 Config Change: None EUT Voltage:13.8 VDCTest Engineer:Deniz Demirci PowerConfig Change:None EUT Voltage:13.8 VDCPowerData rateChannel planModulation Frequency (MHz)Resolution Bandwidth 99%Bandwidth (kHz) 99%40 dBm9.6 ksps12.5 kHz4QAM944.0200 Hz10.340 dBm9.6 ksps12.5 kHz64QAM944.0200 Hz10.340 dBm10.0 ksps12.5 kHz4QAM944.0200 Hz10.340 dBm10.0 ksps12.5 kHz16QAM944.0200 Hz10.840 dBm10.0 ksps12.5 kHz16QAM944.0200 Hz10.840 dBm10.0 ksps12.5 kHz64QAM944.0200 Hz10.740 dBm10.0 ksps12.5 kHz64QAM944.0200 Hz10.740 dBm10.0 ksps25.0 kHz40AM944.0200 Hz17.140 dBm16.0 ksps25.0 kHz16QAM944.0200 Hz17.140 dBm16.0 ksps25.0 kHz16QAM944.0200 Hz17.2
Standard: FCC Parts 15, 90 and 101, RSS-119 Class: N/A un #3: Signal Bandwidth Date of Test: 10/28/2015 Config. Used: 1 Config. Used: 1 Test Engineer: Deniz Demirci Config Change: None EUT Voltage: 13.8 VDC Test Location: FT Lab #4b EUT Voltage: 13.8 VDC Bandwidth (kHz) Power Data Channel plan Modulation Frequency (MHz) Resolution Bandwidth (kHz) 40 dBm 9.6 ksps 12.5 kHz 4QAM 944.0 200 Hz 10.3 40 dBm 9.6 ksps 12.5 kHz 4QAM 944.0 200 Hz 10.3 40 dBm 9.6 ksps 12.5 kHz 4QAM 944.0 200 Hz 10.3 40 dBm 9.6 ksps 12.5 kHz 4QAM 944.0 200 Hz 10.3 40 dBm 10.0 ksps 12.5 kHz 4QAM 944.0 200 Hz 10.8 40 dBm 10.0 ksps 12.5 kHz 4QAM 944.0 200 Hz 10.8 40 dBm 10.0 ksps 12.5 kHz
Im #3: Signal Bandwidth Date of Test: 10/28/2015 Config. Used: 1 Test Engineer: Deniz Demirci Config Change: None Test Location: FT Lab #4b EUT Voltage: 13.8 VDC Power Data Channel plan Modulation Frequency (MHz) Resolution Bandwidth Bandwidth (kHz) 99% 40 dBm 9.6 ksps 12.5 kHz 4QAM 944.0 200 Hz 10.3 40 dBm 9.6 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.3 40 dBm 10.0 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.3 40 dBm 10.0 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.3 40 dBm 10.0 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.8 40 dBm 10.0 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.8 40 dBm 10.0 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.8 40 dBm 10.0 ksps 12.5 kHz 64QAM
n #3: Signal Bandwidth Date of Test: 10/28/2015 Config. Used: 1 Test Engineer: Deniz Demirci Config Change: None Test Location: FT Lab #4b EUT Voltage: 13.8 VDC Power Data Channel Modulation Frequency (MHz) Resolution Bandwidth (kHz) Bandwidth 99% 40 dBm 9.6 ksps 12.5 kHz 4QAM 944.0 200 Hz 10.3 40 dBm 9.6 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.3 40 dBm 9.6 ksps 12.5 kHz 4QAM 944.0 200 Hz 10.3 40 dBm 10.0 ksps 12.5 kHz 4QAM 944.0 200 Hz 10.3 40 dBm 10.0 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.3 40 dBm 10.0 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.3 40 dBm 10.0 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.8 40 dBm 10.0 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.8 40 dBm 10.0 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.7 40 dBm 10.0 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.7 40 dBm 16.0 ksps 25.0 kHz 4QAM 944.0 200 Hz 17.1 40 dBm 16.0 ksps 25.0 kHz 16QAM 944.0 200 Hz 17.1
Date of Test: 10/28/2015 Config. Used: 1 Test Engineer: Deniz Demirci Config Change: None Test Location: FT Lab #4b EUT Voltage: 13.8 VDC Power Data Channel plan Modulation Frequency (MHz) Resolution Bandwidth Bandwidth (kHz) setting rate plan Modulation Frequency (MHz) Resolution Bandwidth 99% 40 dBm 9.6 ksps 12.5 kHz 4QAM 944.0 200 Hz 10.3 40 dBm 9.6 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.3 40 dBm 9.6 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.3 40 dBm 10.0 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.3 40 dBm 10.0 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.8 40 dBm 10.0 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.8 40 dBm 10.0 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.7 40 dBm 10.0 ksps 12.5 kHz 64QAM 944.0 <
Test Engineer: Deniz Demirci Test Location: FT Lab #4bConfig Change: None EUT Voltage: 13.8 VDCPowerData planChannel planModulation Frequency (MHz)Resolution BandwidthBandwidth (kHz) 99%40 dBm9.6 ksps12.5 kHz4QAM944.0200 Hz10.340 dBm9.6 ksps12.5 kHz16QAM944.0200 Hz10.340 dBm9.6 ksps12.5 kHz64QAM944.0200 Hz10.340 dBm10.0 ksps12.5 kHz64QAM944.0200 Hz10.840 dBm10.0 ksps12.5 kHz16QAM944.0200 Hz10.840 dBm10.0 ksps12.5 kHz64QAM944.0200 Hz10.740 dBm10.0 ksps12.5 kHz64QAM944.0200 Hz10.740 dBm16.0 ksps25.0 kHz40AM944.0200 Hz17.140 dBm16.0 ksps25.0 kHz16QAM944.0200 Hz17.140 dBm16.0 ksps25.0 kHz16QAM944.0200 Hz17.1
Test Location: FT Lab #4b EUT Voltage: 13.8 VDC Power Data Channel Modulation Frequency (MHz) Resolution Bandwidth (kHz) setting rate plan Frequency (MHz) Resolution Bandwidth 99% 40 dBm 9.6 ksps 12.5 kHz 4QAM 944.0 200 Hz 10.3 40 dBm 9.6 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.3 40 dBm 9.6 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.3 40 dBm 10.0 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.8 40 dBm 10.0 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.8 40 dBm 10.0 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.8 40 dBm 10.0 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.7 40 dBm 10.0 ksps 25.0 kHz 64QAM 944.0 200 Hz 10.7
Power Data Channel Modulation Frequency (MHz) Resolution Bandwidth 99% 40 dBm 9.6 ksps 12.5 kHz 4QAM 944.0 200 Hz 10.3 40 dBm 9.6 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.3 40 dBm 9.6 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.3 40 dBm 9.6 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.3 40 dBm 10.0 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.3 40 dBm 10.0 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.8 40 dBm 10.0 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.8 40 dBm 10.0 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.7 40 dBm 10.0 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.7 40 dBm 16.0 ksps 25.0 kHz 4QAM 944.0
setting rate plan Frequency (MHZ) Bandwidth 99% 40 dBm 9.6 ksps 12.5 kHz 4QAM 944.0 200 Hz 10.3 40 dBm 9.6 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.3 40 dBm 9.6 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.3 40 dBm 9.6 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.3 40 dBm 10.0 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.8 40 dBm 10.0 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.8 40 dBm 10.0 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.8 40 dBm 10.0 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.7 40 dBm 16.0 ksps 25.0 kHz 4QAM 944.0 200 Hz 17.1 40 dBm 16.0 ksps 25.0 kHz 16QAM 944.0 200 Hz 17.2 <
setting rate plan Frequency (MHZ) Bandwidth 99% 40 dBm 9.6 ksps 12.5 kHz 4QAM 944.0 200 Hz 10.3 40 dBm 9.6 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.3 40 dBm 9.6 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.3 40 dBm 9.6 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.3 40 dBm 10.0 ksps 12.5 kHz 4QAM 944.0 200 Hz 10.8 40 dBm 10.0 ksps 12.5 kHz 4QAM 944.0 200 Hz 10.8 40 dBm 10.0 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.7 40 dBm 10.0 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.7 40 dBm 10.0 ksps 25.0 kHz 4QAM 944.0 200 Hz 10.7 40 dBm 16.0 ksps 25.0 kHz 4QAM 944.0 200 Hz 17.1
40 dBm 9.6 ksps 12.5 kHz 4QAM 944.0 200 Hz 10.3 40 dBm 9.6 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.3 40 dBm 9.6 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.3 40 dBm 9.6 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.3 40 dBm 10.0 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.8 40 dBm 10.0 ksps 12.5 kHz 4QAM 944.0 200 Hz 10.8 40 dBm 10.0 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.8 40 dBm 10.0 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.7 40 dBm 10.0 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.7 40 dBm 16.0 ksps 25.0 kHz 4QAM 944.0 200 Hz 17.1 40 dBm 16.0 ksps 25.0 kHz 16QAM 944.0 200 Hz 17.
40 dBm 9.6 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.3 40 dBm 9.6 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.3 40 dBm 10.0 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.3 40 dBm 10.0 ksps 12.5 kHz 4QAM 944.0 200 Hz 10.8 40 dBm 10.0 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.8 40 dBm 10.0 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.7 40 dBm 10.0 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.7 40 dBm 16.0 ksps 25.0 kHz 4QAM 944.0 200 Hz 17.1 40 dBm 16.0 ksps 25.0 kHz 16QAM 944.0 200 Hz 17.1
40 dBm 9.6 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.3 40 dBm 10.0 ksps 12.5 kHz 4QAM 944.0 200 Hz 10.8 40 dBm 10.0 ksps 12.5 kHz 4QAM 944.0 200 Hz 10.8 40 dBm 10.0 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.8 40 dBm 10.0 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.7 40 dBm 10.0 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.7 40 dBm 16.0 ksps 25.0 kHz 4QAM 944.0 200 Hz 17.1 40 dBm 16.0 ksps 25.0 kHz 16QAM 944.0 200 Hz 17.1
40 dBm 10.0 ksps 12.5 kHz 4QAM 944.0 200 Hz 10.8 40 dBm 10.0 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.8 40 dBm 10.0 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.8 40 dBm 10.0 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.7 40 dBm 16.0 ksps 25.0 kHz 4QAM 944.0 200 Hz 17.1 40 dBm 16.0 ksps 25.0 kHz 16QAM 944.0 200 Hz 17.1
40 dBm 10.0 ksps 12.5 kHz 16QAM 944.0 200 Hz 10.8 40 dBm 10.0 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.7 40 dBm 16.0 ksps 25.0 kHz 4QAM 944.0 200 Hz 10.7 40 dBm 16.0 ksps 25.0 kHz 4QAM 944.0 200 Hz 17.1 40 dBm 16.0 ksps 25.0 kHz 16QAM 944.0 200 Hz 17.2
40 dBm 10.0 ksps 12.5 kHz 64QAM 944.0 200 Hz 10.7 40 dBm 16.0 ksps 25.0 kHz 4QAM 944.0 200 Hz 17.1 40 dBm 16.0 ksps 25.0 kHz 16QAM 944.0 200 Hz 17.1 40 dBm 16.0 ksps 25.0 kHz 16QAM 944.0 200 Hz 17.2
40 dBm 16.0 ksps 25.0 kHz 16QAM 944.0 200 Hz 17.2
40 dBm 16.0 ksps 25.0 kHz 64QAM 944.0 200 Hz 17.1
40 dBm 20.0 ksps 50.0 kHz 4QAM 944.0 300 Hz 21.5
40 dBm 20.0 ksps 50.0 kHz 16QAM 944.0 300 Hz 21.5
40 dBm 20.0 ksps 50.0 kHz 64QAM 944.0 300 Hz 21.2
e 1: 99% bandwidth measured in accordance with ANSI C63.10, with RB between 1% and 5% of the measured bandwidth. ≥ 3*RB and Span ≥ 1.5% and ≤ 5% of measured bandwidth.

