

KTL Test Report: 8R00459.1

Applicant: WAVERIDER
#2 - 2770 T.C. Hwy. NE
Salmon Arm, BC V1E 4R9

**Equipment Under Test:
(E.U.T.)** NCL135 Spread Spectrum
Frequency Hopping Transmitter

FCC ID: N9CNCL135

In Accordance With: **FCC Part 15, Subpart C**
Frequency Hopping Transmitters
2400 - 2483.5 MHz

Tested By: KTL Ottawa Inc.
3325 River Road, R.R. 5
Ottawa, Ontario K1V 1H2

Authorized By:

W. Waterhouse, RF Engineering Lab Manager

Date:

Total Number of Pages: 69

Table of Contents

Section 1. Summary of Test Results

General
Summary of Test Data

Section 2. Equipment Under Test

General Equipment Information
Description of Modification for Modification Filing
Family List Rationale
Theory of Operation
System Diagram

Section 3. Powerline Conducted Emissions

Test Results
Measurement Data
Powerline Conducted Graphs

Section 4. Channel Separation

Test Results
Measurement Data

Section 5. Pseudorandom Hopping Algorithm

Test Results
Measurement Data

Section 6. Time of Occupancy

Test Results
Measurement Data

Section 7. Occupied Bandwidth

Test Results
Measurement Data

Section 8. Peak Power Output

Test Results
Measurement Data
Antennas

Table of Contents, continued

Section 9. Spurious Emissions (Antenna Conducted)

Test Results
Measurement Data

Section 10. Spurious Emissions (Radiated)

Test Results
Measurement Data
Duty Cycle Calculation
Test Data: Radiated Emissions (Peak @ Average)
Photographs

Section 11. Test Equipment List

Annex A. Test Methodologies

Powerline Conducted Emissions
Channel Separation
Pseudorandom Hopping Algorithm
Time of Occupancy
Occupied Bandwidth
Peak Power Output
Spurious Emissions at Antenna Terminals
Radiated Spurious Emissions

Annex B. Block Diagrams

Test Side for Radiated Emissions
Conducted Emissions
Peak Power at Antenna Terminals

EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135

Section 1. Summary of Test Results

Manufacturer: WAVERIDER

Model No.: NCL 135

Serial No.: None

General: **All measurements are traceable to national standards.**

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15, Subpart C, Paragraph 15.247 for Frequency Hopping Spread Spectrum devices. Radiated tests were conducted in accordance with ANSI C63.4-1992. Radiated emissions are made on an open area test site. A description of the test facility is on file with the FCC.



New Submission



Production Unit



Class II Permissive Change



Pre-Production Unit



Family Listing

THIS TEST REPORT RELATES ONLY TO THE ITEM(S) TESTED.

THE FOLLOWING DEVIATIONS FROM, ADDITIONS TO, OR EXCLUSIONS FROM THE TEST SPECIFICATIONS HAVE BEEN MADE.

See " Summary of Test Data".



NVLAP LAB CODE: 100351-0

TESTED BY: _____ DATE: _____

Kevin Carr, Technologist

TESTED BY: _____ DATE: _____

Russell Grant, Technologist

TECHNICAL REVIEW: _____ DATE: _____

Tom Tidwell, Wireless Group Manager

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EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135

Summary Of Test Data

NAME OF TEST	PARA. NO.	SPEC.	MEAS.	RESULT
Powerline Conducted Emissions	15.207(a)	48 dB μ V	<48 dB μ V	Complies
Channel Separation	15.247(a)(1)	Greater of 25 kHz or 20 dB Bandwidth	1 MHz	Complies
Pseudorandom Hopping Algorithm	15.247(a)(1)		*	Complies
Time of Occupancy	15.247(a)(1)(ii)	≤ 0.4 sec in 30 sec	*	Complies
20 dB Occupied Bandwidth	15.247(a)(1)	≤ 1 MHz	995 kHz	Complies
Peak Power Output	15.247(b)	1 Watt	19 dBm	Complies
Spurious Emissions (Antenna Conducted)	15.247(c)	-20 dBc	53.1 dB μ V/m@3m	Complies
Spurious Emissions (Radiated)	15.247(c)	Table 15.209(a)		Complies

Footnotes For N/A's: * Measurement data to be provided by Proxim

Test Conditions: Temperature: 20 °C
Humidity: 30 %

EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135

Section 2. Equipment Under Test (E.U.T.)

General Equipment Information

Model Number:	NCL 135
Serial Number	None
	☒ Production Unit ☐ Pre-Production Unit
Frequency Range:	2400 – 2843.5 MHz
Tunable Bands:	1
Number of Channels:	81
Channel Spacing:	1 MHz
Emissions Designator:	995KF1D
User Frequency Adjustment:	None

EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135

Description of Modification for Modification Filing

NOT APPLICABLE

Family List Rational

EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135

Theory of Operation

The NCL 135 is a spread spectrum frequency hopping transceiver and is designated for operation in the band of 2400 – 2483.5 MHz. The equipment is used to provide wireless connections between local area networks. The equipment is provided with 24 dBi or 14 dBi antenna. All antenna connections use reverse TNC connectors.

EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135

Section 3. Powerline Conducted Emissions

NAME OF TEST: Powerline Conducted Emissions	PARA. NO.: 15.207(a)
TESTED BY: Kevin Carr	DATE: September 17, 1998

Test Results: Complies. See attached graph.

Measurement Data: See attached graph.

EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135

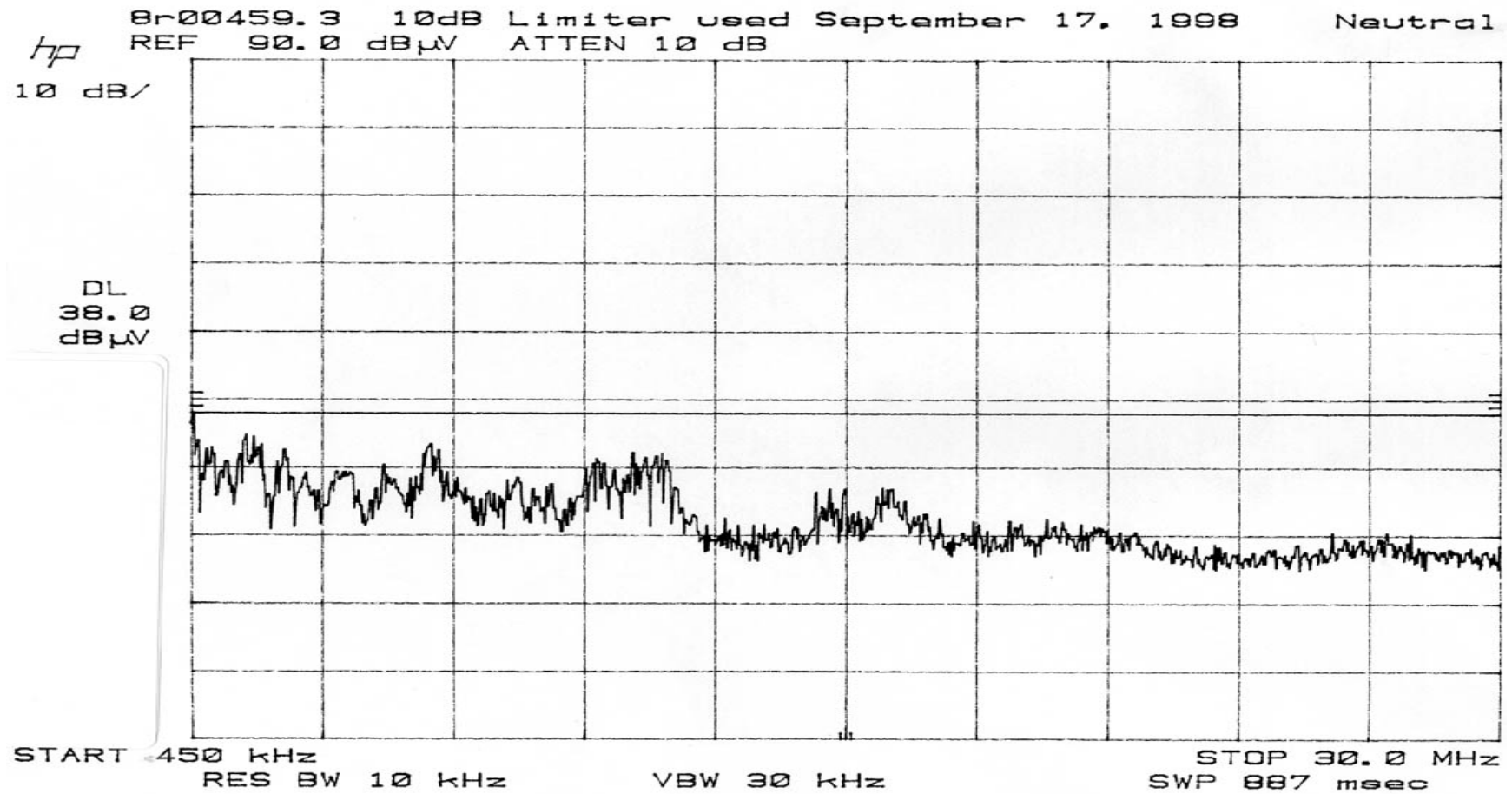
Measurement Data:

Conductor	Frequency (MHz)	CISPR (dBμV)	Average (dBμV)	BB/NB	BB Correction (dB)	Result (dBμV)
P	920 kHz	44.4	34.0	BB	-13	31.4
P	545 kHz	49.6	25.3	BB	-13	36.6

