APPENDIX A - TEST REPORT

International Compliance Corporation
"Your Certification Solution" sm

Dallas/Ft. Worth Headquarters:
802 N. Kealy
Lewisville, TX 75057
Tel: (972) 436-9600
Fax: (972) 436-2667

Data Report

Workorder # **1800218** Date **6/24/98**

Client must complete box 1 and sign
Please provide information as it should be presented in report

Equipment Under Test (EUT) Box 1

Model Number/Name (This form will appear in formal test report)
Please print upper/lower case, space, dashes, slashes, hyphens, etc., in the spaces provided

N	O	D	E		E	Q	U	I	P	M	E	N	T											
S	O	L	I	D	-	S	T	A	T	E		T	R	A	N	S	M	I	T	T	E	R		(| U | S |)	

Serial Number **005** Part Number **3214823-001 & -002**

Clock, Oscillator, Highest Frequencies Utilized: (If >108 MHz additional test may be required)
7.3828, 960 & 960 - 1950 MHz, 13.02, 13.2, 13.275, 26.04, 26.4 & 26.55 & 27.35 - 28.5 GHz

EUT Test Configurations: **FCC Part 2/101, 2.985, 2.987, 2.989, 2.991, 2.993 and 2.995 with unit operating at one CW test frequency, three simulated and one actual QPSK input frequencies, all at maximum rated output power (1 watt)**

Video Mode(s): **N/A**

EUT mode of Operation: **Steady-state with unit operating at one CW test frequency, three simulated and one actual QPSK input frequencies, all at max. rated output power (1 watt)**

I (Client Representative) E W Paschetag understand all information including the Model number/name above will appear on the formal test report as indicated and may effect test duration.

Representative: E.W.Paschetag
Company: *Bosch Telecom, Inc.*
Address: *PO Box 742466*
Dallas, TX 75374

Telephone: (972) 997-3270
Alternate: (972) 879-3252
Fax: (972) 997-3181
After hours: (972) 997-3270

If you will not witness testing, please indicate after hours or pager number.

To be completed by ICC Box 2

Worst-case Mode/Configuration: Tx lw

International Compliance Corporation
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HARDWARE

Client: Bosch Telecom W.O#: 180218

EUT: Node Transmitter S/N: Unit #5

Date: 6/17/98

Place "*" next to EUT and any item that is part of the EUT. Please complete every column using N/A or unknown if needed.

Generic Description	Manufacturer	Model #	Serial #	Part #	FCC ID Status **
Node Transmitter *	Bosch	~~none~~ SP2100 6.gm	Unit #5	~~none~~ 3214823-001/-002 6.gm	4

** FCC ID Status
1. FCC DOC
2. FCC A Verification
3. FCC B Verification
4. NONE (If performing FCC testing, contact lab manager.)
5. Certification (Include FCC ID in parenthesis.)

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Cable List - Transmitter (Radiated Testing)

Item	Cable Type	Manufacturer	Model #	Serial #	Termination	Length	Shield	Quantity	Hood Type
1	Multicond.	Bosch	3214944-002	N/A	EUT	8'-0"	Yes	1	Backshell
2,3	Coaxial	Florida Labs	8000048-022	N/A	EUT	8'-0"	Yes	2	Type N
5,7	Coaxial	Times	LMR-500-FR	N/A	N(f) Adptr.	175'	Yes	2	Type N
6	Multicond.	Belden	1484A	N/A	J-Box	135'	Yes	1	Backshell
4	Multicond.	Belden	9843	N/A	J-Box	135'	Yes	1	Unterminated
8	Multicond.	Unk.	Unk.	N/A	RS-232 I/F	10'	No	1	None
9	Single Conductor	Unk	Unk.	N/A	EUT	8'	No	1	None
	Resin Capwire	Valox	8 AWG	N/A	N/A	N/A	N/A	N/A	None

Cable List - Transmitter (Non-Radiated Testing)

Item	Cable Type	Manufacturer	Model #	Serial #	Termination	Length	Shield	Quantity	Hood Type
1	Multicond.	Belden	M9320 (4 ea.)	N/A	EUT	15'	Yes	1	None
2,3	Coaxial	Florida Labs	8000048-022	N/A	EUT	8'-0"	Yes	2	Type N
4	Multicond.	Unk.	Unk.	N/A	RS-232 I/F	10'	No	1	None
5	Single Conductor	Unk	Unk.	N/A	EUT	8'	No	1	None
	Resin Capwire	Valox	8 AWG	N/A	N/A	N/A	N/A	N/A	None