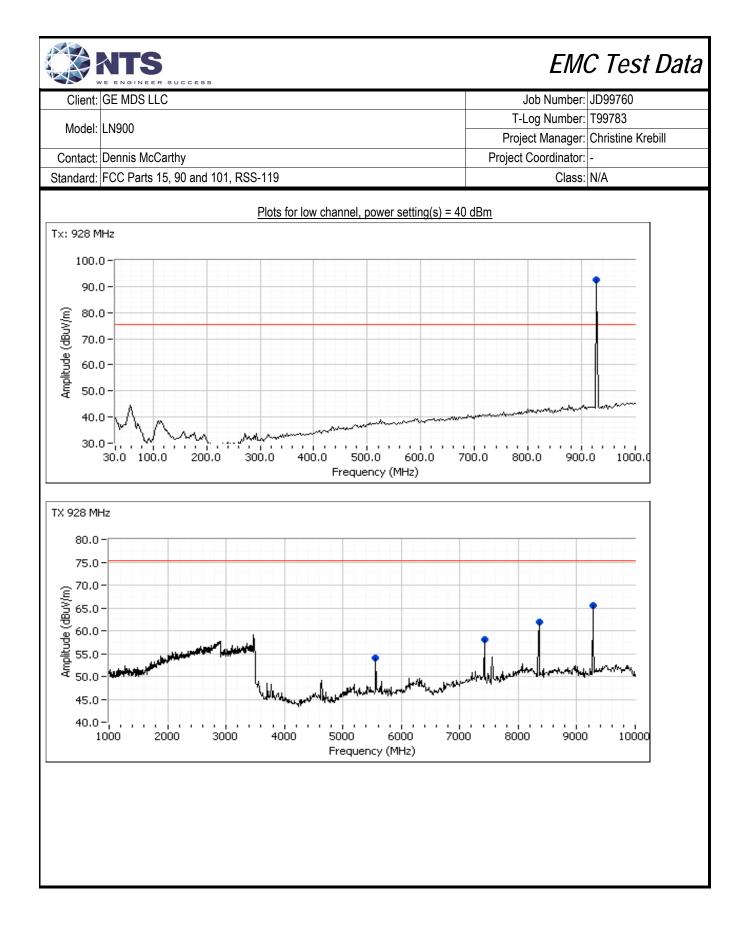


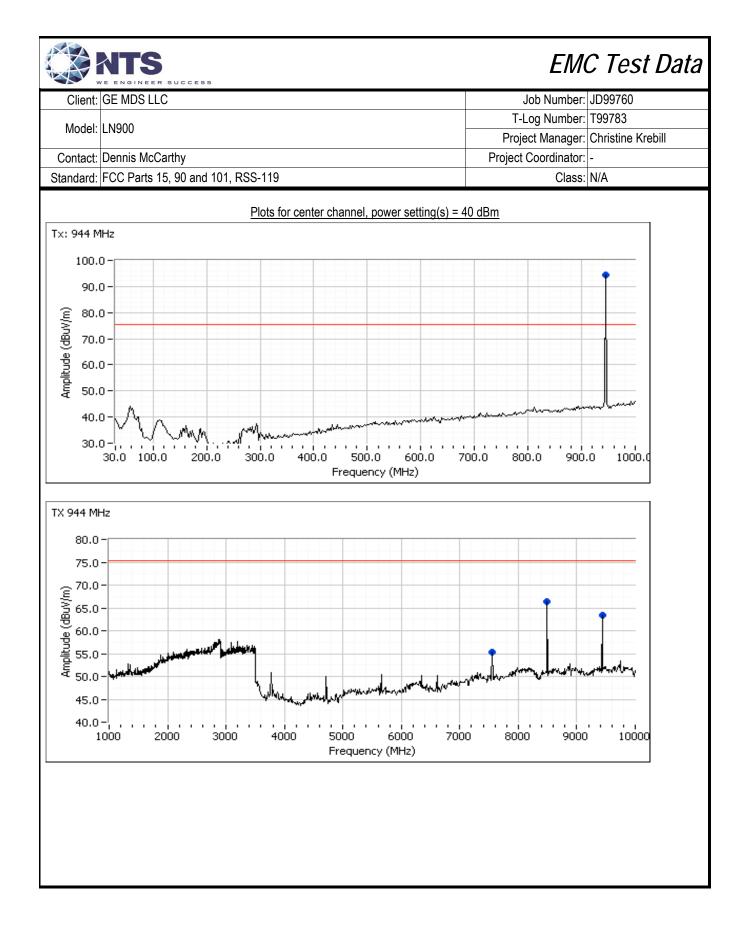


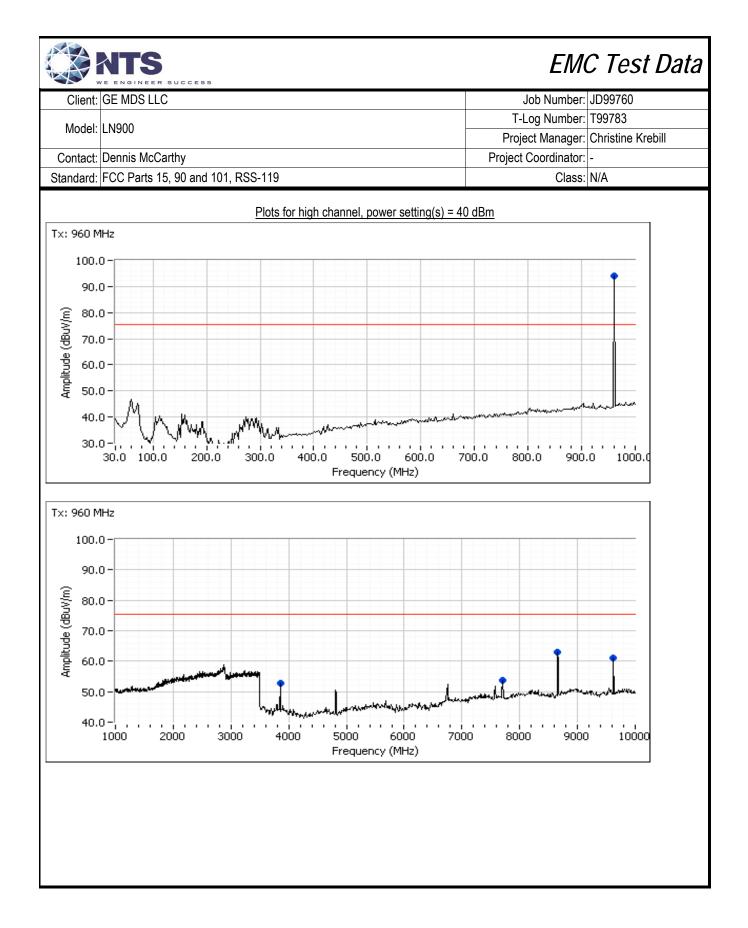
Client:	GE MDS LL	.C		Job Number:	JD99760			
Model	LN900			T-Log Number:	og Number: T99783			
wouer.	LINSUU			Project Manager: Christine Krebill				
	Dennis McC	-		Project Coordinator: -				
Standard:	FCC Parts	15, 90 and 10	1, RSS-119				Class:	N/A
un #4: O	ut of Band S	purious Emi	ssions, Cor	nducted				
	Date of Test:	12/11/2015	Config. Used:					
	est Engineer:		. # 4 D			nfig Change:		
I	est Location:	Fremont Lab) #4B		t	EUT Voltage:	13.8 VDC	
requency	Level	AC	FCC F	Part 90	Detector	Comments		Chann
MHz	dBμV	Line	Limit	Margin				MHz
1856.000	-27.7	RF Port	-20.0	-7.7	PK		-RB 1 MHz; VB: 3 MHz	928
1000 000	<u> </u>	DE Dort	20 0	0.2				011
920.160 ne limit is TX 928 M	Hz	RF Port RF Port CC Part 90 M		-8.3 -5.5	PK PK Inel, power s		<u>-RB 1 MHz; VB: 8 MHz</u> -RB 1 MHz; VB: 8 MHz	944 960
1920.160	-25.5 aken from F	RF Port	-20.0 ask D	-5.5	РК	PK (CISPR)	-RB 1 MHz; VB: 8 MHz	
1920.160 ne limit is	-25.5 aken from F	RF Port	-20.0 ask D	-5.5	РК	PK (CISPR)	-RB 1 MHz; VB: 8 MHz	
1920.160 he limit is TX 928 M 40. 30.	-25.5 aken from F Hz D -	RF Port	-20.0 ask D	-5.5	РК	PK (CISPR)	-RB 1 MHz; VB: 8 MHz	
1920.160 ne limit is TX 928 M 40, 30, 20,	-25.5 aken from F Hz D -	RF Port	-20.0 ask D	-5.5	РК	PK (CISPR)	-RB 1 MHz; VB: 8 MHz	
1920.160 ne limit is TX 928 M 40, 30, 20,	-25.5 aken from F Hz D - D - D - D -	RF Port	-20.0 ask D	-5.5	РК	PK (CISPR)	-RB 1 MHz; VB: 8 MHz	
1920.160 ne limit is TX 928 M 40, 30, 20,	-25.5 aken from F Hz D - D - D - D - D -	RF Port	-20.0 ask D	-5.5	РК	PK (CISPR)	-RB 1 MHz; VB: 8 MHz	
1920.160 he limit is TX 928 M 40, 30, 20,	-25.5 aken from F Hz D - D - D - D - D - D - D - D -	RF Port	-20.0 ask D	-5.5	РК	PK (CISPR)	-RB 1 MHz; VB: 8 MHz	
1920.160 ne limit is TX 928 M 40, 30, 20, (ugp) ep. 10, -10, ugp -20,	-25.5 aken from F	RF Port	-20.0 ask D	-5.5	РК	PK (CISPR)	-RB 1 MHz; VB: 8 MHz	
1920.160 he limit is TX 928 M 40. 30. 20. (ugp) appril 0. -10. 40. -20. -30.	-25.5 aken from F	RF Port	-20.0 ask D	-5.5	РК	PK (CISPR)	-RB 1 MHz; VB: 8 MHz	
1920.160 he limit is TX 928 M 40. 30. 20. (mg) appropriation 10. -10. -30. -30. -40.	-25.5 aken from F	RF Port	-20.0 lask D <u>Plots</u>	-5.5	РК	PK (CISPR)	-RB 1 MHz; VB: 8 MHz	960
TX 928 M 40. 30. 20. (ugp) 0. 10. -10. -30. -30. -40.	-25.5 aken from F	RF Port	-20.0 lask D <u>Plots</u>	-5.5	РК	PK (CISPR)	-RB 1 MHz; VB: 8 MHz	