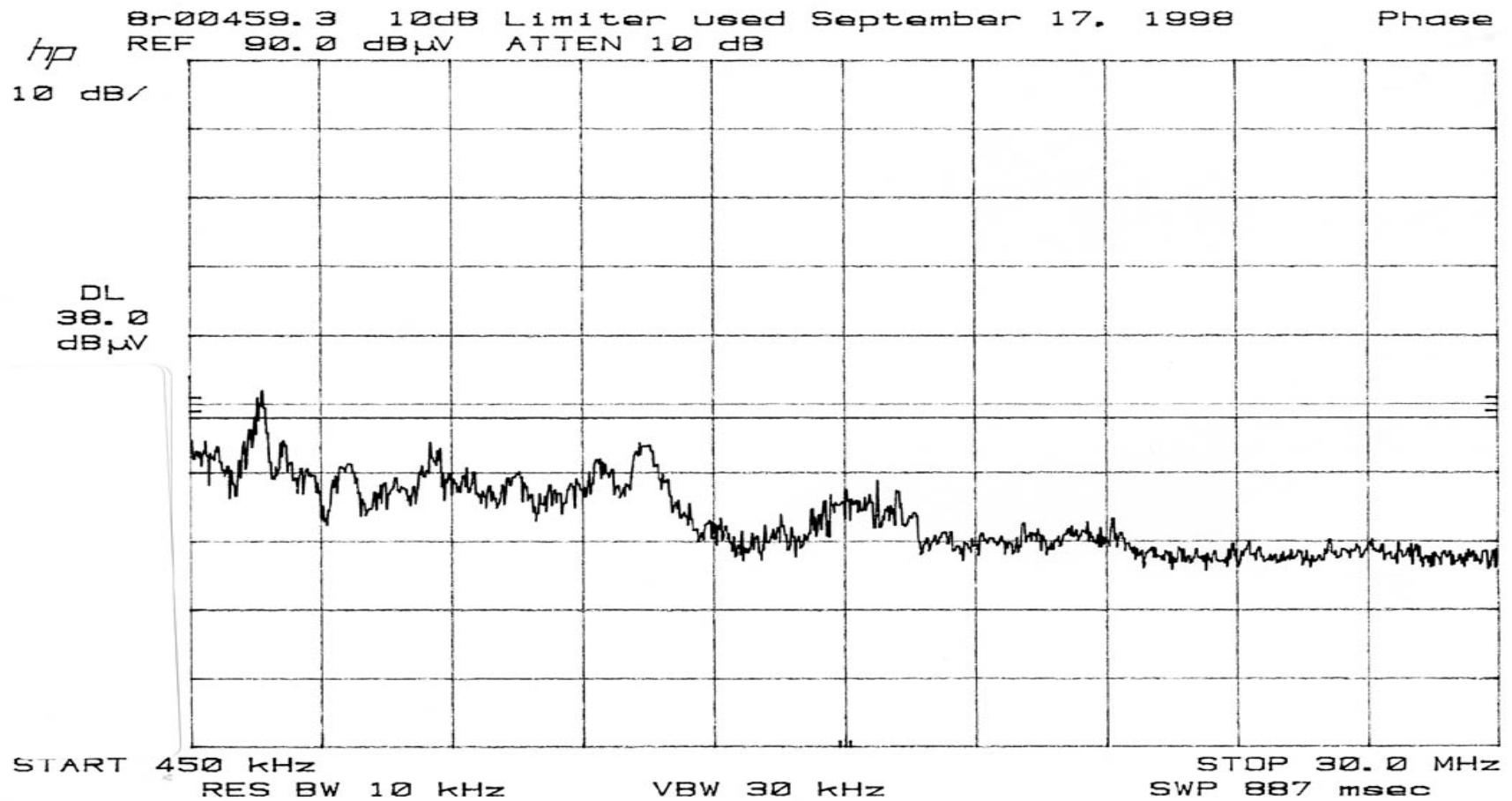
KTL Ottawa

FCC PART 15, SUBPART C
DIRECT SEQUENCE TRANSMITTERS
PROJECT NO.: 8R00459.1

EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135



EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
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EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135

Section 4. Channel Separation

NAME OF TEST: Channel Separation	PARA. NO.: 15.247(a)(1)
TESTED BY: Russell Grant	DATE: October 14, 1998

Test Results: Complies.

Measurement Data: Measured 20 dB bandwidth: 995 kHz
Channel Separation: 1 MHz

EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135

Section 5. Pseudorandom Hopping Algorithm

NAME OF TEST: Pseudorandom Hopping Algorithm	PARA. NO.: 15.247(a)(1)(ii)
TESTED BY: Russell Grant	DATE: October 14, 1998

Test Results: Complies.

Measurement Data: Number of Hopping Frequencies: *
Number of Hopping Patterns: *

* Measurement data to be provided by Proxim.

EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135

Section 6. Time of Occupancy

NAME OF TEST: Time of Occupancy	PARA. NO.: 15.247(a)(1)(ii)
TESTED BY: Russell Grant	DATE: October 14, 1998

Test Results: Complies.

Measurement Data: Maximum Dwell Time On Any Channel: *

* Measurement data to be provided by Proxim.

EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135

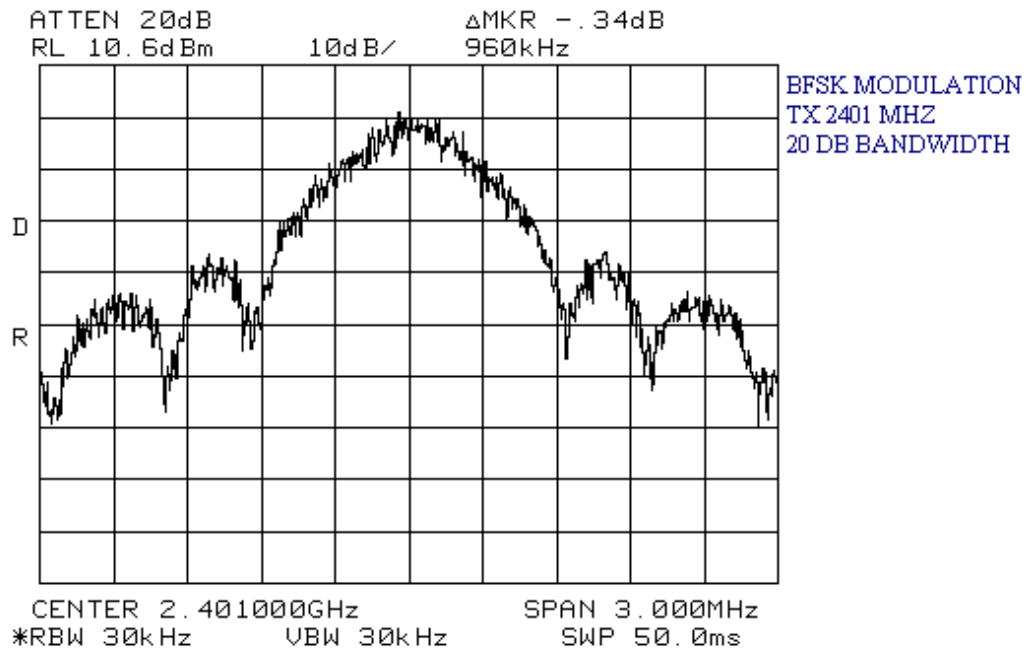
Section 7. Occupied Bandwidth

NAME OF TEST: Occupied Bandwidth	PARA. NO.: 15.247(a)(1)(ii)
TESTED BY: Russell Grant	DATE: October 14, 1998

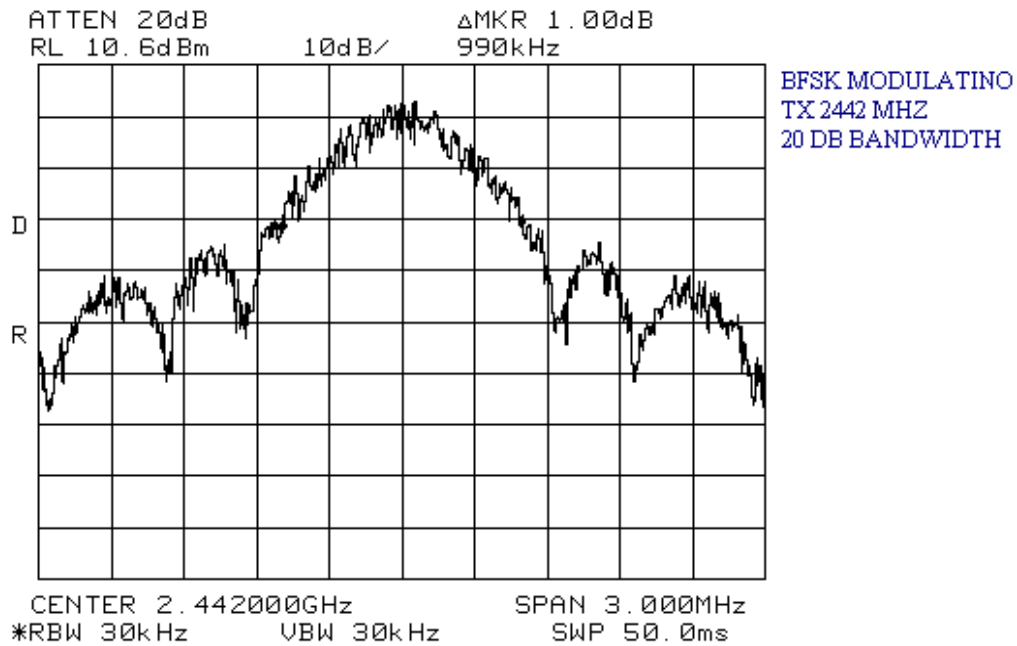
Test Results: Complies.

Measurement Data: See attached graphs.

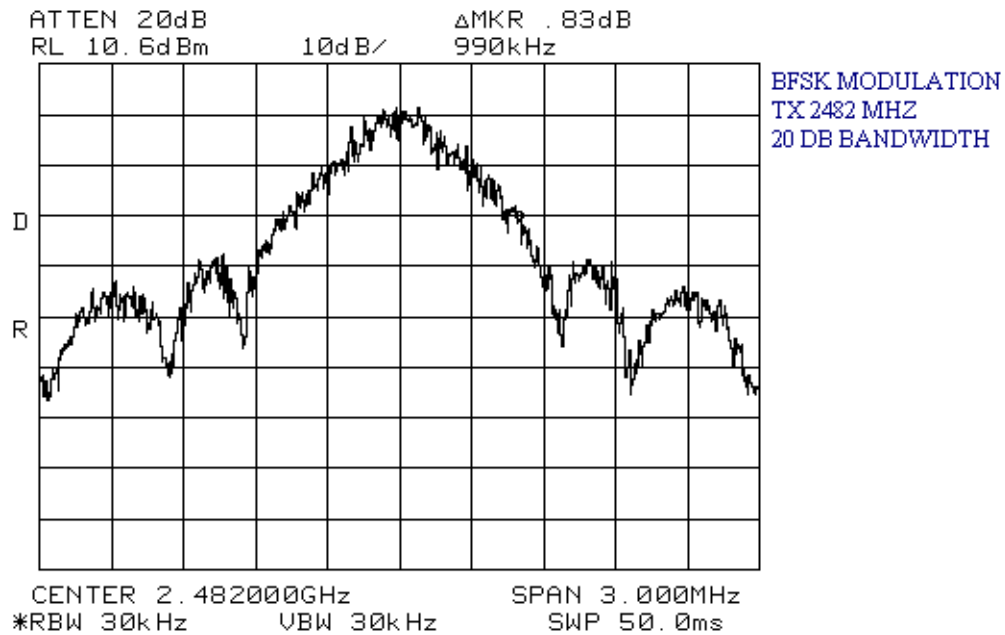
EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135