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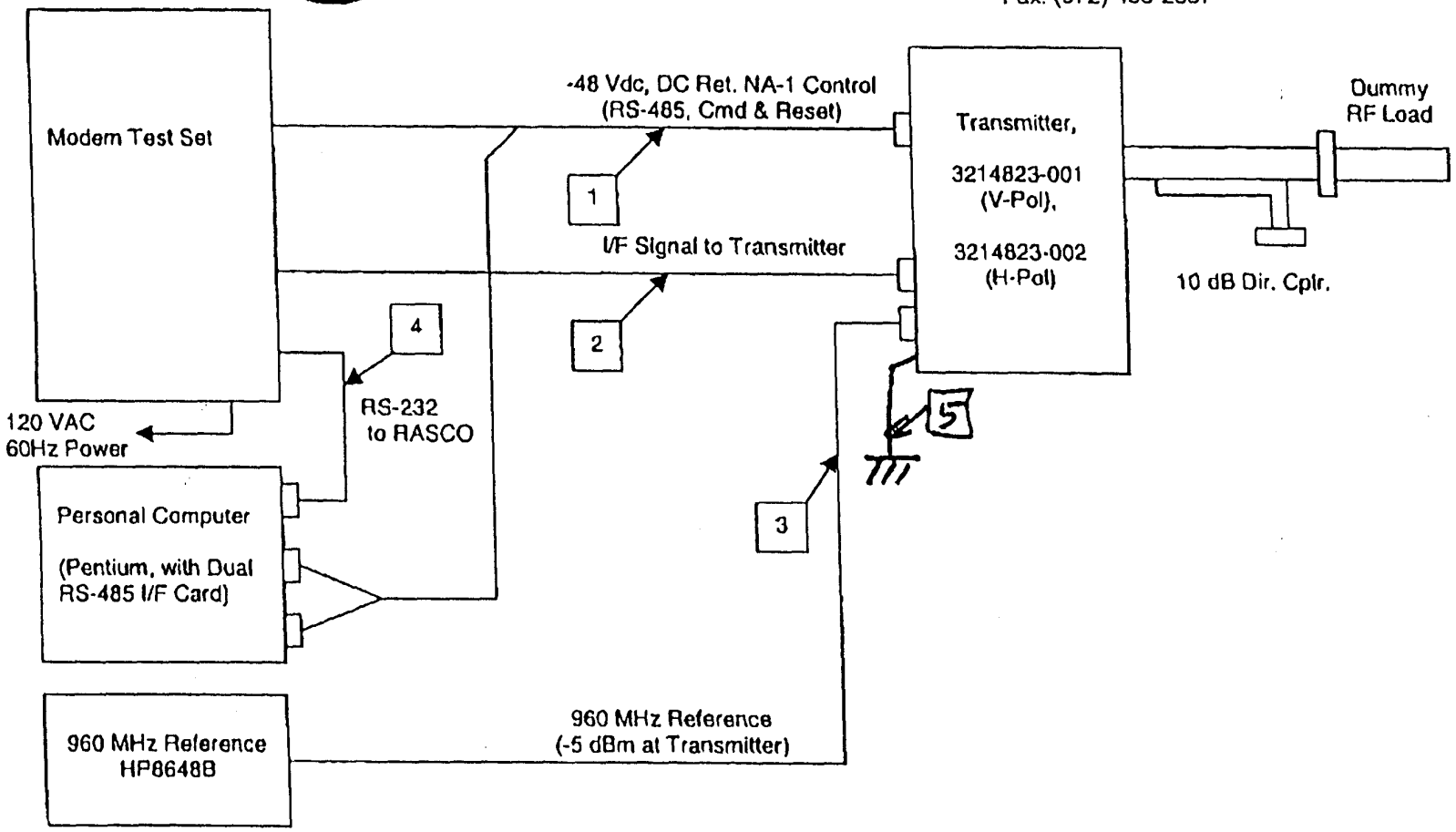
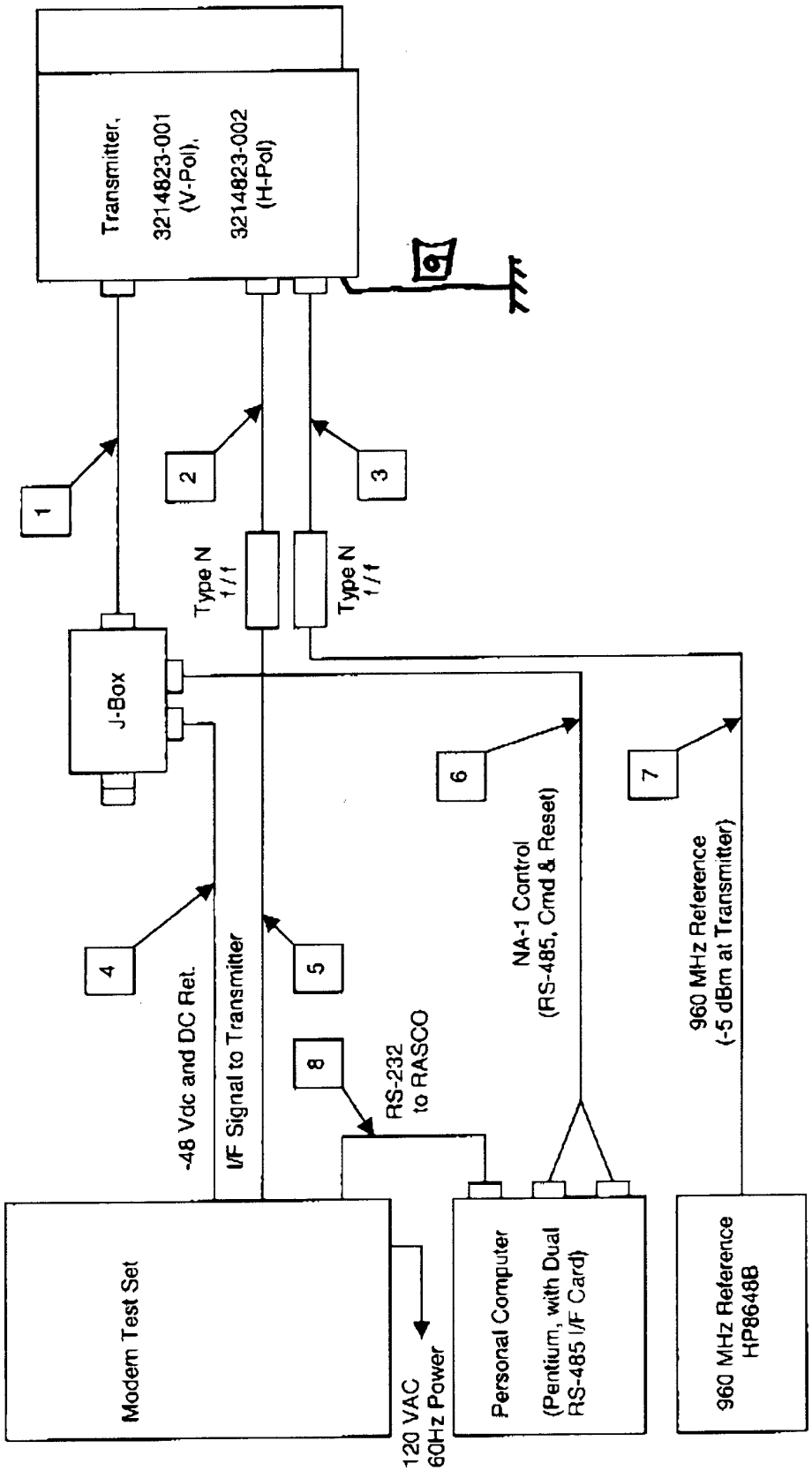