Client:	: GE MDS LLC							Job Number:		JD99760	
	1,1,000							T-Log Number:		T99783	
Model:	: LN900							Project Manager: C		Christine Krebill	
Contact.	Dennis McC	arthy		Project Coordinator: -							
	FCC Parts 1	-	Class: N/A								
	It of Band S			diated				01000.			
	Approximate f	field strength	-								
	aken from FC										
	reliminary n Date of Test:				C	onfig. Used:	1				
	st Engineer:			are		ifig Change:					
	est Location:					UT Voltage:		and 5 VDC			
								-			
Frequency	Level	Pol	FCC F	Part 101	Detector	Azimuth	Height	Comments		Channe	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters				
928.000	92.4	Н	-	-	PK	110	1.0	Carrier frequ	lency	928.000	
7424.000	58.1	V	75.3	-17.2	Peak	183	2.0			928.00	
8352.000	61.9	V	75.3	-13.4	Peak	183	2.0			928.00	
9280.000	65.6	V	75.3	-9.7	Peak	105	1.5			928.00	
5568.000	54.0	V	75.3	-21.3	Peak	82	2.5			928.00	
944.000	94.3	V	-	-	PK	174	1.5	Carrier frequ	lency	944.00	
7552.000	55.4	V	75.3	-19.9	Peak	354	2.5				
8496.000 9440.000	66.3 63.4	<u>Н</u> V	75.3 75.3	-9.0 -11.9	Peak	137 225	2.0 2.5				
960.000	94.1	 H	75.5	-11.9	Peak PK	89	2.5	Corrior from	10001	960.00	
9600.230	61.3	<u>н</u> Н	- 75.3	-14.0	PK	124	1.0	Carrier frequ	B 3 MHz;Pe	960.00	
8639.870	68.0	 H	75.3	-14.0	PK	223	1.0		B 3 MHz;Pe	960.000	
7679.560	59.1	V	75.3	-16.2	PK	184	1.5		B 3 MHz;Pe	960.000	
3840.040	54.2	V	75.3	-21.1	PK	43	2.0		B 3 MHz;Pe	960.000	
lote 1: lote 2:	propagation for erp limits	equation: E= , the dipole g is field streng	=√(30PG)/d. gain (2.2dBi) gth limit is de	This limit is on has not bee etermined us	conservative - n included. T ing substitutic	it does not on he erp or eir	consider the p for all sigr	presence of	ard using the f the ground pla than 20dB of r	ane and,	







		SUCCESS						EM	C Tesi	t Data	
Client:	: GE MDS LLC							Job Number:	JD99760		
				T-	Log Number:	T99783					
Model:	LN900			Project Manager: Christine Krebi			ebill				
Contact:	Dennis McCarthy							Project Coordinator: -			
	FCC Parts 1		1. RSS-119	Class: N/A							
otaridara		o, oo aa .o	.,					0.0001	,, .		
	Final Field S		Substitutio	n Measurer							
	Date of Test:					onfig. Used:					
	st Engineer:					nfig Change:					
Te	est Location:	Fremont Cha	amber #3		E	UT Voltage:	13.8 VDC a	ind 5 VDC			
	tronath										
EUT Field S Frequency	Level	Pol	FCC P	art 101	Detector	Azimuth	Height	Comments		Channel	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	Johnnenta			
7424.050	58.2	V	75.3	-17.1	PK	184	1.8	RB 1 MHz;VB 3	3 MHz;Peak	928	
8353.180	68.0	V	75.3	-7.3	PK	184	1.8	RB 1 MHz;VB 3	-	928	
9278.720	67.7	V	75.3	-7.6	PK	102	1.6	RB 1 MHz;VB 3	-	928	
5567.980	53.8	V	75.3	-21.5	PK	83	2.5	RB 1 MHz;VB		928	
7551.920	60.5	V	75.3	-14.8	PK	355	2.5	RB 1 MHz;VB 3		944	
9439.890	70.8	V	75.3	-4.5	PK	222	2.5	RB 1 MHz;VB		944	
8494.760	66.6	H	75.3	-8.7	PK	135	2.0	RB 1 MHz;VB		944	
9600.230	61.3	Н	75.3	-14.0	PK	124	1.0	RB 1 MHz;VB		960	
8639.870	68.0	Н	75.3	-7.3	PK	223	1.9	RB 1 MHz;VB		960	
7679.560	59.1	V	75.3	-16.2	PK	184	1.4	RB 1 MHz;VB		960	
3840.040	54.2	V	75.3	-21.1	PK	43	2.0	RB 1 MHz;VB 3		960	
								d in the standa			
Note 1:	propagation	equation: E=	:√(30PG)/d.`	This limit is o	conservative ·	- it does not	consider the	presence of	the ground p	lane and,	
NOLE I.	for erp limits, the dipole gain (2.2dBi) has not been included. The erp or eirp for all signals with less than 20dB of margin										
	relative to th										
Note 2:	Measuremer	nts are made	with the ant	enna port te	rminated.						

Client		C SUCCESS			lob Number:	100760					
Client:	t: GE MDS LLC										
Model:	I: LN900							T-Log Number:			
								_	Christine Krebill		
	Dennis McC			Project	Coordinator:	-					
Standard:	FCC Parts 1	5, 90 and 10	1, RSS-119	Class: N/A							
	n measurem	nents									
	Cubatit	ution measur	omonto	Cite			anta	aina Linait	ana Linait	Maraia	
Frequency				Site		JT measurem		eirp Limit	erp Limit	Margin	
MHz	Pin ¹	Gain ²	FS ³	Factor ⁴	FS⁵	eirp (dBm)	erp (dBm)	dBm	dBm	dB	
8494.760	-40.1	10.9	66.6	95.8	66.6	-29.2	-31.4		-20.0	-11.4	
8639.870	-40.1	10.6	66.2	95.7	68.0	-27.7	-29.9		-20.0	-9.9	
9600.230	-40.2	11.8	67.6	96.0	61.3	-34.7	-36.9		-20.0	-16.9	
/ertical	Out at t			0.1		IT	1			<u> </u>	
Frequency		ution measur		Site		IT measurem		eirp Limit	erp Limit	Margin	
MHz	Pin ¹	Gain ²	FS ³	Factor ⁴	FS⁵	eirp (dBm)	. ()	dBm	dBm	dB	
7424.050	-40.0	10.1	67.1	97.0	58.2	-38.8	-41.0		-20.0	-21.0	
7551.920	-40.0	10.6	67.6	97.0	60.5	-36.5	-38.7		-20.0	-18.7	
7679.560	-40.0	10.7	67.6	96.9	59.1	-37.8	-40.0		-20.0	-20.0	
8353.180	-40.1	11.1	67.4	96.4	68.0	-28.4	-30.6		-20.0	-10.6	
9278.720	-40.2	11.4	68.0	96.8	67.7	-29.1	-31.3		-20.0	-11.3	
9439.890	-40.2	11.5	68.1	96.8	70.8	-26.0	-28.2		-20.0	-8.2	
lote 1:	Pin is the inp	out power (de	3m) to the su	ubstitution an	tenna						
lote 2:	Gain is the g	gain (dBi) for	the substitut	ion antenna.							
lote 3:	FS is the fiel	ld strength (d	IBuV/m) mea	asured from t	he substitut	on antenna.					
lote 4:	Site Factor -	this is the si	te factor to c	onvert from a	a field streng	gth in dBuV/m	to an eirp in	dBm.			
lote 5:	EUT field str	rength as me	asured durin	g initial run.							