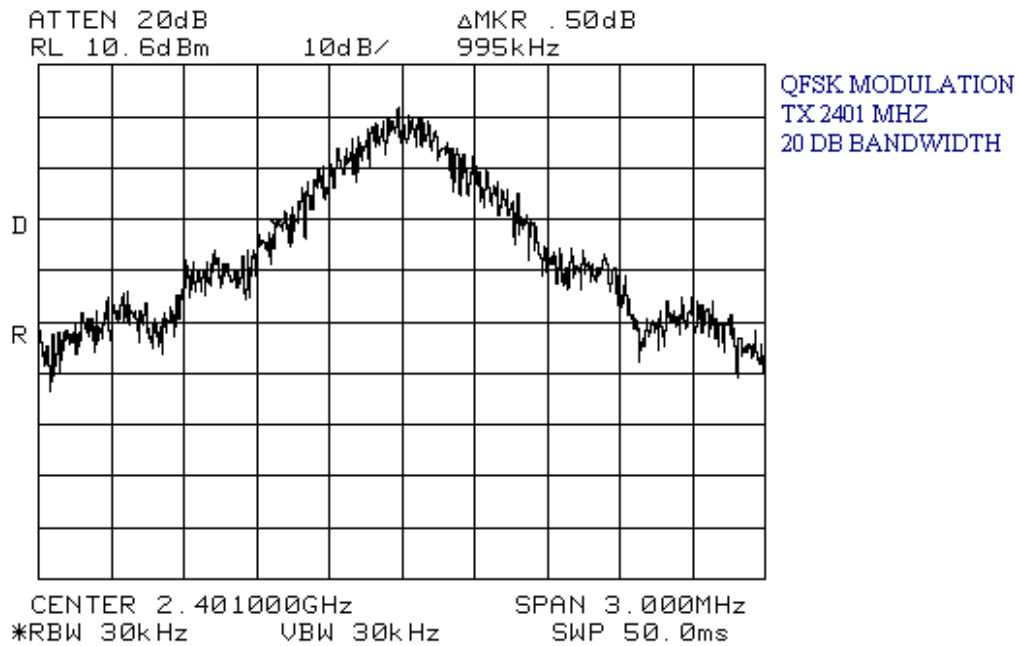
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FCC ID: N9CNCL135



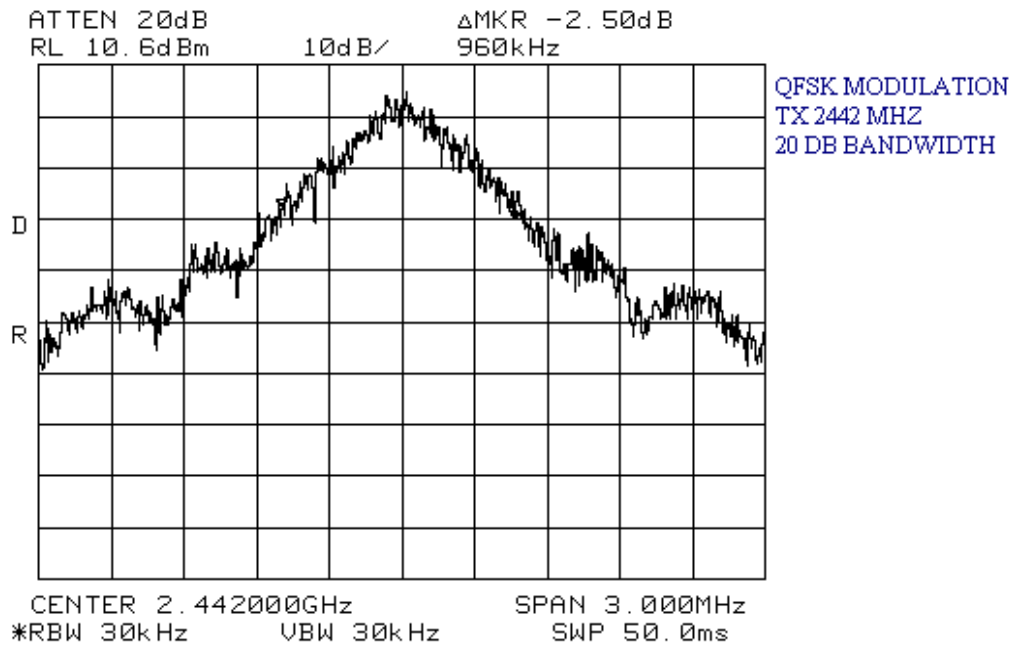
EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135



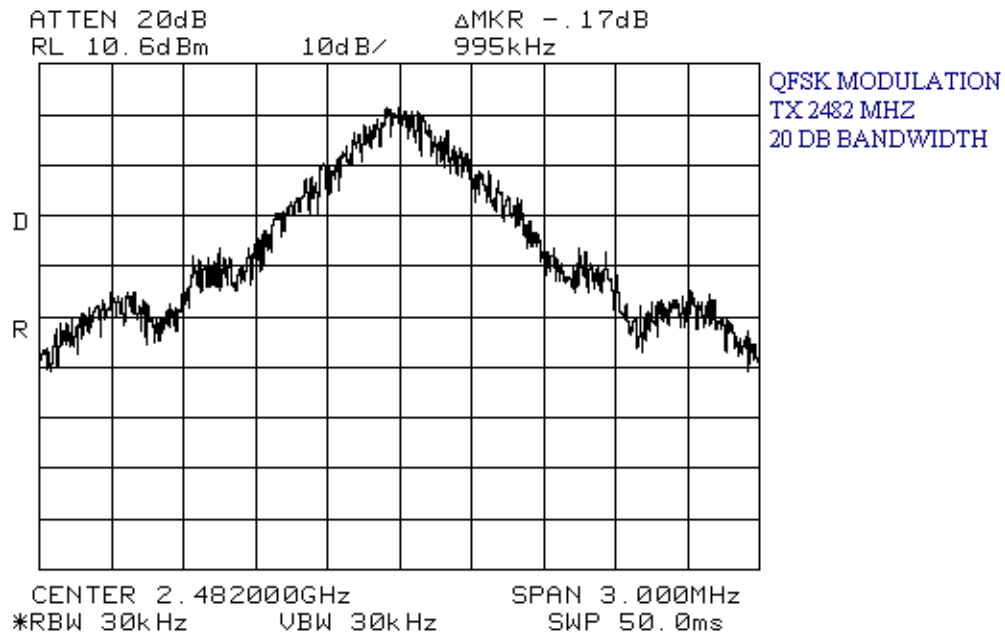
EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135



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EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135

Section 8. Peak Power Output

NAME OF TEST: Peak Power Output	PARA. NO.: 15.247 (b)
TESTED BY: Russell Grant	DATE: September 18, 1998

Test Results: Complies. The maximum peak power output of the transmitter is 19.0 dBm.

Measurement Data: Detachable antenna? ☒ Yes ☐ No
If yes, state the type of non-standard connector used at the antenna port: Reverse Gender TNC

Directional Gain of Antenna: 24 dBi, 14 dBi.
Peak Power Output: 19.0 dBm.

Antennas:

Model	Type	Manufacturer	Gain	E.I.R.P.
HG2424GC	Reflector Grid	Hyperlink	24 dBi	43 dBm
HG2414Y	Yagi	Hyperlink	14 dBi	33 dBm

Note: The 24 dBi Reflector Grid Antenna exceeds 6 dBi by 18 dB. However, this antenna is used for point to point applications. Therefore, the power output must be reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi. This is $18/3 = 6$ dB power reduction. The power output must not exceed $30-6 = 24$ dBm. The manufacturers rated power output is 20 dBm. The measured power output is 19.0 dBm.

The 14 dBi Yagi antenna exceeds 6 dBi by 8 dB. Therefore, the power output must not exceed $30-8 = 22$ dBm.

EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135

Section 9. Spurious Emissions (Antenna Conducted)

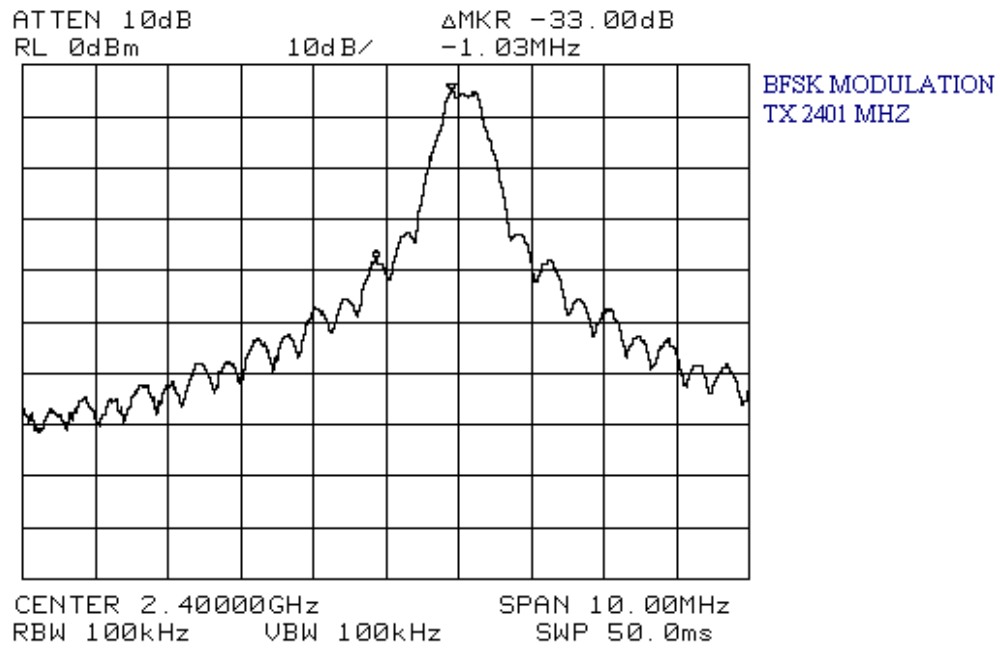
NAME OF TEST: Spurious Emissions (Antenna Conducted)	PARA. NO.: 15.247(c)
TESTED BY: Russell Grant	DATE: October 14, 1998

Test Results: Complies.

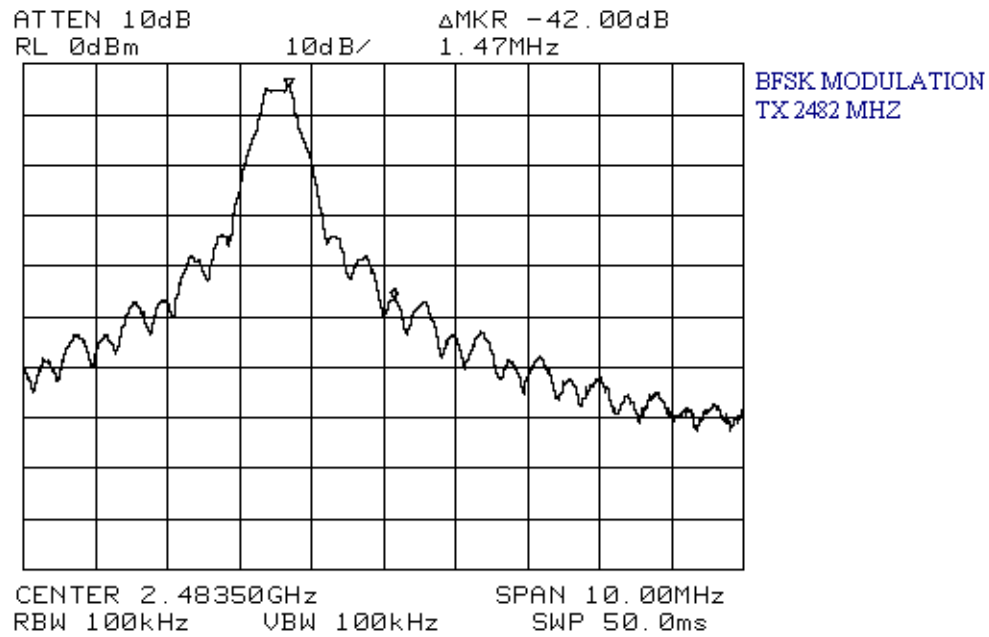
Measurement Data: See attached graphs.