Test Arrangement for Operation of Transmitter During Antenna Conducted Emission Testing



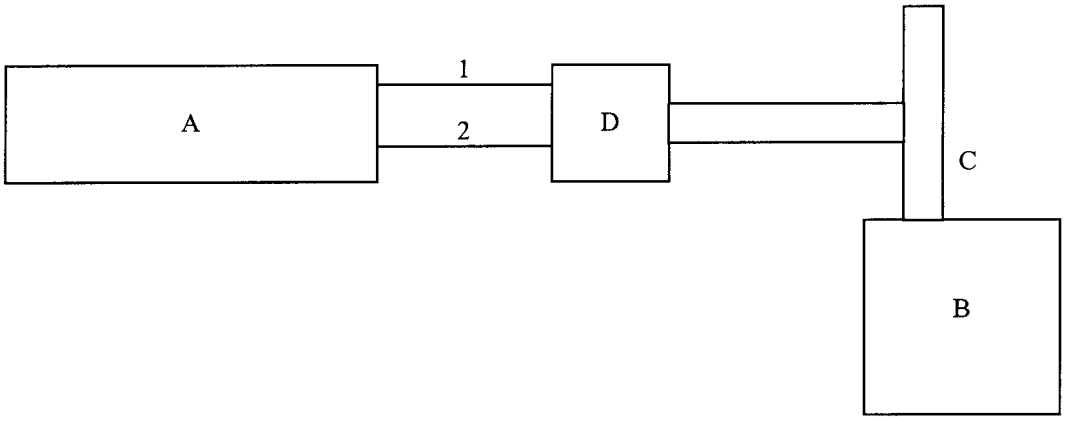
Test Arrangement for Operation of Transmitter During Radiated Emission Testing