Client: GE MDS LLC Job Number: JD99760 Model: IN900 T-Log Number: 199783 Contact: Dennis McCarthy Project Manager: Christine Krebill Contact: Dennis McCarthy Project Coordinator: - Standard: FCC Parts 15, 90 and 101, RSS-119 Class: N/A Run #6: Frequency Stability Config. Used: 1 - Test Engineer: Deniz Demirci Config. Used: 1 - Test Location: FT Lab #4b EUT Voltage: 13.8 VDC Nominal Frequency: 937.50000 MHz - - Frequency Stability Over Temperature The EUT was soaked at each temperature for a minimum of 30 minutes prior to making the measurements to ensure the EUT and hamber had stabilized at that temperature. - Temperature Frequency Measured Drift - (Celsius) (MHz) (Hz) (ppm) - 10 937.500080 96 0.1 - 10 937.500280 280 0.3 - 20 937.500280		E ENGINEER SUCCESS			EIVIO	C Test D	
Model: [N900 Project Manager: Christine Krebill Contact: Dennis McCarthy Project Coordinator: - Standard: FCC Parts 15, 90 and 101, RSS-119 Class: N/A Run #6: Frequency Stability Class: N/A Standard: FCC Parts 15, 90 and 101, RSS-119 Class: N/A Run #6: Frequency Stability Class: N/A Test Engineer: Deniz Demirci Config Change: None Test Location: FT Lab #4b EUT Voltage: 13.8 VDC Nominal Frequency: 937,50000 MHz HE "requency Stability Over Temperature EUT was soaked at each temperature for a minimum of 30 minutes prior to making the measurements to ensure the EUT and shamber had stabilized at that temperature. "additabilized at that temperature. Immediation 0.2 -20 937,500090 90 0.1 -30 937,500295 -5 0.0 -20 937,500280 280 0.3 -30 937,500280 280 0.3 -30	Client:	GE MDS LLC			Job Number:	JD99760	
Project Manager Project Coordinator Standard: FCC Parts 15, 90 and 101, RSS-119 Class: N/A Run #6: Frequency Stability Class: N/A Run #6: Frequency Stability Class: N/A Run #6: Frequency Stability Config. Used: 1 Class: Test Engineer: Deniz Demirci Config Change: None EUT Voltage: 13.8 VDC Nominal Frequency: 937.50000 MHz EUT Voltage: 13.8 VDC Trequency Stability Over Temperature The EUT was soaked at each temperature for a minimum of 30 minutes prior to making the measurements to ensure the EUT and hamber had stabilized at that temperature. -30 937.500150 150 0.2 -20 937.500090 90 0.1 -10 937.500245 245 0.3 0 937.500280 250 0.3 40 937.500280 280 0.3 30 937.500280 280 0.3 30 937.500280 280 0.3 30 937.500280 280 0.3 Worst ca	Madalı				T-Log Number:	T99783	
Standard: FCC Parts 15, 90 and 101, RSS-119 Class: N/A Run #6: Frequency Stability Date of Test: 10/28/2015 Test Engineer: Deniz Demirci Test Location: FT Lab #4b Config. Used: 1 Config Change: None EUT Voltage: 13.8 VDC Nominal Frequency: 937.50000 MHz Frequency Stability Over Temperature The EUT was soaked at each temperature for a minimum of 30 minutes prior to making the measurements to ensure the EUT and shamber had stabilized at that temperature. Tamperature Frequency Measured Drift (Clesius) (MHz) (Hz) (ppm) -30 937.500090 90 0.1 -10 937.500090 90 0.1 -10 937.500090 90 0.1 -10 937.500200 250 0.3 -20 937.500200 280 0.3 -30 937.500200 280 0.3 -30 937.500200 280 0.3 -30 937.500200 280 0.3 -30 937.500200 280 0.3 -50 937.500200 280 0.3 -5	wodel:	LN900			Project Manager:	Christine Krebill	
Standard: FCC Parts 15, 90 and 101, RSS-119 Class: N/A Run #6: Frequency Stability Date of Test: 10/28/2015 Config. Used: 1 Test Engineer: Deniz Demirci Config Change: None EUT Voltage: 13.8 VDC Test Engineer: Deniz Demirci Config Change: None Test Location: FT Lab #4b EUT Voltage: 13.8 VDC Nominal Frequency: 937.50000 MHz Status Status Trequency Stability Over Temperature the EUT was soaked at each temperature for a minimum of 30 minutes prior to making the measurements to ensure the EUT and hamber had stabilized at that temperature. Temperature Frequency Measured Drift (Celsius) (MHz) (Hz) (ppm) -30 937.500090 90 0.1 -10 937.5000245 245 0.3 0 937.500200 250 0.3 20 937.500200 280 0.3 30 937.500200 280 0.3 30 937.500200 280 0.3 30 937.500200 280 0.3 worst case: 280 0.3 worst case:	Contact:	Dennis McCarthy			Project Coordinator:	-	
Date of Test: 10/28/2015 Config. Used: 1 Test Engineer: Deniz Demirci Config. Used: 1 Test Location: FT Lab #4b EUT Voltage: 13.8 VDC Nome Test Location: FT Lab #4b EUT Voltage: 13.8 VDC Nominal Frequency: 937.50000 MHz Trequency Stability Over Temperature In EUT was soaked at each temperature. Temperature Frequency Measured Drift (Celsius) (MHz) (H2) (ppm) -30 937.500090 90 0.1 -10 937.500096 96 0.1 0 937.5000260 260 0.3 20 937.500280 280 0.3 30 937.500280 280 0.3 0 937.500280 280 0.3 Worst case: 280 0.3 3			, RSS-119				
Date of Test: 10/28/2015 Config. Used: 1 Test Enginee:: Deniz Demirci Config Change: None Test Location: FT Lab #4b EUT Voltage: 13.8 VDC Nominal Frequency: 937.50000 MHz "requency Stability Over Temperature he EUT was soaked at each temperature for a minimum of 30 minutes prior to making the measurements to ensure the EUT and hamber had stabilized at that temperature. Temperature Frequency Measured Drift (Celsius) (MHz) (Hz) (ppm) -30 937.500090 90 0.1 -10 937.500096 96 0.1 10 937.500096 96 0.1 30 937.500280 280 0.3 20 937.500280 280 0.3 0 937.500280 280 0.3 0 937.500280 280 0.3 0 937.500280 280 0.3 0 937.500280 280 0.3 0 937.500280 280 0.3 0 937.500280 280 0.3 0 937.500260 60 0.1	¹						
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Trequency Stability Over Temperature The EUT was soaked at each temperature for a minimum of 30 minutes prior to making the measurements to ensure the EUT and shamber had stabilized at that temperature. Temperature Frequency Measured Drift (Celsius) (MHz) (Hz) (ppm) -30 937.500150 150 0.2 -20 937.500090 90 0.1 -10 937.500245 245 0.3 0 937.500096 96 0.1 10 937.499995 -5 0.0 20 937.500250 250 0.3 40 937.500280 280 0.3 50 937.500280 280 0.3 -0 937.500280 2		Neminal Francisco y	027 50000 MIL				
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-10 937.500245 245 0.3 0 937.50096 96 0.1 10 937.499995 -5 0.0 20 937.50050 50 0.1 30 937.500250 250 0.3 40 937.500280 280 0.3 50 937.500280 280 0.3 50 937.500280 280 0.3 Worst case: 60 0.3	-30	937.500150	150	0.2			
0 937.500096 96 0.1 10 937.499995 -5 0.0 20 937.50050 50 0.1 30 937.500280 250 0.3 40 937.500280 280 0.3 50 937.500280 280 0.3 50 937.500280 280 0.3 Worst case: 280 0.3	-20	937.500090	90	0.1			
10 937.499995 -5 0.0 20 937.50050 50 0.1 30 937.500250 250 0.3 40 937.500280 280 0.3 50 937.500280 280 0.3 Worst case: 0.3 Drift (DC) (MHz) (Hz) (ppm) 10 937.500060 60 0.1 00 937.500060 60 0.3 Worst case: 60			245				
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S0 937.500280 280 0.3 Worst case: 280 0.3 worst case: 280 0.3 requency Stability Over Input Voltage lominal Voltage range is 11.8 - 52.2 Vdc. Voltage Frequency Measured Drift (DC) (MHz) (Hz) (ppm) 10 937.500060 60 0.1 60 937.500060 60 0.1 Worst case: 60 0.3	20		050	0.2			
Worst case: 280 0.3 Frequency Stability Over Input Voltage Image: Stability Over Input Voltage Image: Stability Over Input Voltage Voltage range is 11.8 - 52.2 Vdc. Drift Image: Stability Over Input Voltage Voltage Frequency Measured Drift Image: Drift Image: Stability Over Input Voltage (DC) (MHz) (Hz) (ppm) Image: Stability Over Input Voltage 10 937.500060 60 0.1 Image: Stability Over Input Voltage 60 937.500060 60 0.3 Image: Stability Over Input Voltage	20 30	937.500250					
Voltage range is 11.8 - 52.2 Vdc. Voltage Frequency Measured Drift (DC) (MHz) (Hz) (ppm) 10 937.500060 60 0.1 60 937.500060 60 0.1 Worst case: 60 0.3 0.3	20 30 40	937.500250 937.500280	280	0.3			
Voltage range is 11.8 - 52.2 Vdc. Voltage Frequency Measured Drift (DC) (MHz) (Hz) (ppm) 10 937.500060 60 0.1 60 937.500060 60 0.1 Worst case:	20 30 40	937.500250 937.500280 937.500280	280 280	0.3			
Voltage range is 11.8 - 52.2 Vdc. Voltage Frequency Measured Drift (DC) (MHz) (Hz) (ppm) 10 937.500060 60 0.1 60 937.500060 60 0.1 Worst case:	20 30 40	937.500250 937.500280 937.500280	280 280	0.3			
Voltage Frequency Measured Drift (DC) (MHz) (Hz) (ppm) 10 937.500060 60 0.1 60 937.500060 60 0.1 Worst case:	20 30 40 50	937.500250 937.500280 937.500280 Worst case:	280 280 280	0.3			
Voltage Frequency Measured Drift (DC) (MHz) (Hz) (ppm) 10 937.500060 60 0.1 60 937.500060 60 0.1 Worst case:	20 30 40 50	937.500250 937.500280 937.500280 Worst case:	280 280 280	0.3			
(DC) (MHz) (Hz) (ppm) 10 937.500060 60 0.1 60 937.500060 60 0.1 Worst case: 60 0.3 0.3	20 30 40 50	937.500250 937.500280 937.500280 Worst case: Stability Over Input Volta	280 280 280 280	0.3			
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Worst case: 60 0.3	20 30 40 50 Frequency S Jominal Vol Voltage (DC)	937.500250 937.500280 937.500280 Worst case: Stability Over Input Volta Itage range is 11.8 - 52.2 Frequency Measured (MHz)	280 280 280 Mge Vdc. (Hz)	0.3 0.3 0.3 Drift (ppm)			
	20 30 40 50 Frequency S Jominal Vo Voltage (DC) 10	937.500250 937.500280 937.500280 Worst case: Stability Over Input Volta Itage range is 11.8 - 52.2 Frequency Measured (MHz) 937.500060	280 280 280 Mge Vdc. (Hz) 60	0.3 0.3 0.3 Drift (ppm) 0.1			
Note 1: Maximum drift of fundamental frequency before it shut down at 9.2 Vdc is 57 Hz.	20 30 40 50 Frequency S Jominal Vo Voltage (DC) 10	937.500250 937.500280 937.500280 Worst case: Stability Over Input Volta Itage range is 11.8 - 52.2 Frequency Measured (MHz) 937.500060 937.500060	280 280 280 Mge Vdc. (Hz) 60 60	0.3 0.3 0.3 <u>Drift</u> (ppm) 0.1 0.1			
Note 1: Maximum drift of fundamental frequency before it shut down at 9.2 Vdc is 57 Hz.	20 30 40 50 Frequency S Jominal Vo Voltage (DC) 10	937.500250 937.500280 937.500280 Worst case: Stability Over Input Volta Itage range is 11.8 - 52.2 Frequency Measured (MHz) 937.500060 937.500060	280 280 280 Mge Vdc. (Hz) 60 60	0.3 0.3 0.3 <u>Drift</u> (ppm) 0.1 0.1			
	20 30 40 50 Frequency S Iominal Vo Voltage (DC) 10	937.500250 937.500280 937.500280 Worst case: Stability Over Input Volta Itage range is 11.8 - 52.2 Frequency Measured (MHz) 937.500060 937.500060	280 280 280 Mge Vdc. (Hz) 60 60	0.3 0.3 0.3 <u>Drift</u> (ppm) 0.1 0.1			