* Measurement data to be provided by Proxim.

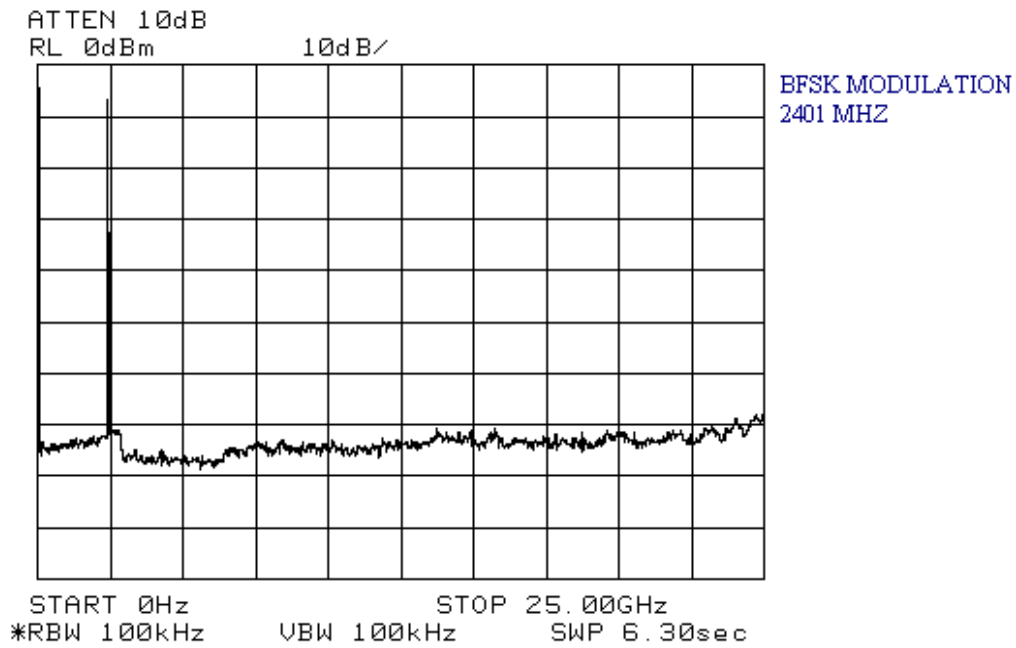
EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135



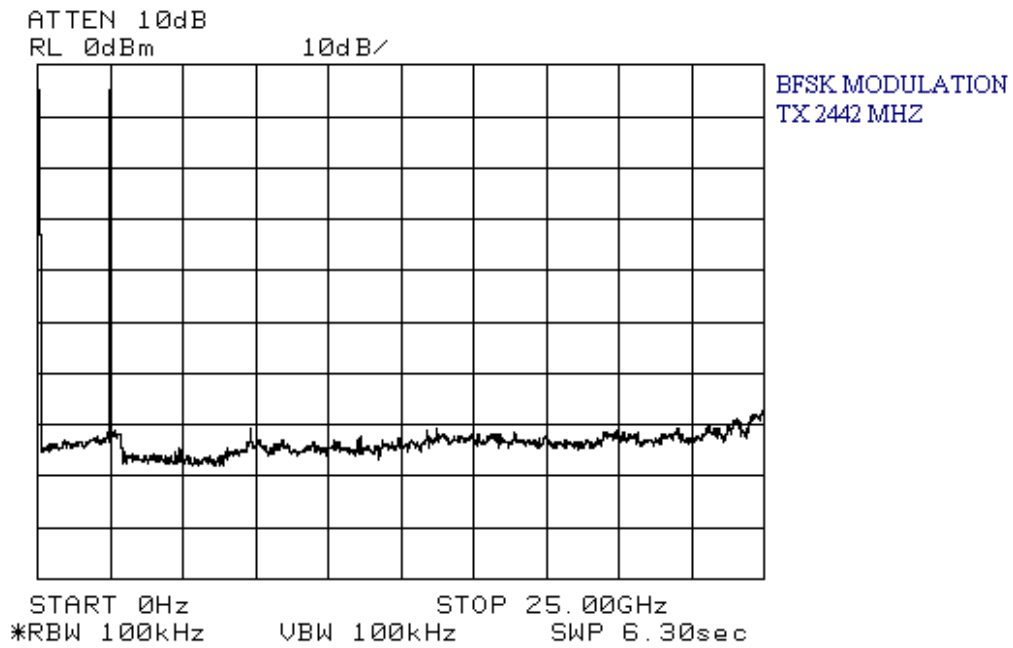
EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135



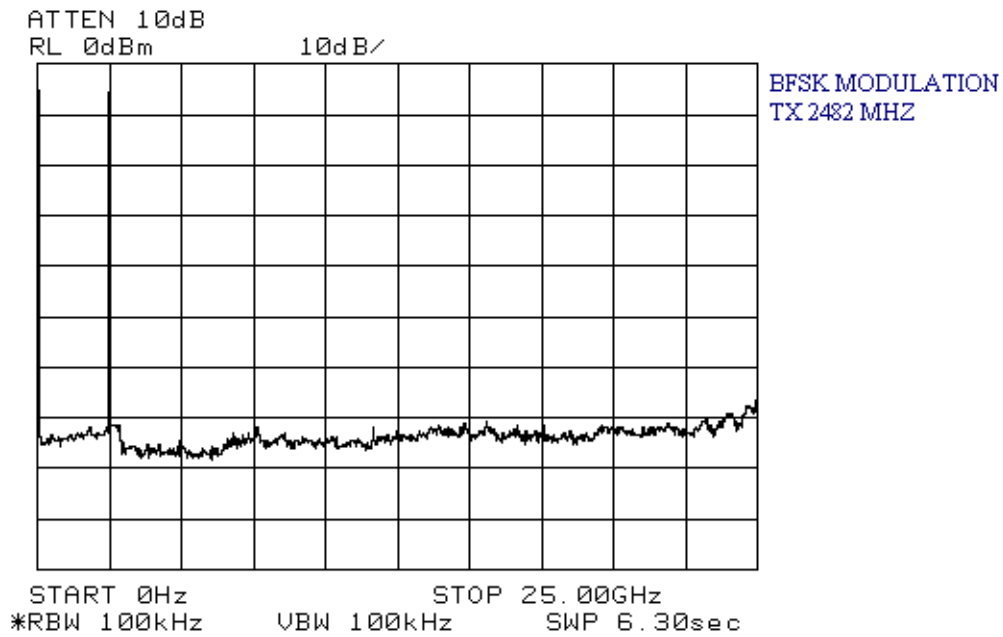
EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135



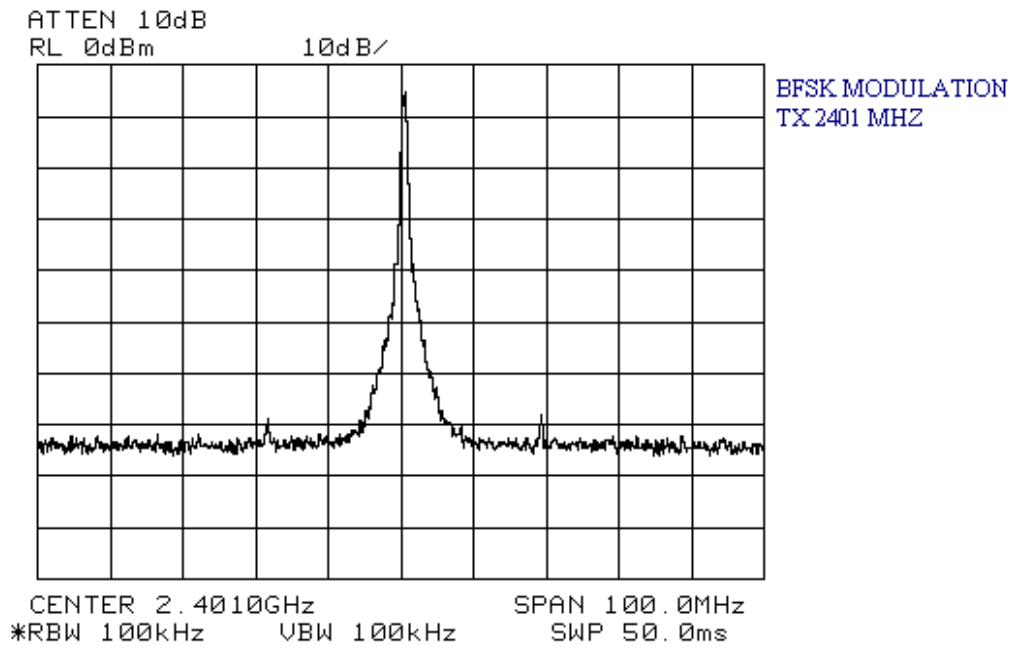
EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135



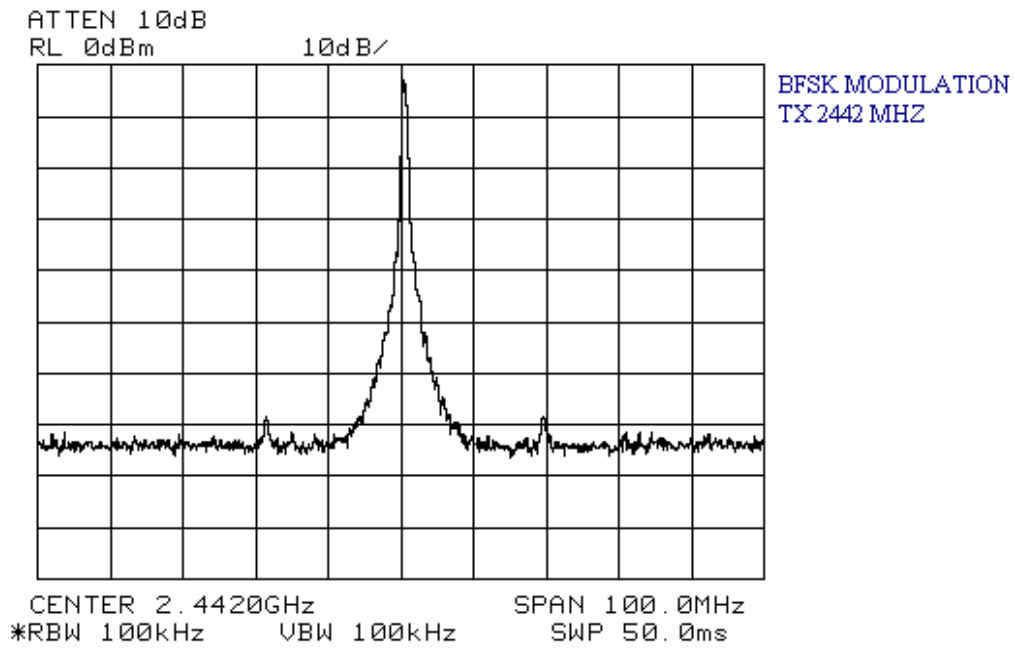
EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135