APPENDIX B - TEST DATA

Model Node Equipment Solid-State Transmitter (US)

Bosch Telecom, Inc.

RF POWER SPECTRAL DENSITY



HARDWARE:

A: HP Spectrum Analyzer Model 8563E, KTL # G2624
B: EUT - Bosch Transmitter Model TX005
C: Millimeter Products Inc.:
20 dB Directional Coupler P/N 559A-20/599, S/N DC9808
20 dB attenuator P/N 521A-20/599, S/N DC9807
6 dB attenuator , P/N 521A-6/599, S/N DC9810
D: HP Harmonic Mixer Model 11970A KTL # ICC878

CABLE:
1: Coaxial Cable KTL # CF24
2. Coaxial Cable KTL # CF20

Note:
Power measurements were made at the forward power port of the directional coupler with the 20 dB and 6 dB attenuators in line. The direct output of the directional coupler is terminated with a 50 ohm load.

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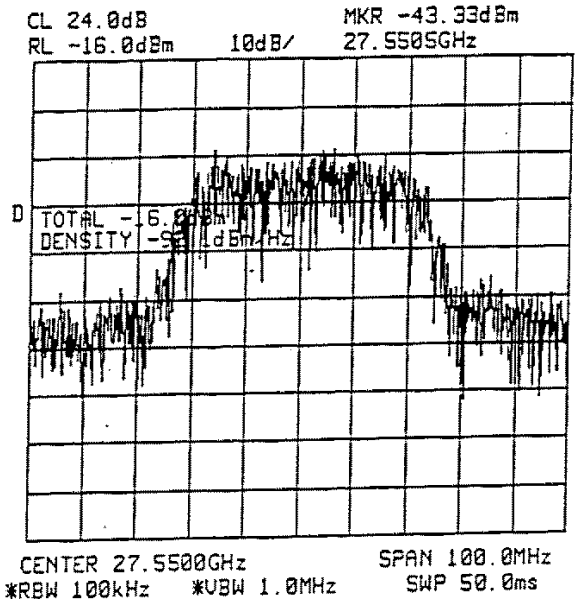
TST9.PCX HP 8563E <18> 10/27/98 03:17:14 PM



Single Channel QPSK
bandwidth: 40MHz.
Channel Power BW: 40MHz
Density: -92.5dBm/Hz

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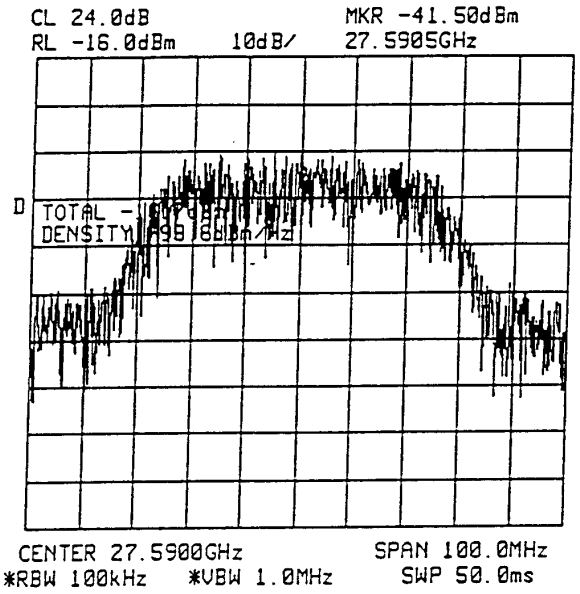
TST10.PCX HP 8563E <18> 10/27/98 03:22:38 PM



Single Channel QPSK
bandwidth: 50MHz
Channel Power BW: 50MHz
Density: -93.6dBm/Hz