EMC Test Data

Client:	GE MDS LLC	Job Number:	JD101659
Product	LN900	T-Log Number:	T101706
System Configuration:	Module	Project Manager:	Christine Krebill
Contact:	Dennis McCarthy	Project Coordinator:	-
Emissions Standard(s):	FCC Parts 90 and 101, RSS-119	Class:	-
Immunity Standard(s):	-	Environment:	Radio

EMC Test Data

For The

GE MDS LLC

Product

LN900

Date of Last Test: 5/26/2016

EMC Test Data

L		L'ENGINEER SUCCESS		
	Client:	GE MDS LLC	Job Number:	JD101659
	Model:	1 N000	T-Log Number:	T101706
	MOUEI.	EN900	Project Manager:	Christine Krebill
	Contact:	Dennis McCarthy	Project Coordinator:	-
	Standard:	FCC Parts 90 and 101, RSS-119	Class:	N/A

RSS 119 and FCC Part 90 Power, Occupied Bandwidth

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

General Test Configuration

NTS

All measurements are made with the EUT's rf port connected to the measurement instrument via an attenuator or dc-block if necessary. All amplitude measurements are adjusted to account for the attenuation between EUT and measuring instrument.

Ambient Conditions:	Temperature:	20-22 °C
	Rel. Humidity:	30-35 %

Summary of Results

Run #	Spacing	Data Rate	Test Performed	Limit	Pass / Fail	Result / Margin
1	-	-	Output Power	Determined at time of Licensing	Pass	40.8 dBm
2	12.5 kHz, 25.0 kHz	9.6 ksps 19.2 ksps	Spectral Mask	Mask D, G, J	Pass	Within mask
3	12.5 kHz, 25.0 kHz	9.6 ksps 19.2 ksps	99% or Occupied Bandwidth	11.25 kHz 20.0 kHz	Pass	10.2 kHz 15.4 kHz

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Notes

Part 90: 896-901MHz & 935-940MHz, 12.5 & 25 kHz channel spacings, 929-930MHz, 12.5 & 25 kHz channel spacings. RSS-119: 896-901MHz, 928-929 MHz, 931-935 MHz, 941-944 MHz, and 952-953 MHz, 12.5, 25 kHz channel spacings, 929-930 MHz and 931-932 MHz, 25 kHz channel spacing.

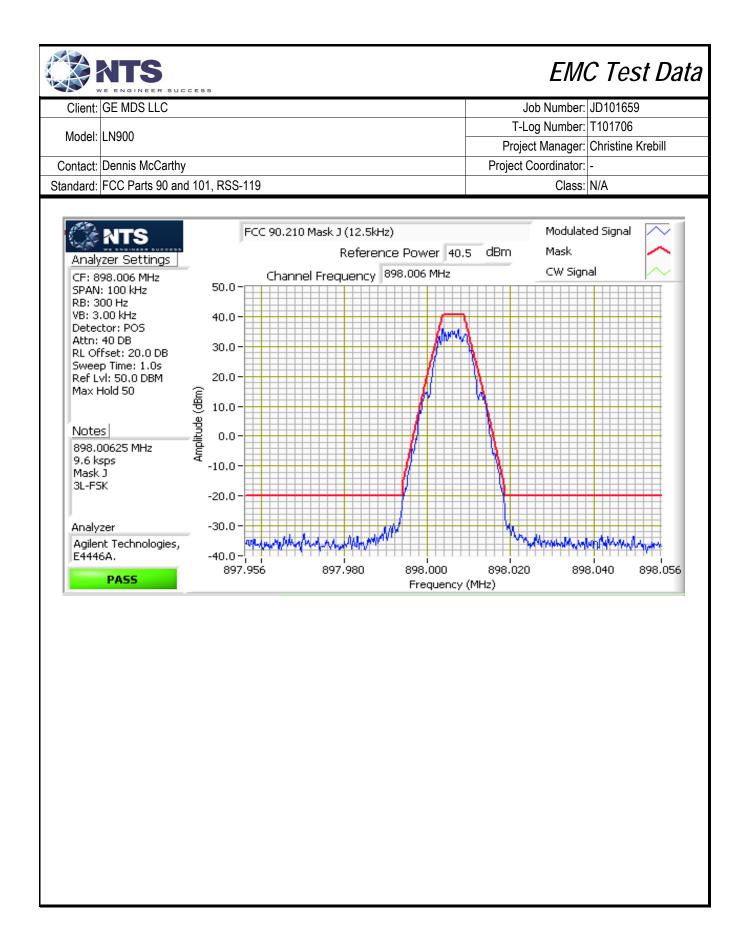
Target power: 10 Watts (40 dBm). 3-level FSK modulations; need to know rated power and tolerance which cannot exceed measured power. Power limits in § 90.205 (k), (m), § 90.635 & § 90.494

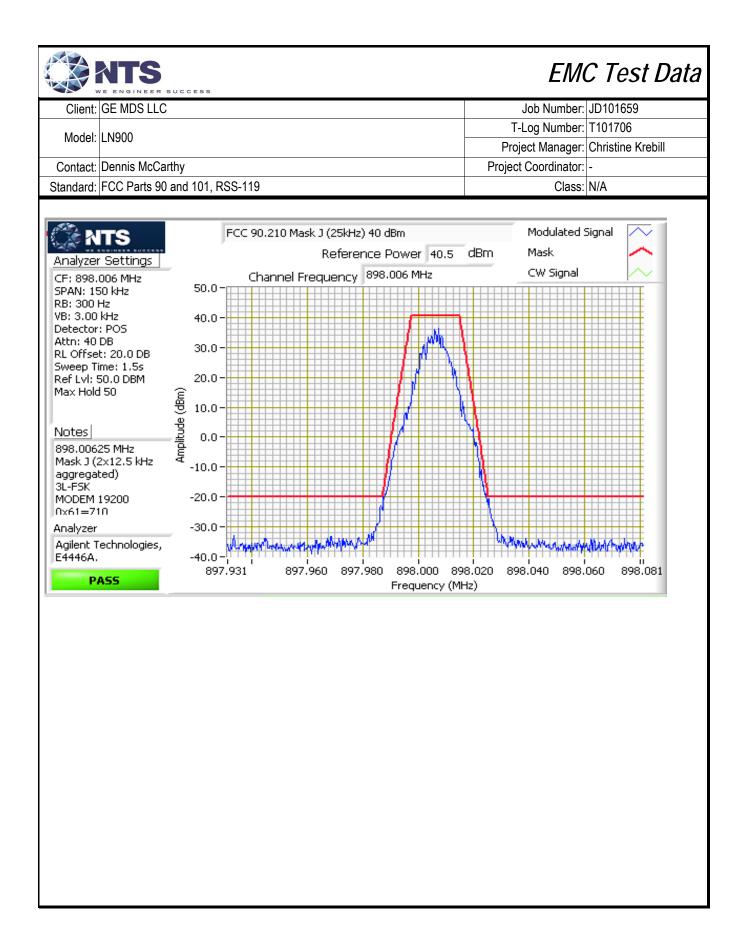
¹ FCC Part 90.213 (footnote 14) and RSS-119 Section 5.3 allow 1.5 ppm for control station operations.