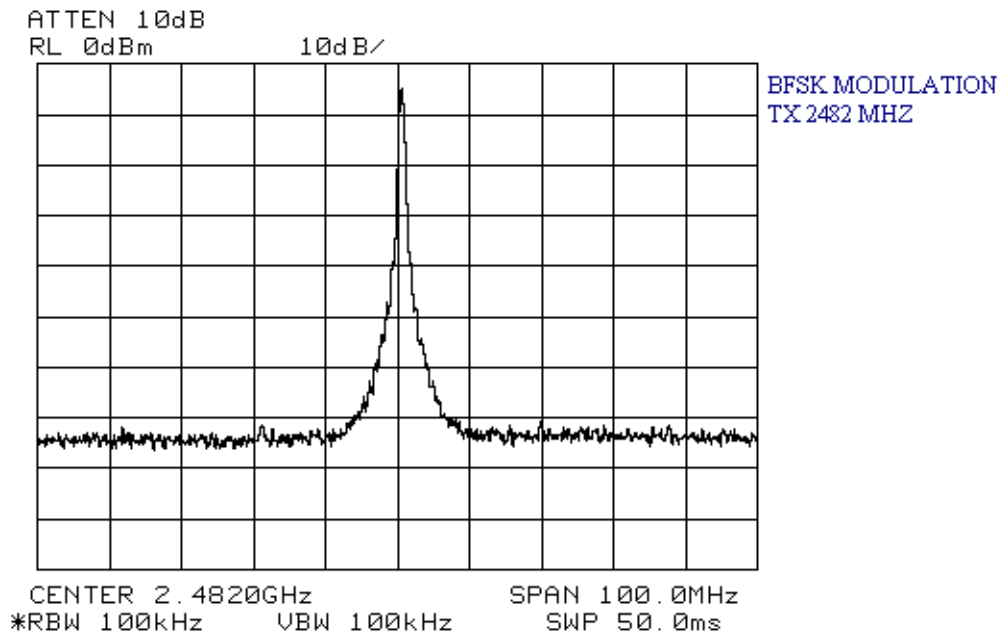
EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135



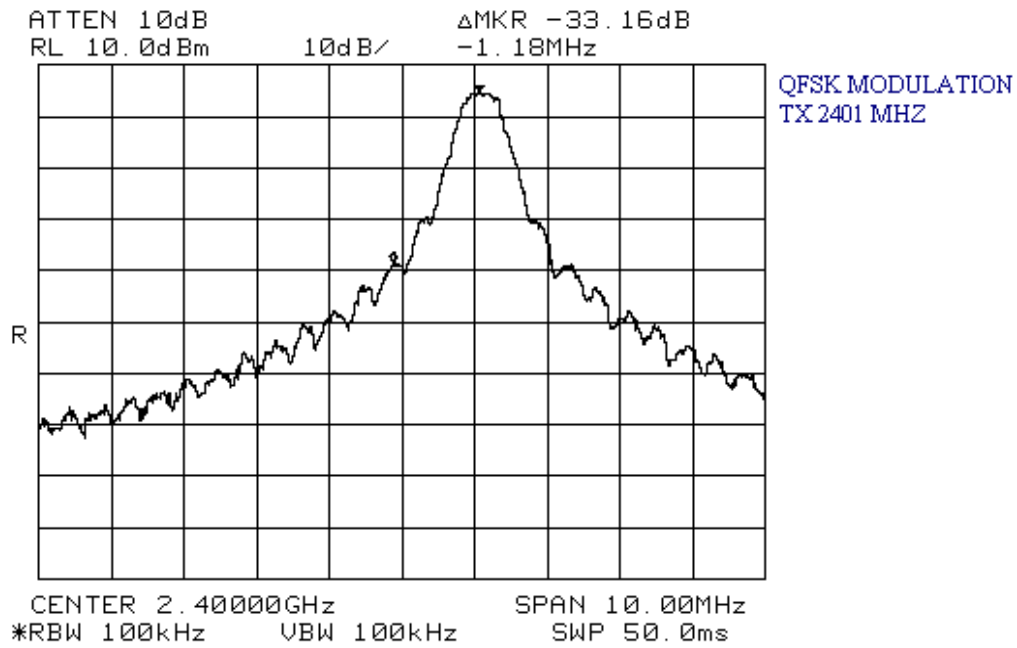
EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135



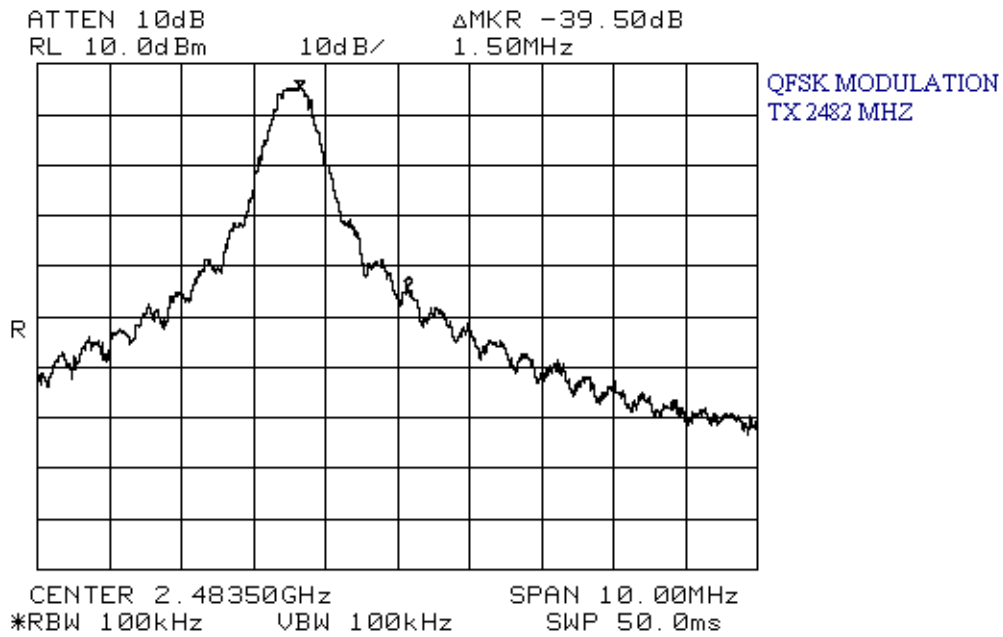
EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135



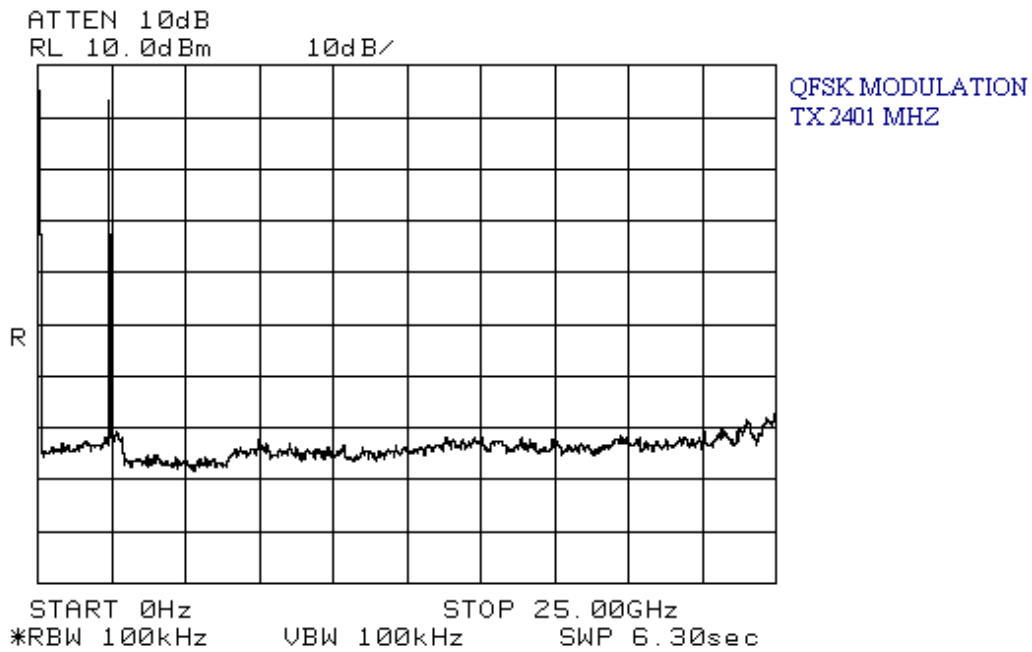
EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135



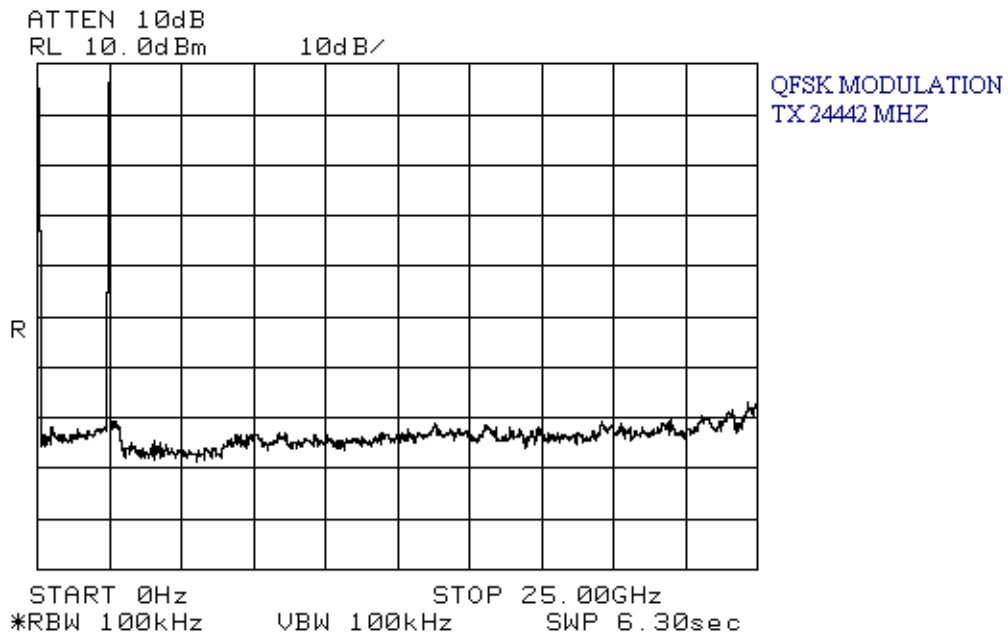
EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135