Dallas/Ft. Worth Headquarters:
802 N. Kealy
Lewisville, TX 75057
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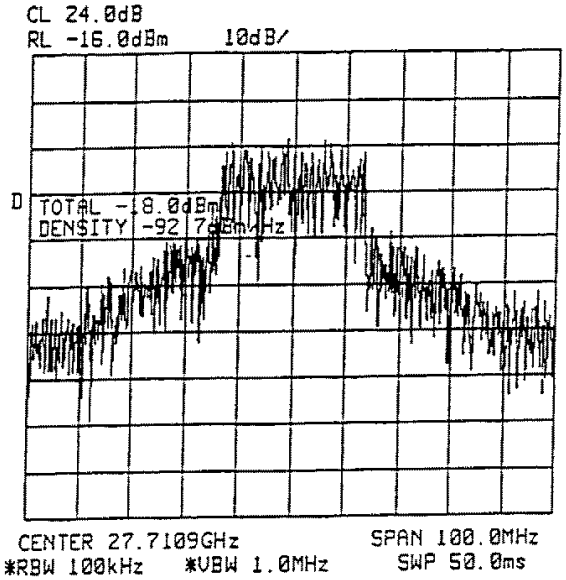
TST11.PCX HP 8563E <18> 10/27/98 03:44:35 PM



Multichannel QPSK
bandwidth: 30MHz
Channel Power BW: 30MHz
Density: -92.7dBm/Hz

Model Node Equipment Solid-State Transmitter (US)

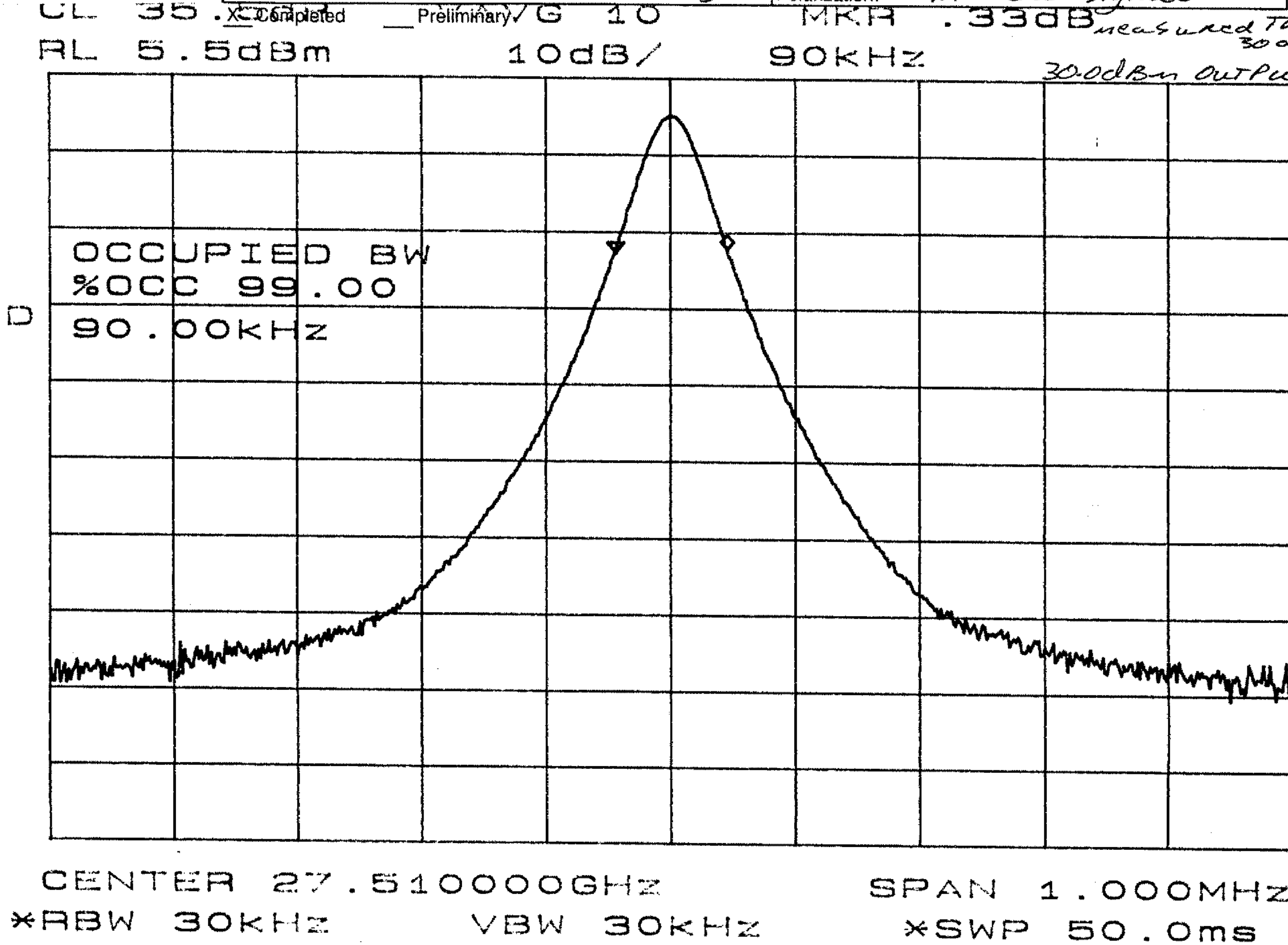
Bosch Telecom, Inc.