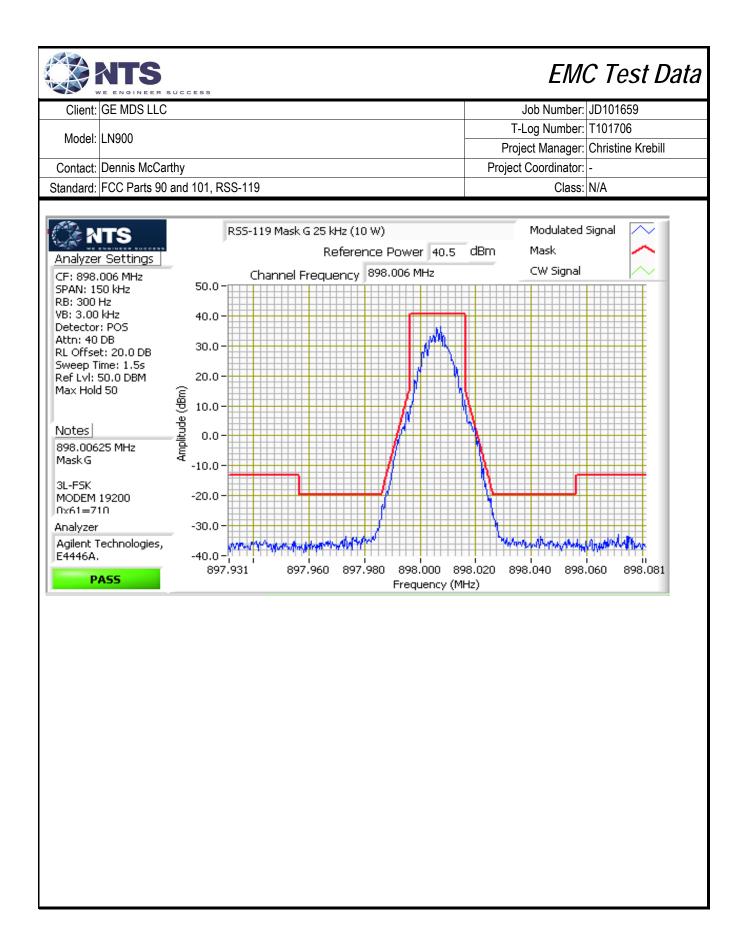
Limited Modular approval

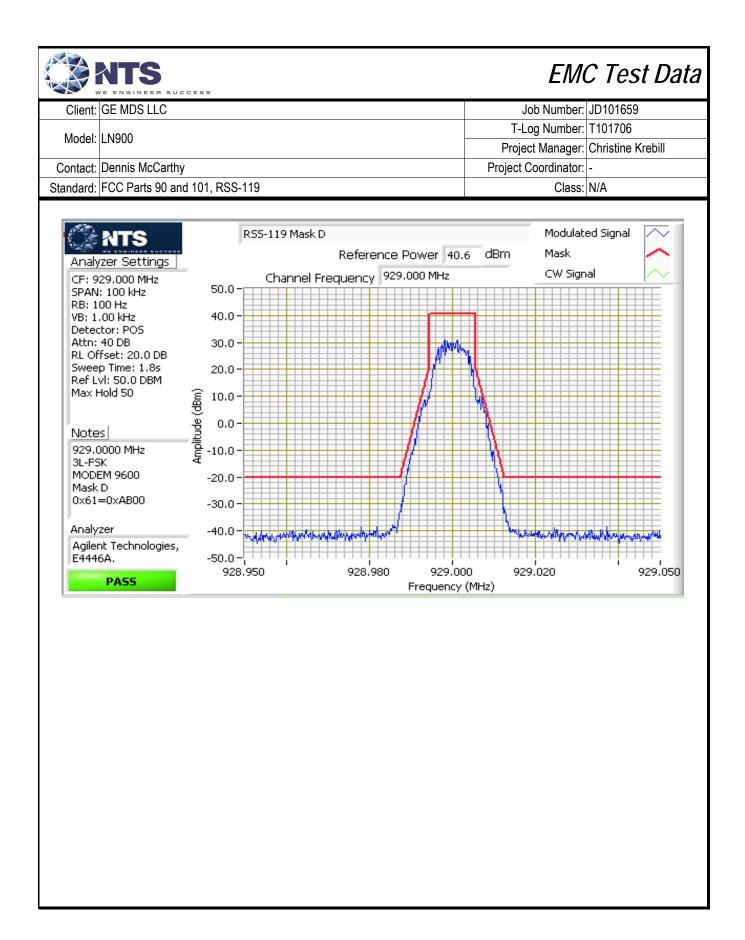
	ATS						EM	C Test Data			
Client:	GE MDS LLC				Job Number: JD101659						
Model:					T-L	og Number:	T101706				
WOUEI.	LINGOU	ect Manager:	Christine Krebill								
Contact: Dennis McCarthy Project Coordinator: -											
Standard:	FCC Parts 90 and 101, F	RSS-119					Class:	N/A			
Run #1: Ou	Itput Power										
Г	Date of Test: 23-May-16			С	onfig. Used:	1					
	st Engineer: Deniz Demir	ci			ifig Change:						
	est Location: FT Lab #4				UT Voltage:						
	Cable Lassy 0.0 JD			A 44 a 1			Tatal				
	Cable Loss: 0.0 dB Cable ID(s): -		٨.44	Attenuator: enuator IDs:			Total Loss:	20.0 QB			
	Uable 10(3)		Au	cilualui IDS.	1070.0						
FCC Part 90) & RSS-119										
Power	Frequency (MHz)		Power	Antenna	Result	El	RP				
Setting ²	,	(dBm) ¹	mW	Gain (dBi)	Result	dBm	W				
40 dBm	896.0	40.5	11220.2	16.5	Pass	57.0	501.187				
40 dBm	901.0	40.5	11220.2	16.5	Pass	57.0	501.187				
40 dBm	929.0	40.6	11481.5	16.5	Pass	57.1	512.861				
40 dBm	930.0	40.6	11481.5	16.5	Pass	57.1	512.861				
40 dBm	935.0	40.6	11481.5	16.5	Pass	57.1	512.861				
40 dBm	940.0	40.7	11749.0	16.5	Pass	57.2	524.807	J			
RSS-119 on	lv										
Power	•	Output	Power	Antenna		EI	RP	1			
Setting ²	Frequency (MHz)	(dBm) ¹	mW	Gain (dBi)	Result	dBm	W				
40 dBm	941.0	40.7	11749.0	16.5	Pass	57.2	524.807				
40 dBm	944.0	40.8	12022.6	16.5	Pass	57.3	537.032				
40 dBm	952.5	40.8	12022.6	16.5	Pass	57.3	537.032]			
	Note 1: Output power measured using a peak power meter Note 2: Power setting - the software power setting used during testing, included for reference only.										
Note 2:	Power setting - the softw	are power se	etting used a	uning testing,	included for	reference of	11 y .				

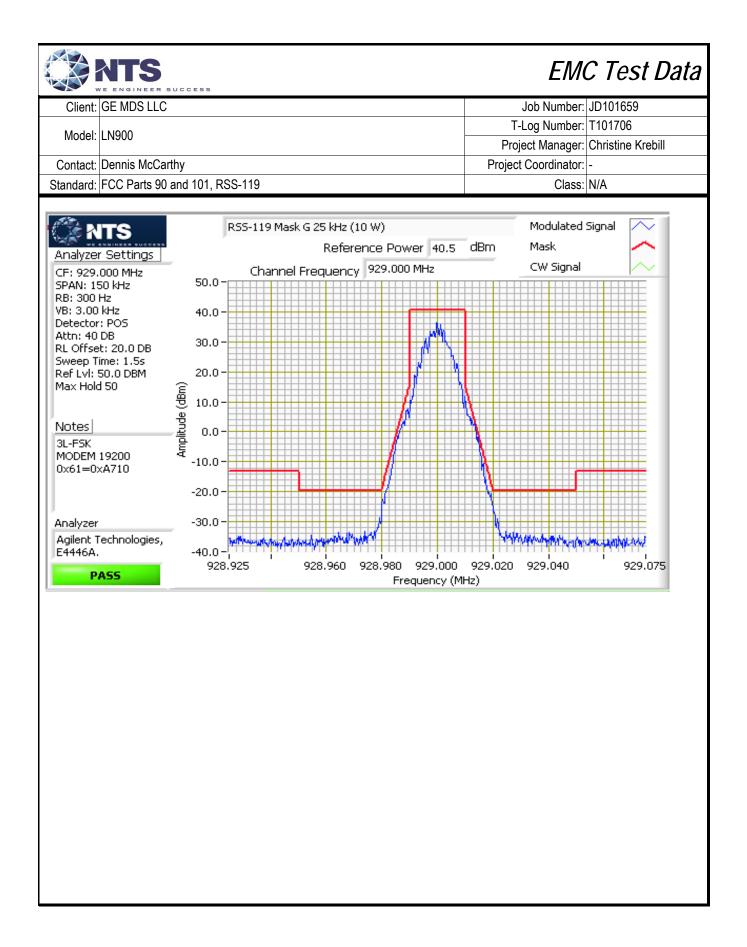
Model: L Contact: D Standard: F un #2: Spea SS-119 Mas lask G for 2! Da	Dennis McC FCC Parts 9 Actral Mask					T-L	ob Number: og Number: ct Manager:	
Contact: D Standard: F un #2: Spec SS-119 Mas ask G for 2! Da	Dennis McC FCC Parts 9 Actral Mask	•					•	
Contact: D Standard: F un #2: Spec SS-119 Mas ask G for 2! Da	Dennis McC FCC Parts 9 Actral Mask	•				Proje	ct Manager:	Christine Krehill
Standard: F un #2: Spe SS-119 Mas lask G for 2! Da	CC Parts 9	•					-	
2un #2: Spea 2SS-119 Mas lask G for 2! Da	ctral Mask	0 and 101, R				Project (Coordinator:	-
SS-119 Mas Aask G for 2 Da			RSS-119				Class:	N/A
	5 kHz chan ate of Test:	5 KHz chanr	nels (896-90 5/26/2016		0 MHz and J for 896-90 35-940 MHz), Mask D fo Config. Used Config Change	or 12.5 kHz cł : 1		
	t Location:		CI		EUT Voltage			
Note 1: P	Peak power	measuremen	nts were use	ed as a spectra	al mask power reference).		
)		le for 00/ 0				2 110)		
cun #za: Sp	Power	K for 896 - 9 Data	Channel	0 MHZ bands Modulation	FCC Part 90 and RSS	Emission	Result	I
	setting	rate	BW	wouldtion	Frequency (MHz)	mask	Result	
	40 dBm	9.6 ksps		3-level FSK	898.00625	J	Pass	
	40 dBm	19.2 ksps		3-level FSK	898.00625	J	Pass	
	40 dBm	19.2 ksps		3-level FSK	898.00625	G	Pass	
Run #2b: Sp	ectral Mas Power setting	k at 928 - 92 Data rate	9, 929 - 930 Channel BW	, 932-944 & 9 Modulation	52-953 MHz bands (RS Frequency (MHz)	SS-119) Emission mask	Result	
	40 dBm	9.6 ksps		3-level FSK	929.00000	D	Pass	
	40 dBm	19.2 ksps		3-level FSK	929.00000	G	Pass	
un #2c: Sp	Power setting	Data rate	Channel BW	I (FCC Part 9 Modulation	Frequency (MHz)	Emission mask	Result	
L	40 dBm	9.6 ksps	12.5 kHz	3-level FSK	929.48750	G	Pass	