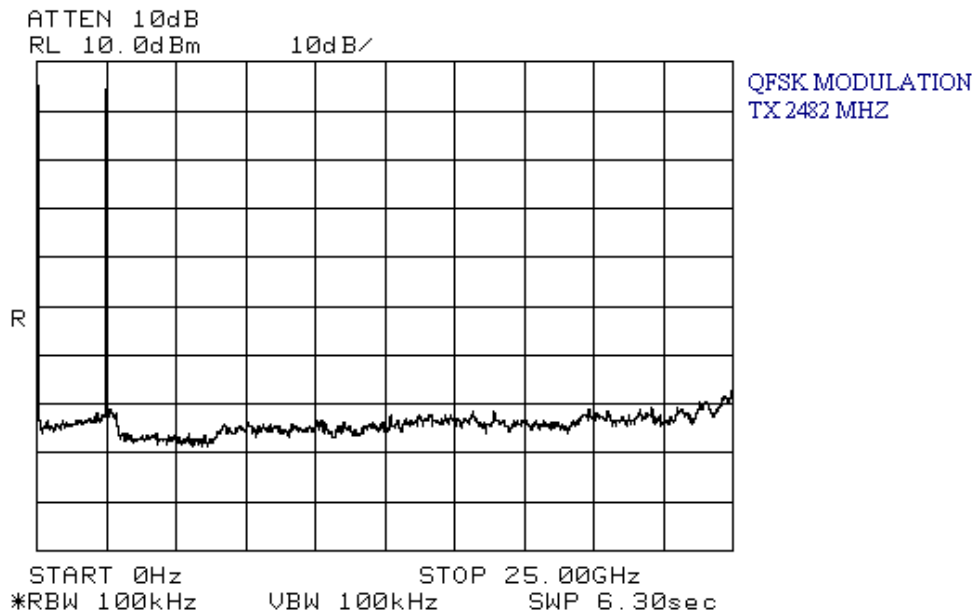
EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135



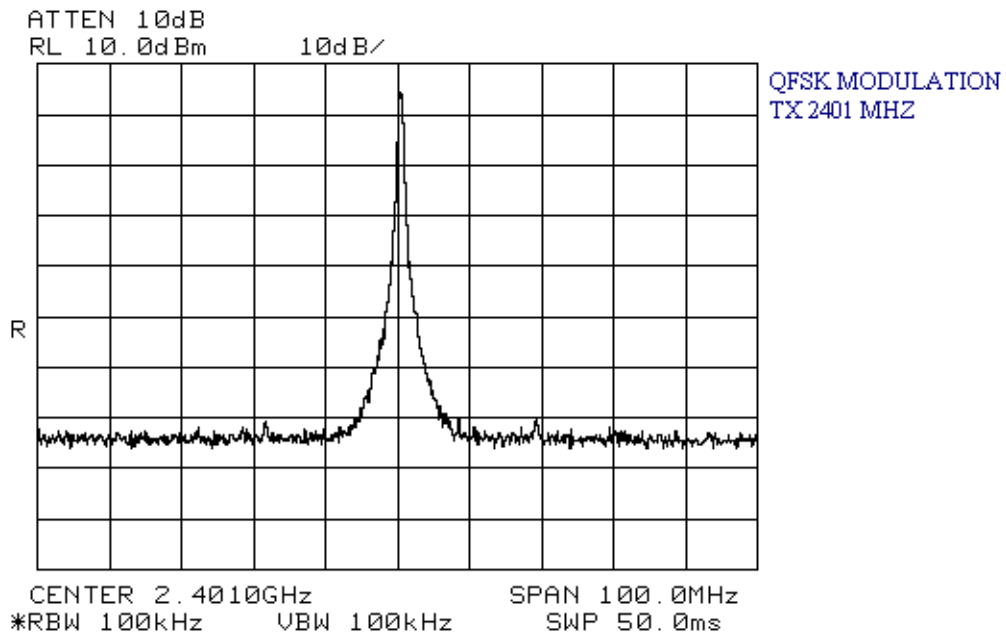
EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135



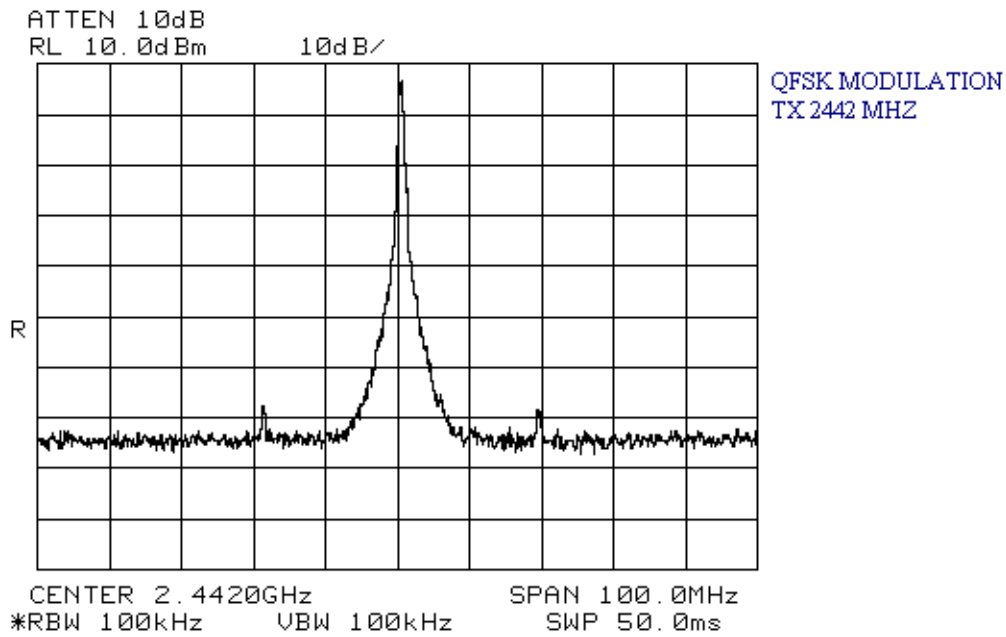
EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135



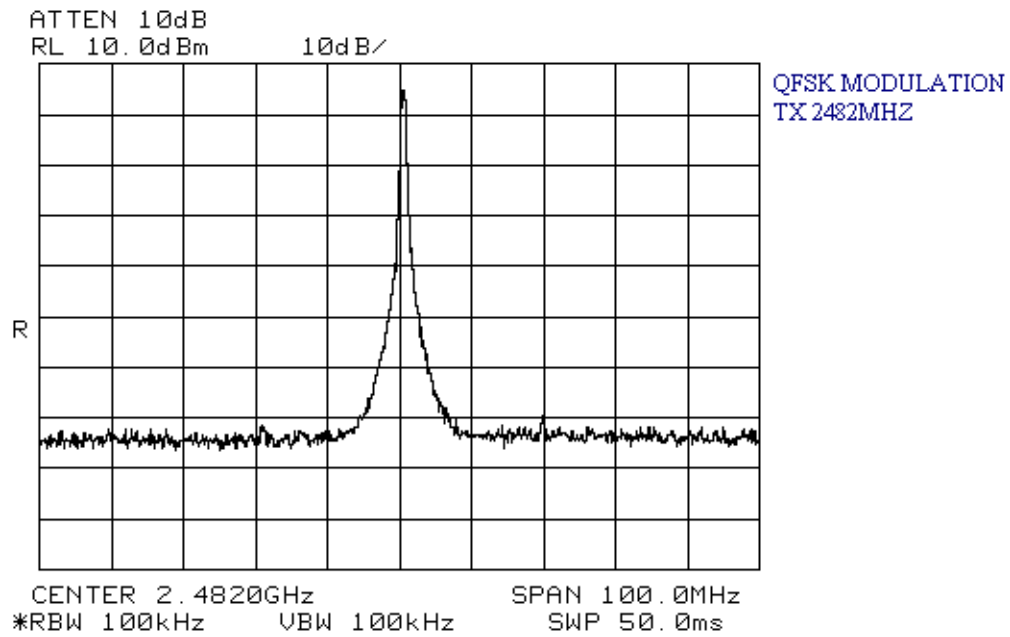
EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135



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FCC ID: N9CNCL135

Section 10. Spurious Emissions (Radiated)

NAME OF TEST: Spurious Emissions (Radiated)	PARA. NO.: 15.247(c)
TESTED BY: Russell Grant	DATE: September 18, 1998

Test Results: Complies. The worst case emission level is 54.1 dB μ V/m @ 3m at 7428 MHz. This is 0.9 dB below the specification limit.

Measurement Data: See attached table.