MODULATION CHARACTERISTICS

International Compliance Corporation

Client Name:	BOSCH TELECOM	Work Order #:	180218
Model Number:	**NODE TRANSMITTER**	Plot Number:	2
Test Date:	6/16/98 unit #5	Polarization:	N/A CW Signal

X Completed __ Preliminary



national Compliance Corporation

Client Name:	BOSCH TLELECOM	Work Order #:	
Model Number:	**NODE TRANSMITTER**	Plot Number:	3 (30 MHz BW QPSK
Test Date:	6/16/98 UNIT #5	Polarization:	N/A

Completed: B Preliminary:

Cab #2 measured thru 30 dB Atten

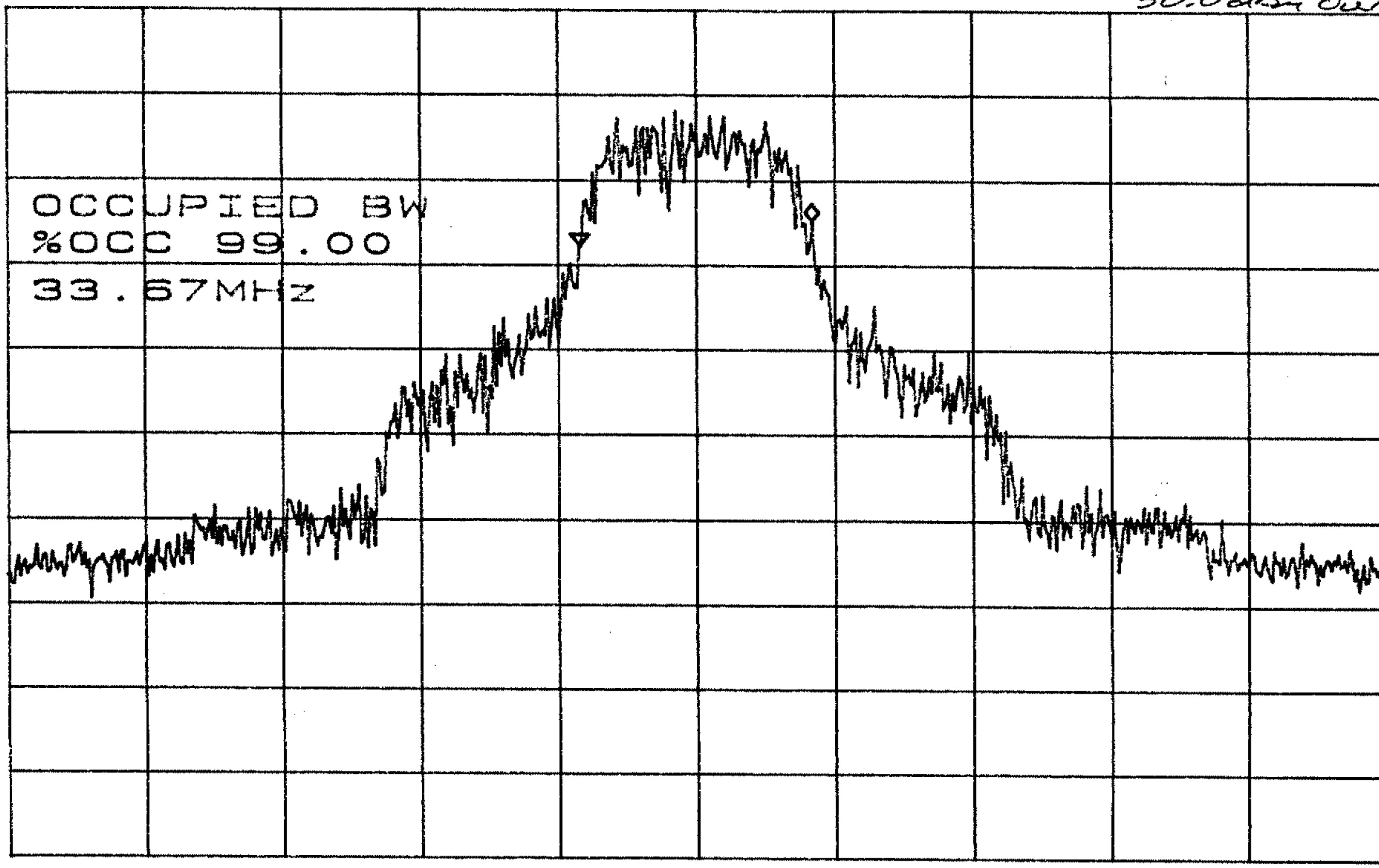