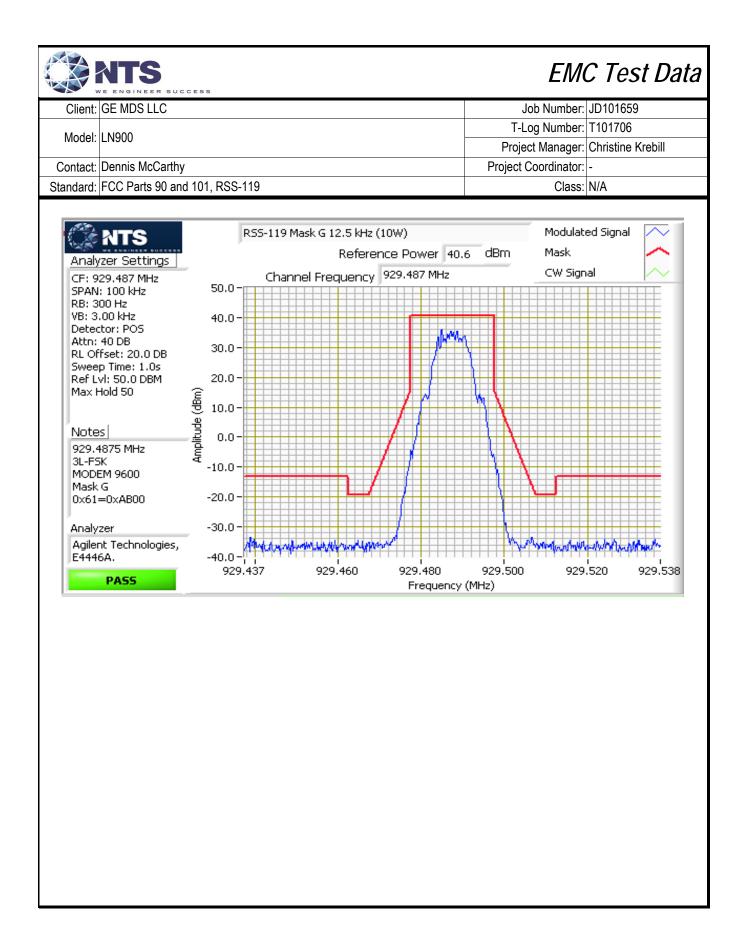




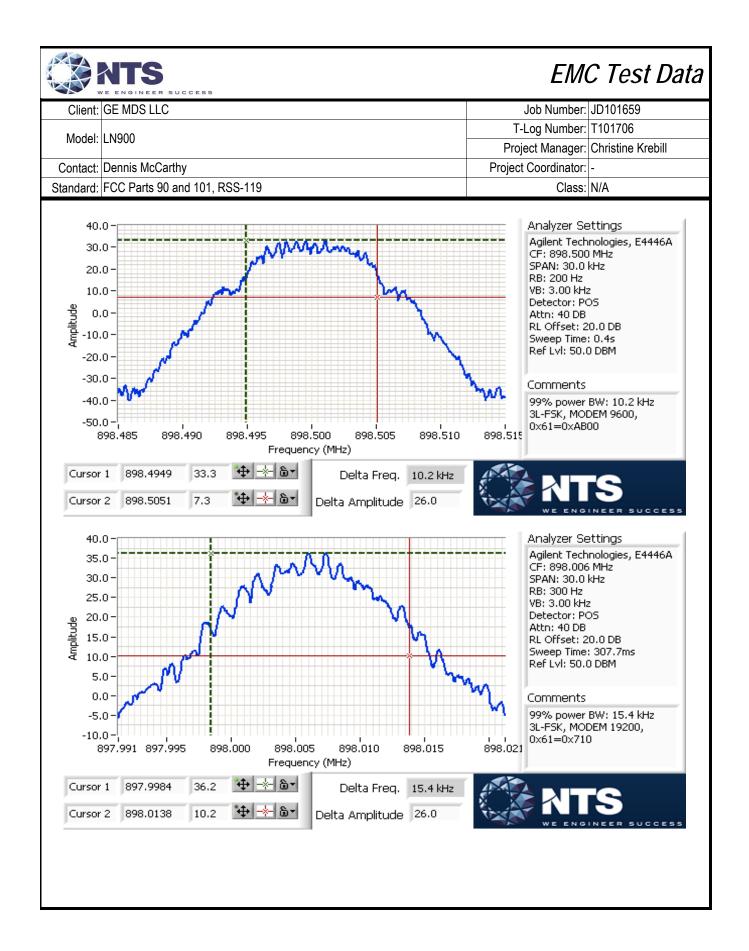








	A THE STORES HAVE A PROPERTY	SUCCESS					h Niumhaw		
	GE MDS LLC	,					ob Number: og Number:		
Model: LN900							-	Christine Kre	bill
Contact:	Dennis McCa	arthy					oordinator:		
Standard:	FCC Parts 90) and 101, R	SS-119				Class:	N/A	
un #3: Si	gnal Bandwic	dth							
[Date of Test: 2	23-May-16			Config. Used	: 1			
Te	est Engineer: [Deniz Demir	ci		Config Change	: none			
Te	est Location: F	FT Lab #4			EUT Voltage	: 13.8 VDC			
	Power	Data	Channel	Modulation	Fraguanay (MHz)	Resolution	Bandwic	lth (kHz)	
	Setting	rate	BW		Frequency (MHz)	Bandwidth		99%	
	40 dBm	9.6 ksps		3-level FSK	898.5	200		10.2	
	40 dBm	19.2 ksps	25.0 kHz	3-level FSK	898.5	300		15.4	
	≥ 3°RB and S	Span ≥ 1.5%	<u>, and ≤ 5% c</u>	of measured b	pandwidth.				
	≥ 3°RB and S	Span ≥ 1.5%	<u>o and ≤ 5% c</u>	of measured b	pandwidth.				idth and
	≥ 3°RB and S	<u>Span ≥ 1.5%</u>	<u>and ≤ 5% c</u>	of measured b	pandwidth.				
	≥ 3 ⁻ KB and S	<u>Span ≥ 1.5%</u>	<u>o and ≤ 5% c</u>	of measured b	pandwidth.				
	≥ 3°RB and S	<u>Span ≥ 1.5%</u>	<u>and ≤ 5% c</u>	of measured b	pandwidth.				
	≥ 3 ⁻ KB and S	<u>Span ≥ 1.5%</u>	<u>o</u> and ≤ 5% c	of measured b	pandwidth.				
	≥ 3 ⁻ KB and S	<u>Span ≥ 1.5%</u>	<u>o</u> and ≤ 5% c	of measured b	pandwidth.				
	≥ 3 ⁻ KB and S	<u>Span ≥ 1.5%</u>	<u>o</u> and ≤ 5% c	of measured b	pandwidth.				



EMC Test Data

Client:	GE MDS LLC	Job Number:	JD101659
Model:	1 N000	T-Log Number:	T101706
MOUEI.	EN900	Project Manager:	Christine Krebill
Contact:	Dennis McCarthy	Project Coordinator:	-
Standard:	FCC Parts 90 and 101, RSS-119	Class:	N/A

FCC Part 101

Power, Occupied Bandwidth, Frequency Stability and Spurious Emissions

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

General Test Configuration

TS

All measurements are made with the EUT's rf port connected to the measurement instrument via an attenuator or dc-block if necessary. All amplitude measurements are adjusted to account for the attenuation between EUT and measuring instrument.

Ambient Conditions:	Temperature:	20-22 °C
	Rel. Humidity:	30-35 %

Summary of Results

Run #	Spacing	Data Rate	Test Performed	Limit	Pass / Fail	Result / Margin
1	-	-	Output Power	Determined at time of Licensing	Pass	40.7 dBm
2	12.5 kHz, 25.0 kHz	9.6 ksps 19.2 ksps	Spectral Mask	Part 101.111(a)(5) Part 101.111(a)(6)	Pass	Within mask
3	12.5 kHz, 25.0 kHz	9.6 ksps 19.2 ksps	99% or Occupied Bandwidth	12.5, 25.0 and 200 kHz	Pass	10.2 kHz 15.4 kHz

Modifications Made During Testing

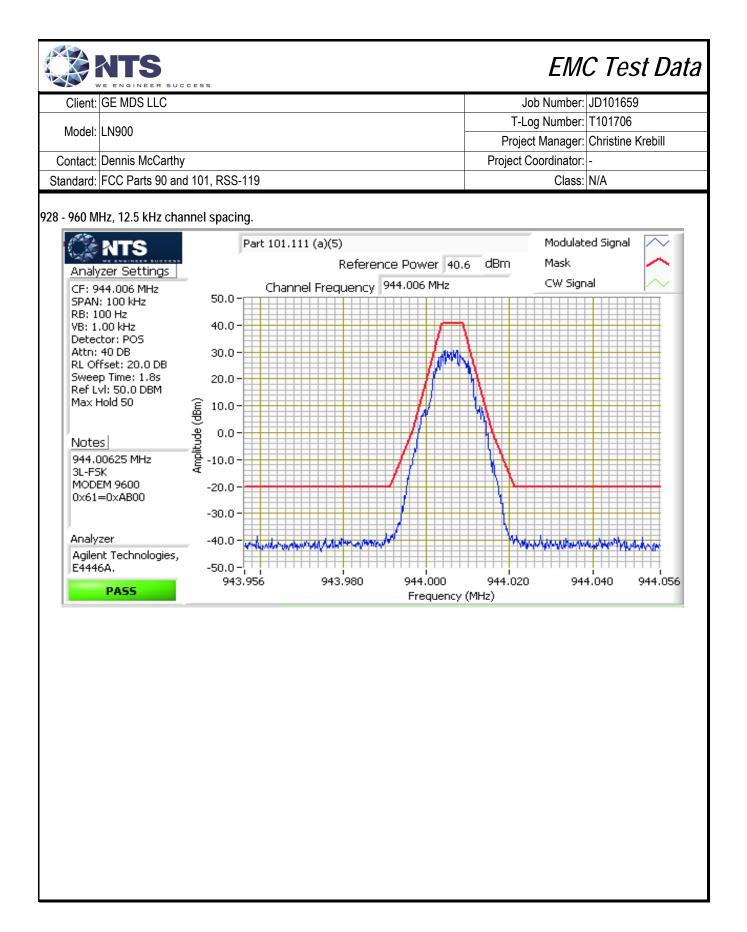
No modifications were made to the EUT during testing