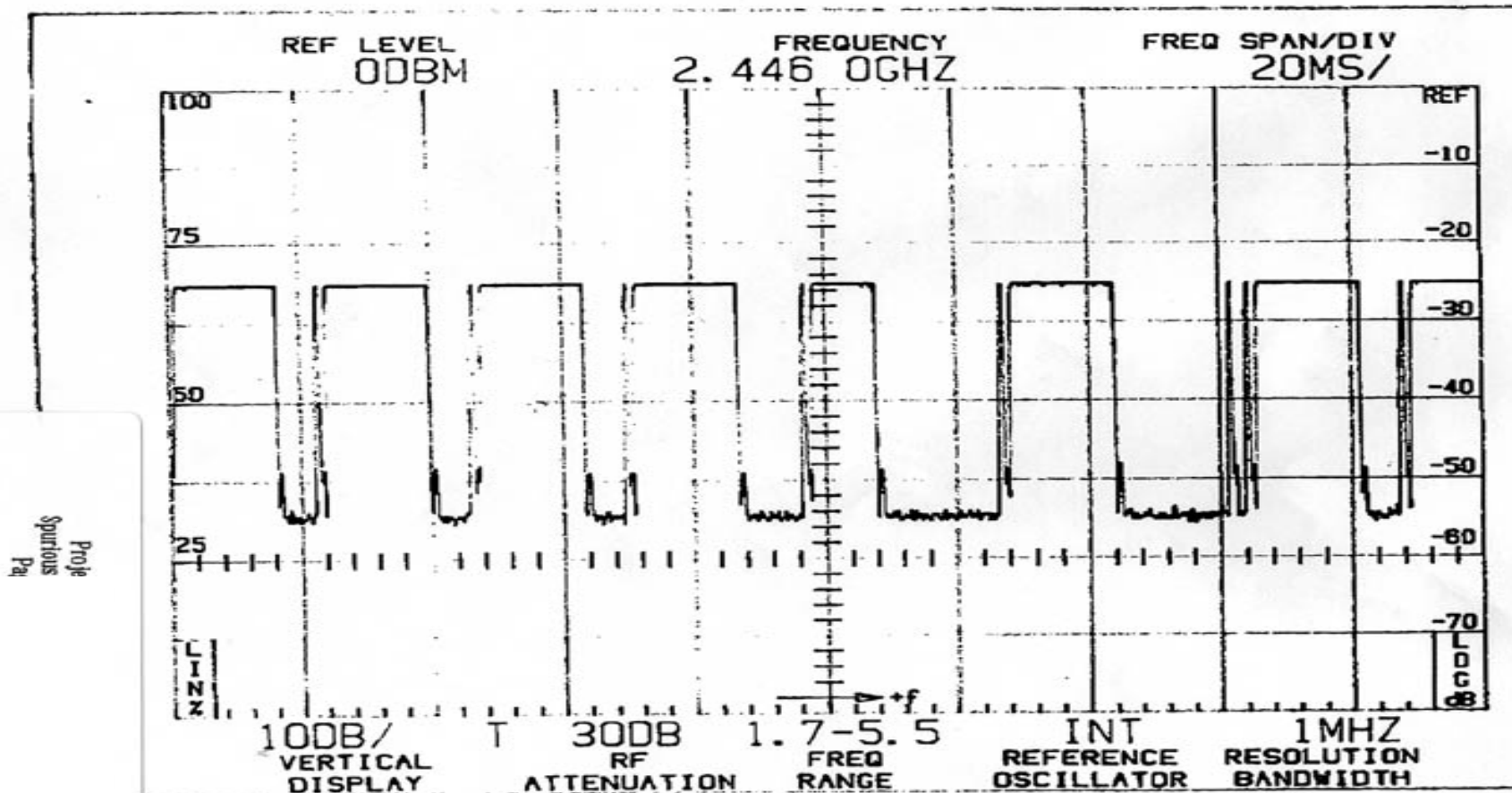
Duty Cycle Calculation: $20 \log 0.6 = -4.4 \text{ dB}$

Duty cycle measurement was provided by Proxim.

Note: All measurements were made at 3 meters unless otherwise noted, with a distance correction factor.

EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135

Duty cycle = $20/50 = 60\%$



FCC ID: N9CNCL135

Test Data - Radiated Emissions (Peak): Reflector Grid Antenna, Channel 5

[illegible]

Test Data - Radiated Emissions (Average): Reflector Grid Antenna, Channel 5

Page 44 of 57

FCC ID: N9CNCL135

Test Data - Radiated Emissions (Peak): Reflector Grid Antenna, Channel 40

[illegible]

Test Data - Radiated Emissions (Average): Reflector Grid Antenna, Channel 40

[illegible]

() Denotes failing emission level.

Test Data - Radiated Emissions (Peak): Reflector Grid Antenna, Channel 75

[illegible]

() Denotes failing emission level.

FCC ID: N9CNCL135

Test Data - Radiated Emissions (Average): Reflector Grid Antenna, Channel 75

[illegible]

Test Data - Radiated Emissions (Peak): Yagi Antenna, Channel 5

[illegible]

() Denotes failing emission level.

FCC ID: N9CNCL135

Test Data - Radiated Emissions (Average): Yagi Antenna, Channel 5

[illegible]

Test Data - Radiated Emissions (Peak): Yagi Antenna, Channel 40

Page 51 of 57

FCC ID: N9CNCL135

Test Data - Radiated Emissions (Average): Yagi Antenna, Channel 40

[illegible]

Test Data - Radiated Emissions (Peak): Yagi Antenna, Channel 75

[illegible]

() Denotes failing emission level.

FCC ID: N9CNCL135

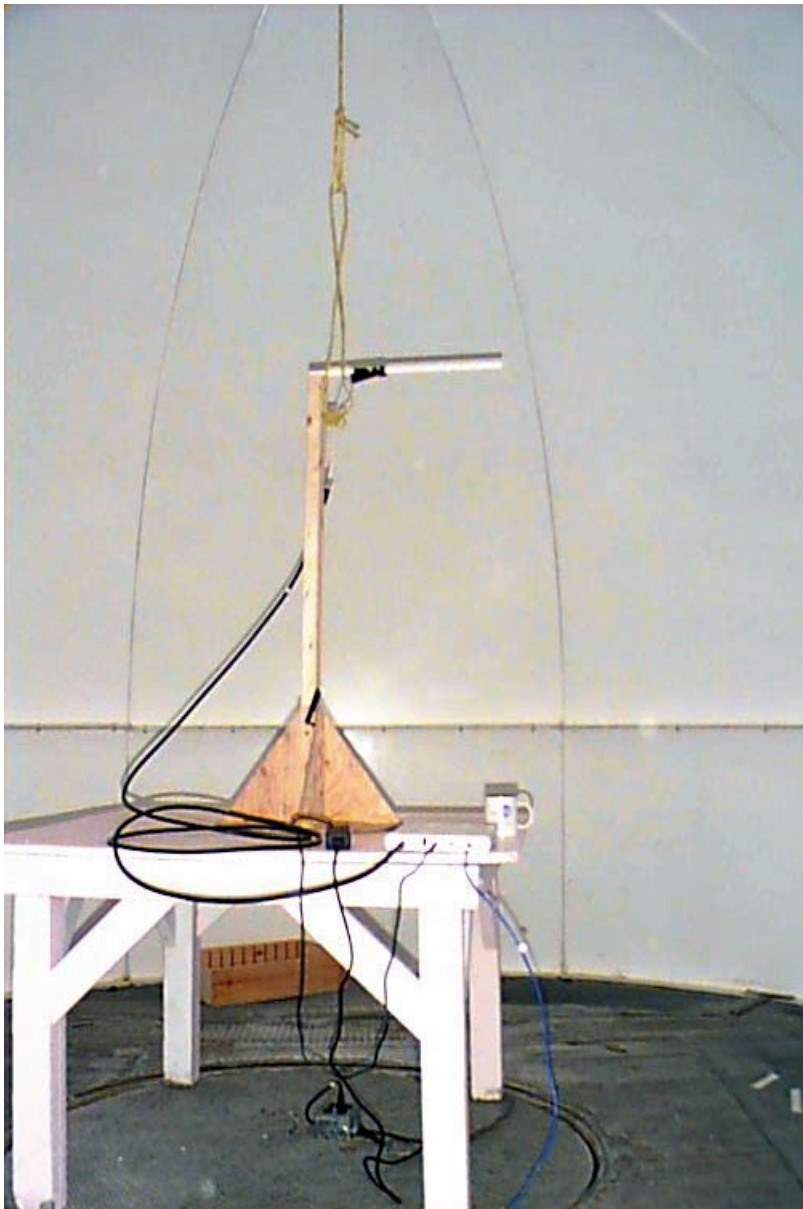
Test Data - Radiated Emissions (Average): Yagi Antenna, Channel 75

[illegible]

EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135

Radiated Photographs (Worst Case Configuration)

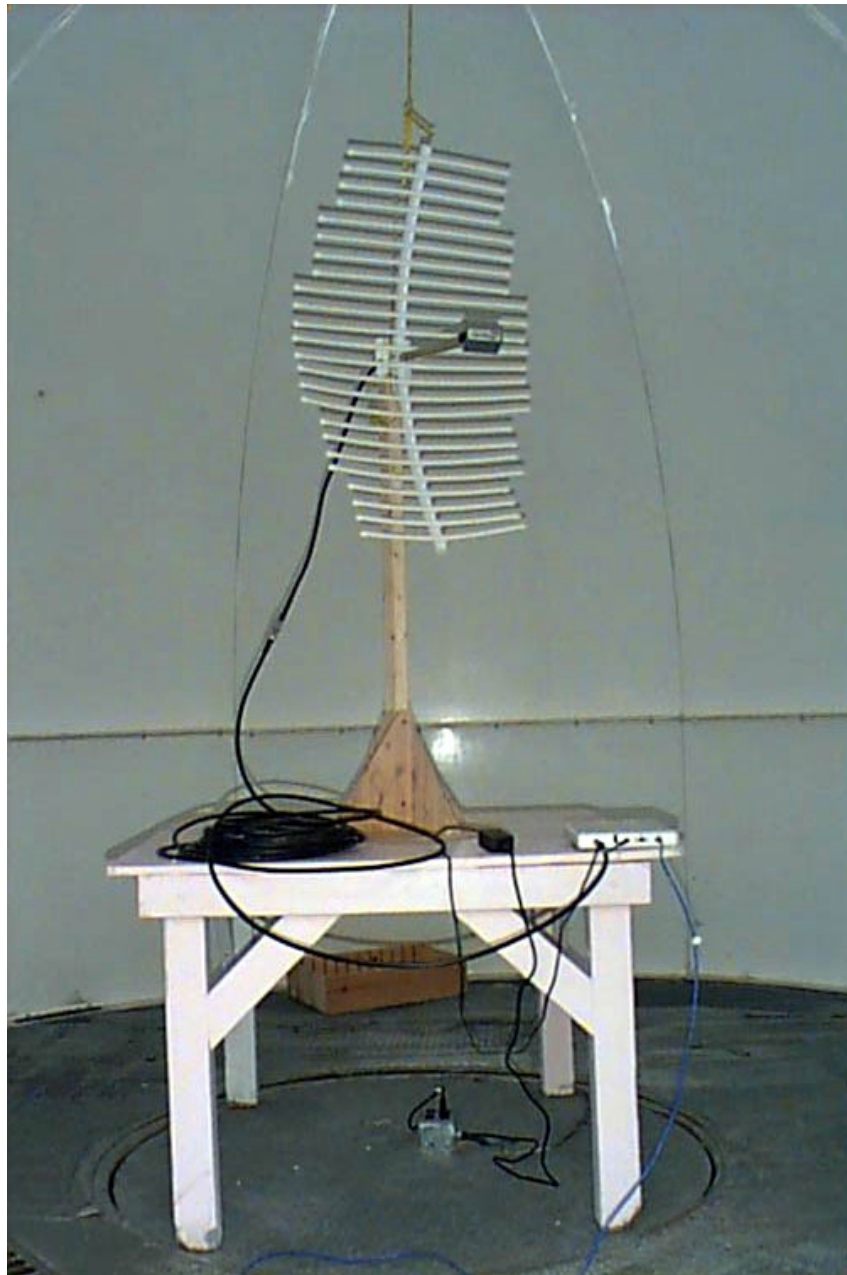
NCL 135 with dBi Yagi Antenna



EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135

Radiated Photographs (Worst Case Configuration)

NCL 135 with 24 dBi Grid Reflector



EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135

Section 11. Test Equipment List

CAL CYCLE	EQUIPMENT	MANUFACTURER	MODEL	SERIAL	LAST CAL.	NEXT CAL.	
1 Year	Spectrum Analyzer	Hewlett Packard	8565E	FA000981	May 20/98	May 20/99	
1 Year	Spectrum Analyzer-1	Hewlett Packard	8566B	2311A02238	Sept. 30/97	Sept. 30/98	
1 Year	LISN	Tegam	95300-50	T-12855/56	July 24/98	July 24/99	
2 Year	Horn Antenna	EMCO #2	3115	4336	Oct. 30/97	Oct. 30/99	
1 Year	Low Noise Amplifier	Avantek	AWT-8035	1005	Aug. 4/98	Aug. 4/99	
1 Year	Low Noise Amplifier	DBS Microwave	DWT-13035	9623	Aug. 4/98	Aug. 4/99	
3 Year	Standard Gain Horn	Electro-Metrics	SH-50/60-1	FA000479	July 29/97	July 29/00	

NA: Not Applicable
NCR: No Cal Required

EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135

ANNEX A

TEST METHODOLOGIES

EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135

NAME OF TEST: Powerline Conducted Emissions	PARA. NO.: 15.207(a)
---	----------------------

Test Conditions:

Standard Temperature and Humidity
Standard Test Voltage

Minimum Standard:

The R.F. that is conducted back onto the AC power line on any frequency within the band 0.45 to 30 MHz shall not exceed 250 μ V (48 dB μ V) across 50 ohms.

EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135

NAME OF TEST: Channel Separation	PARA. NO.: 15.247(a)(1)
----------------------------------	-------------------------

Test Conditions: Standard Temperature and Humidity
Standard Test Voltage

MINIMUM STANDARD: Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135

NAME OF TEST: Pseudorandom Hopping Algorithm	PARA. NO.: 15.247(a)(1)
--	-------------------------

Test Conditions: Standard Temperature and Humidity
Standard Test Voltage

Minimum Standard: The system shall hop to channel frequencies that are selected from a pseudorandomly ordered list of hopping frequencies. Each frequency must be used equally on average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their transmitters and shall shift frequencies in synchronization with the transmitted signals.

EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135

NAME OF TEST: Time of Occupancy	PARA. NO.: 15.247(a)(1)(ii)
---------------------------------	-----------------------------

Test Conditions: Standard Temperature and Humidity
Standard Test Voltage

Minimum Standard: The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.

EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135

NAME OF TEST: Occupied Bandwidth

PARA. NO.: 15.247(a)(2)

Test Conditions: Standard Temperature and Humidity
Standard Test Voltage

Minimum Standard: The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz for 902 - 928 MHz transmitters.

Method Of Measurement:

The spectrum analyzer is set as follows:

RBW: At least 1% of span/div.

VBW: >RBW

Span: Sufficient to display 20 dB bandwidth

LOG dB/div.: 10 dB

Sweep: Auto

Number of channels tested:

Tuning range	Number of channels tested	Channel location in band
1 MHz or less	1	middle
1 to 10 MHz	2	top and bottom
more than 10 MHz	3	top, middle, bottom

EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135

NAME OF TEST: Peak Power Output	PARA. NO.: 15.247(b)
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Test Conditions: Standard Temperature and Humidity
 Standard Test Voltage

Minimum Standard: The maximum peak power output shall not exceed 1 watt.
 If transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Direct Measurement Method For Detachable Antennas:

If the antenna is detachable, a peak power meter is used to measure the power output with the transmitter operating into a 50 ohm load.

Calculation Of EIRP For Integral Antenna:

If the antenna is not detachable from the circuit then the Peak Power Output is derived from the peak radiated field strength of the fundamental emission by using the plane wave relation

$GP/4\pi R^2 = E^2/120\pi$ and proceeding as follows:

$$P = \frac{E^2 R^2}{30G} = \frac{E^2 3^2}{30G}$$

where,

P = the equivalent isotropic radiated power in watts

E = the maximum measured field strength in V/m

R = the measurement range (3 meters)

G = the numeric gain of the transmit antenna in relation to an isotropic radiator

The RBW of the spectrum analyzer shall be set to a value greater than the measured 20 dB occupied bandwidth of the E.U.T.

Number of channels tested:

Tuning range	Number of channels tested	Channel location in band
1 MHz or less	1	middle
1 to 10 MHz	2	top and bottom
more than 10 MHz	3	top, middle, bottom

EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135

NAME OF TEST: Spurious Emissions at Antenna Terminals PARA. NO.: 15.247(c)

Test Conditions: Standard Temperature and Humidity
Standard Test Voltage

Minimum Standard: In any 100kHz bandwidth outside the 902 - 928 MHz bands
emissions shall be at least 20 dB below the fundamental emission or
shall not exceed the following field strength limits. Emissions falling in
the restricted bands of 15.205 shall not exceed the following field
strength limits:

Frequency (MHz)	Field Strength ($\mu\text{V/m}$ @ 3m)	Field Strength (dB @ 3m)
30 - 88	100	40.0
88 - 216	150	43.5
216 - 960	200	46.0
Above 960	500	54.0

THE SPECTRUM WAS SEARCHED TO THE 10th HARMONIC

Method Of Measurement:

30 MHz - 10th harmonic plot

RBW: 100 kHz

VBW: 300 kHz

Sweep: Auto

Display line: -20 dBc

Lower Band Edge

RBW: At least 1% of span/div.

VBW: >RBW

Span: As necessary to display any spurious at band edge.

Sweep: Auto

Center Frequency: 902 MHz

Marker: Peak of fundamental emission

Marker Δ : Peak of highest spurious level below 902 MHz

Upper Band Edge

RBW: At least 1% of span/div.

VBW: >RBW

Span: As necessary to display any spurious at band edge.

Sweep: Auto

Center Frequency: 928 MHz

Marker: Peak of fundamental emission

Marker Δ : Peak of highest spurious level above 928 MHz

Number of channels tested:

Tuning range	Number of channels tested	Channel location in band
1 MHz or less	1	middle
1 to 10 MHz	2	top and bottom
more than 10 MHz	3	top, middle, bottom

EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135

NAME OF TEST: Radiated Spurious Emissions

PARA. NO.: 15.247(c)

Test Conditions: Standard Temperature and Humidity
Standard Test Voltage

Minimum Standard: In any 100kHz bandwidth outside the 902 - 928 MHz bands emissions shall be at least 20 dB below the fundamental emission or shall not exceed the following field strength limits.
Emissions falling in the restricted bands of 15.205 shall not exceed the following field strength limits:

Frequency (MHz)	Field Strength ($\mu\text{V/m @ 3m}$)	Field Strength (dB @ 3m)
30 - 88	100	40.0
88 - 216	150	43.5
216 - 960	200	46.0
Above 960	500	54.0

THE SPECTRUM WAS SEARCHED TO THE 10th HARMONIC

15.205 Restricted Bands

MHz	MHz	MHz	GHz
0.09-0.11	16.42-16.423	399.9-410	4.5-5.25
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.125-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2655-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41	1718		

Number of channels tested:

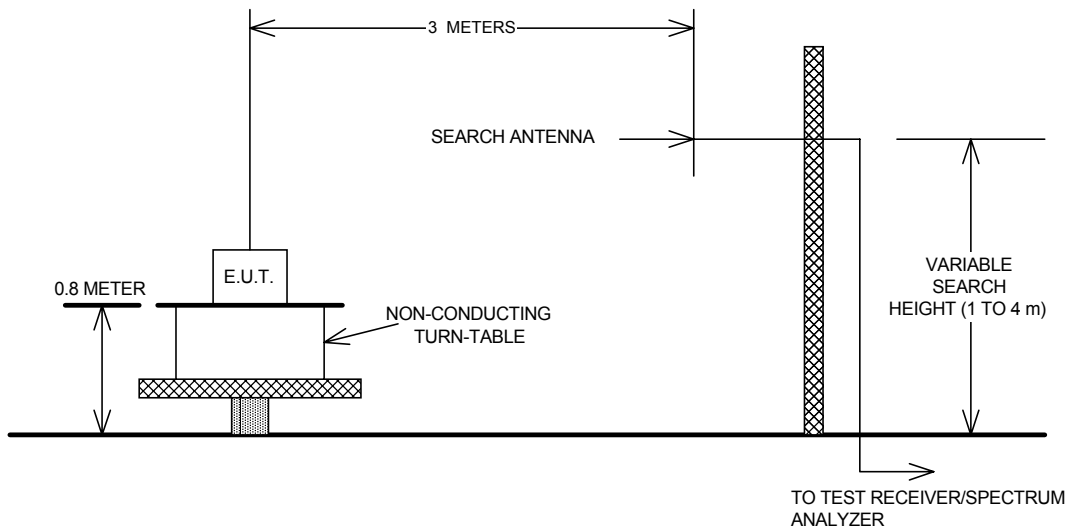
Tuning range	Number of channels tested	Channel location in band
1 MHz or less	1	middle
1 to 10 MHz	2	top and bottom
more than 10 MHz	3	top, middle, bottom

EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135

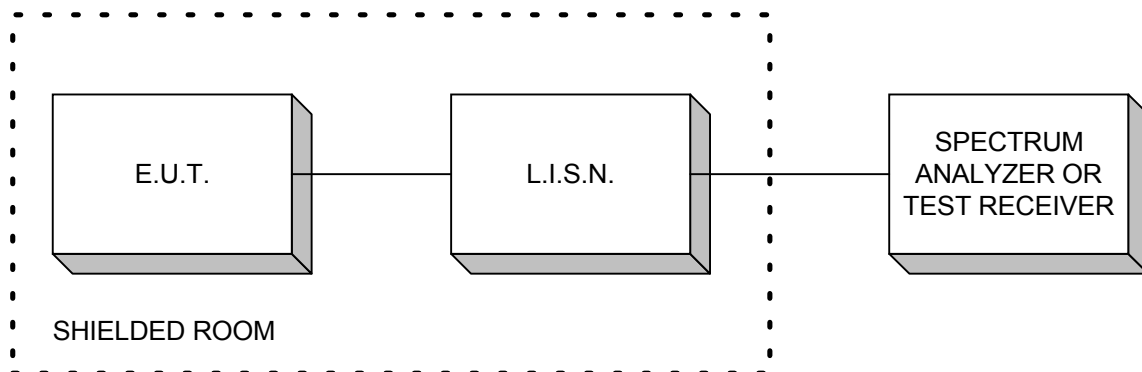
ANNEX B
BLOCK DIAGRAMS

EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135

Test Site For Radiated Emissions



Conducted Emissions



EQUIPMENT: NCL135 Spread Spectrum Frequency Hopping Transmitter
FCC ID: N9CNCL135

Peak Power At Antenna Terminals