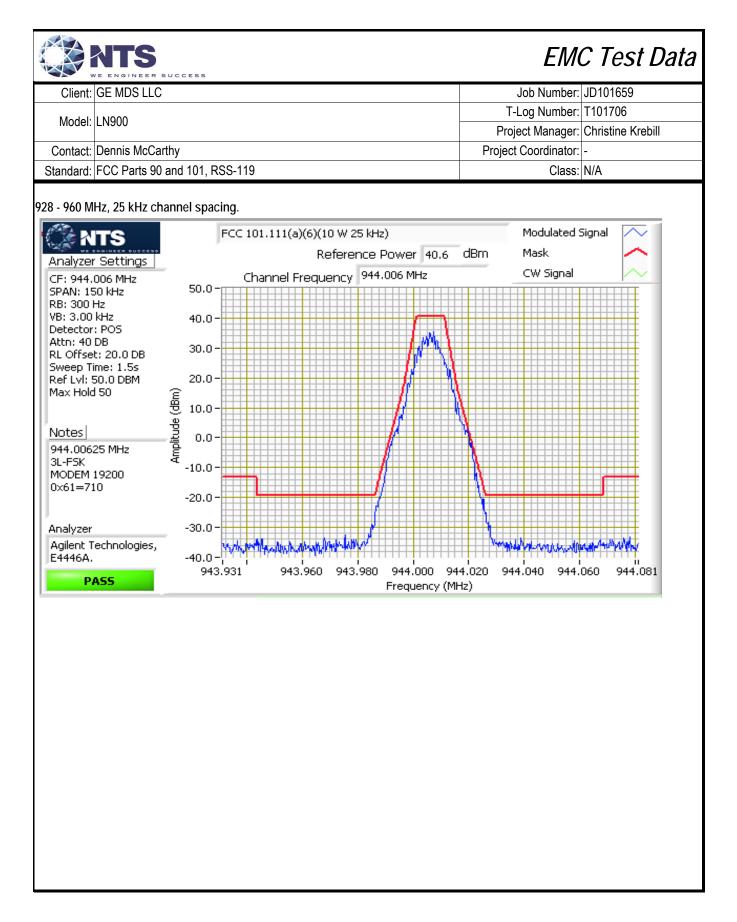
Deviations From The Standard

No deviations were made from the requirements of the standard.

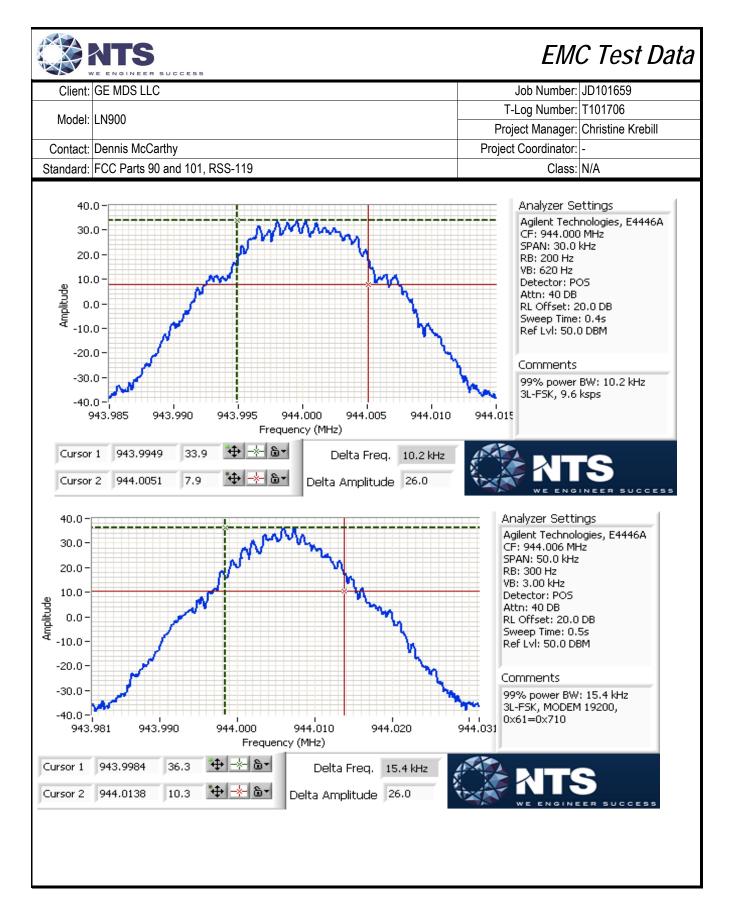
	NTS						EM	C Test Data
Client:	GE MDS LLC					Jo	b Number:	JD101659
Madalı	1 NIOOO				T-Log Number: T101706		T101706	
Model:	LN900				Projec	t Manager:	Christine Krebill	
Contact:	Dennis McCarthy			Project C	coordinator:	-		
	FCC Parts 90 and 101, R	SS-119					Class:	N/A
Run #1: Oı								
	Date of Test: 23-May-16				onfig. Used:			
	st Engineer: Deniz Demir	ci			fig Change:			
IE	est Location: FT Lab #4			E	UT Voltage:	13.8 VDC		
	Cable Loss: 0.0 dB			Attenuator:	20.0 dB	-	Total Loss:	20.0 dB
	Cable ID(s): -		Att	enuator IDs:				2010 48
Power	Frequency (MHz)	Output		Antenna	Result	EIR		
Setting ²		(dBm) ¹	mW	Gain (dBi)		dBm	W	
40 dBm	928.0	40.5	11220.2	16.5	Pass	57.0	501.187	
40 dBm	944.0	40.6	11481.5	16.5	Pass	57.1	512.861	
40 dBm	960.0	40.7	11749.0	16.5	Pass	57.2	524.807	
Note 1:	Output power measured	using a peak	power mete	er				
	Power setting - the software				included for	reference onl	y.	
							<u>, </u>	

		RSUCCESS				EM	C Test	Data	
Client:	GE MDS LL					Job Number:	JD101659		
				T-Log Number: T101706					
Model: LN900						Project Manager:	ger: Christine Krebill		
Contact:	Dennis McC	Carthy				Project Coordinator:	-		
		90 and 101, F	Class:	N/A					
		x, FCC Part 1 5/24 & 5/26/) and 101.111	(a)(6) Config. Used	: 1			
		Deniz Demi			Config Change				
Te	est Location:	FT Lab #4		EUT Voltage	: 13.8 VDC				
Note 1:	higher than spectral ma	the declared sk measuren	nominal pov nents as wors	ver for every o st case results	channel frequency. Nom	asured power levels (usin inal 40 dBm reference pov			
Spectral Ma	Power	960 MHz bar Data	Channel	Modulation		Emission	Result		
	setting	rate	plan	wouldion	Frequency (MHz)	mask	Result		
	40 dBm	9.6 ksps		3-level FSK	944.00625	101.111(a)(5)	Pass		
	40 dBm	19.2 ksps	25.0 kHz	3-level FSK	944.00625	101.111(a)(6)	Pass		





Client:	GE MDS LL	C				Jo	b Number:	JD101659	
		-					g Number:		
Model:	odel: LN900						-	Christine Kr	ebill
Contact: Dennis McCarthy						Project C	oordinator:	-	
Standard: FCC Parts 90 and 101, RSS-119							Class:	N/A	
1 #2∙ Si	gnal Bandwi	dth							
	Date of Test:		2016		Config. Used	d: 1			
	st Engineer:		ci		Config Change	e: none			
Te	est Location:	FT Lab #4			EUT Voltage	e: 13.8 VDC			
	Power	Data	Channel	Modulation	Frequency (MHz)	Resolution	Bandwid	th (kHz)	
	setting	rate	plan			Bandwidth		99%	
	40 dBm 40 dBm	9.6 ksps 19.2 ksps		3-level FSK 3-level FSK	944.0 944.0	200 Hz 300 Hz		10.2 15.4	
l					•••••				
	<u> 2 3 KB and</u>	<u>Span ≥ 1.5%</u>	5 and ≤ 5% c	of measured ba	andwidth.				vidth {
	<u> 2 3 KB and</u>	<u>Span ≥ 1.5%</u>	<u>6 and ≤ 5% c</u>	of measured ba	andwidth.				vidth a
	<u> 2 3 KB and</u>	<u>Span ≥ 1.5%</u>	<u>6 and ≤ 5% c</u>	of measured ba	andwidth.				vidth a
	<u>2 3 KB and</u>	<u>Span ≥ 1.5%</u>	<u>6 and ≤ 5% c</u>	of measured ba	andwidth.				ridth a
	<u>2 3 KB and</u>	<u>Span ≥ 1.5%</u>	<u>6 and ≤ 5% c</u>	of measured ba	andwidth.				ridth a
	<u>2 3 KB and</u>	<u>Span ≥ 1.5%</u>	<u>6 and ≤ 5% c</u>	of measured ba	andwidth.				ridth a
	<u>2 3 KB and</u>	<u>Span ≥ 1.5%</u>	<u>6 and ≤ 5% c</u>	of measured ba	andwidth.				ridth a
	<u>2 3 KB and</u>	<u>Span ≥ 1.5%</u>	<u>6 and ≤ 5% c</u>	of measured ba	andwidth.				ridth a
	<u>2 3 KB and</u>	<u>Span ≥ 1.5%</u>	<u>6 and ≤ 5% c</u>	of measured ba	andwidth.				ridth a
	<u>2 3 KB and</u>	<u>Span ≥ 1.5%</u>	<u>6 and ≤ 5% c</u>	of measured ba	andwidth.				ridth a
	<u>2 3 KB and</u>	<u>Span ≥ 1.5%</u>	<u>6 and ≤ 5% c</u>	of measured ba	andwidth.				ridth a
		<u>Span ≥ 1.5%</u>	<u>6 and ≤ 5% c</u>	of measured ba	andwidth.				ridth a
	<u>2 3 KB and</u>	<u>Span ≥ 1.5%</u>	<u>6 and ≤ 5% c</u>	of measured ba	andwidth.				ridth a





Report Date: September 13, 2018

End of Report

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