IF Input -10 dBm

CL 30dB VAVG 10 MKR 2.83dB

RL -14.5dBm 10dB/ 33.7MHz

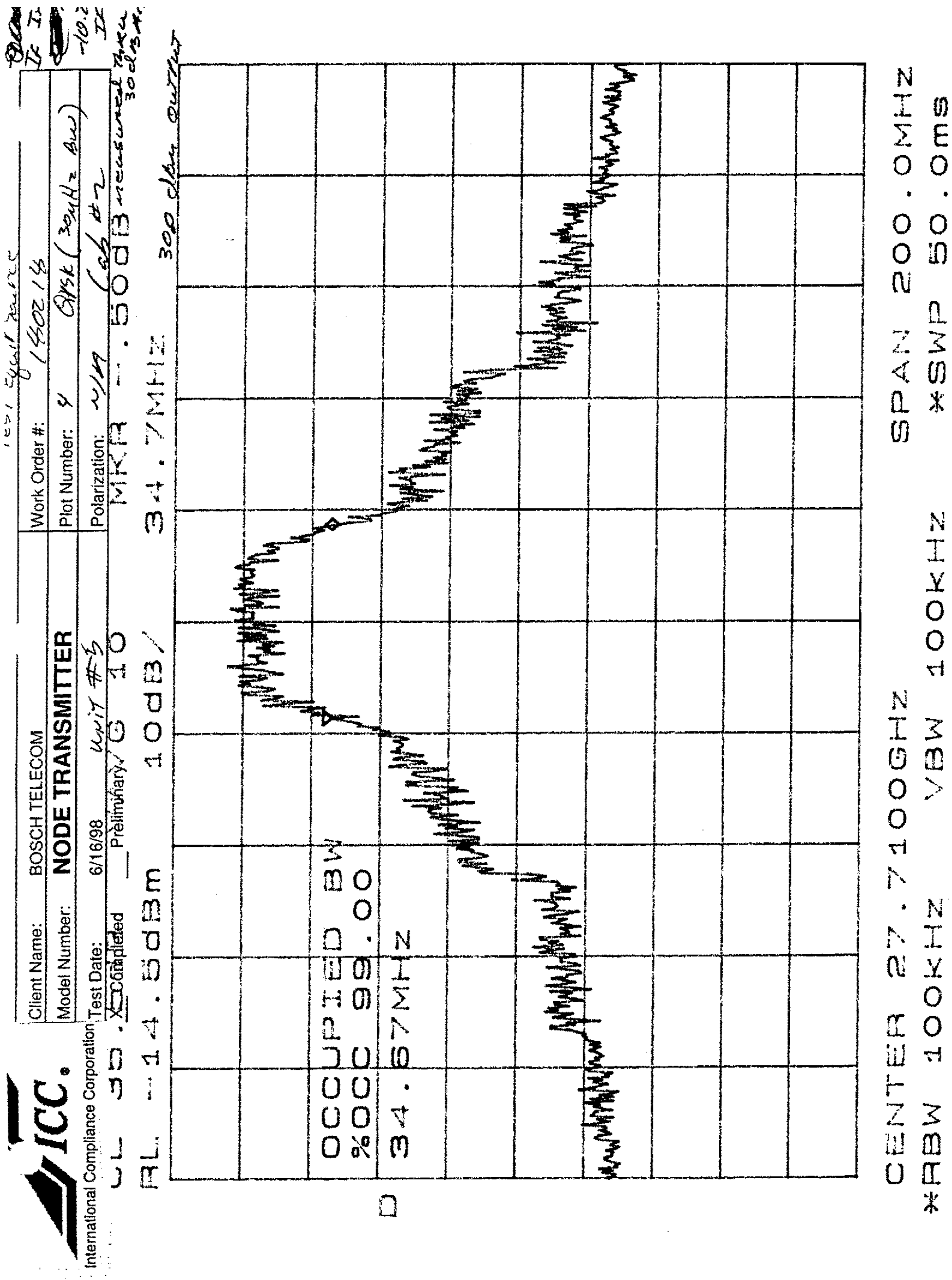
30.0dBm OUTPUT

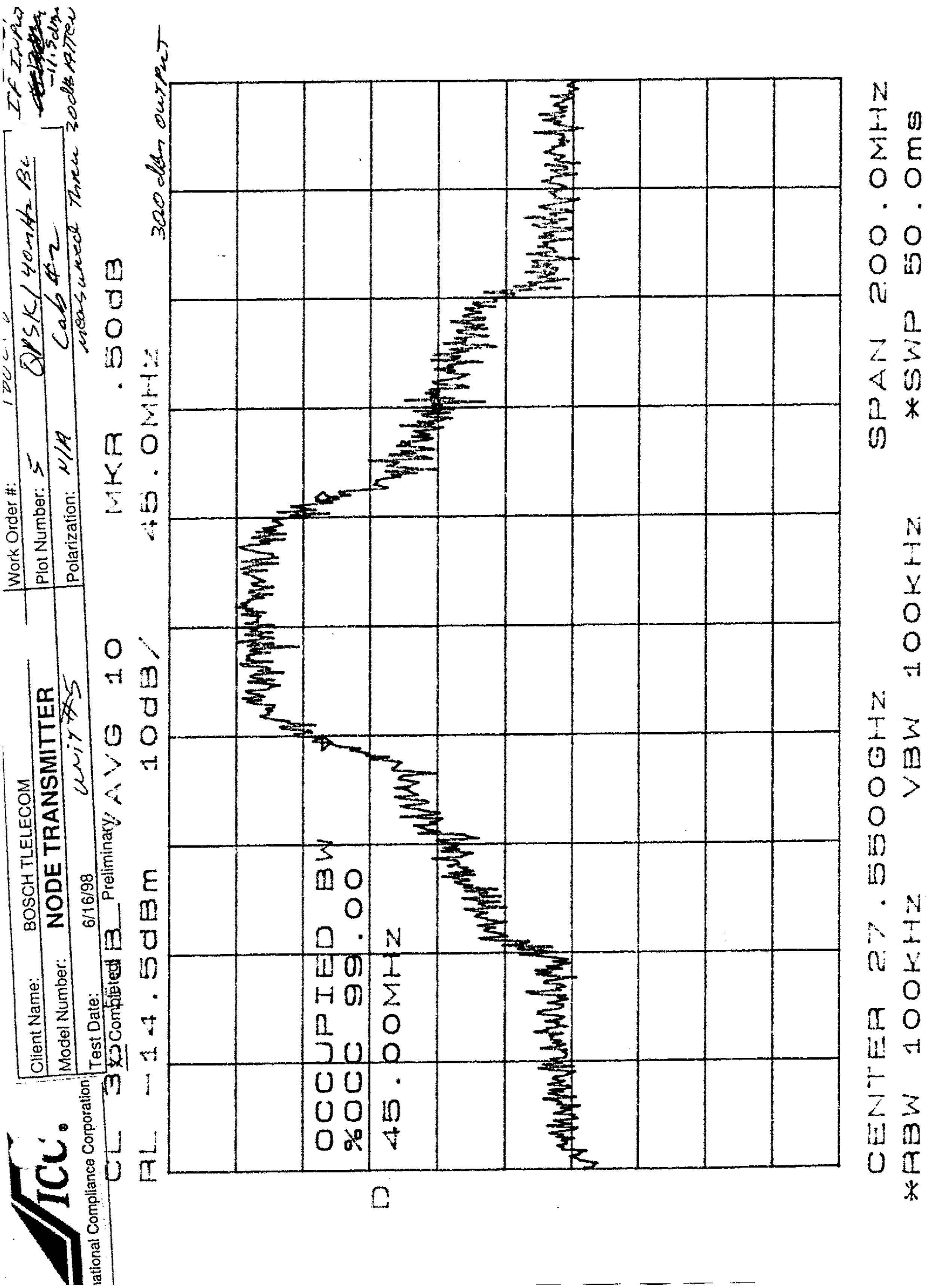
D



CENTER 27.7100GHz SPAN 200.0MHz

*RBW 30kHz VBW 30kHz *SWP 1.00sec

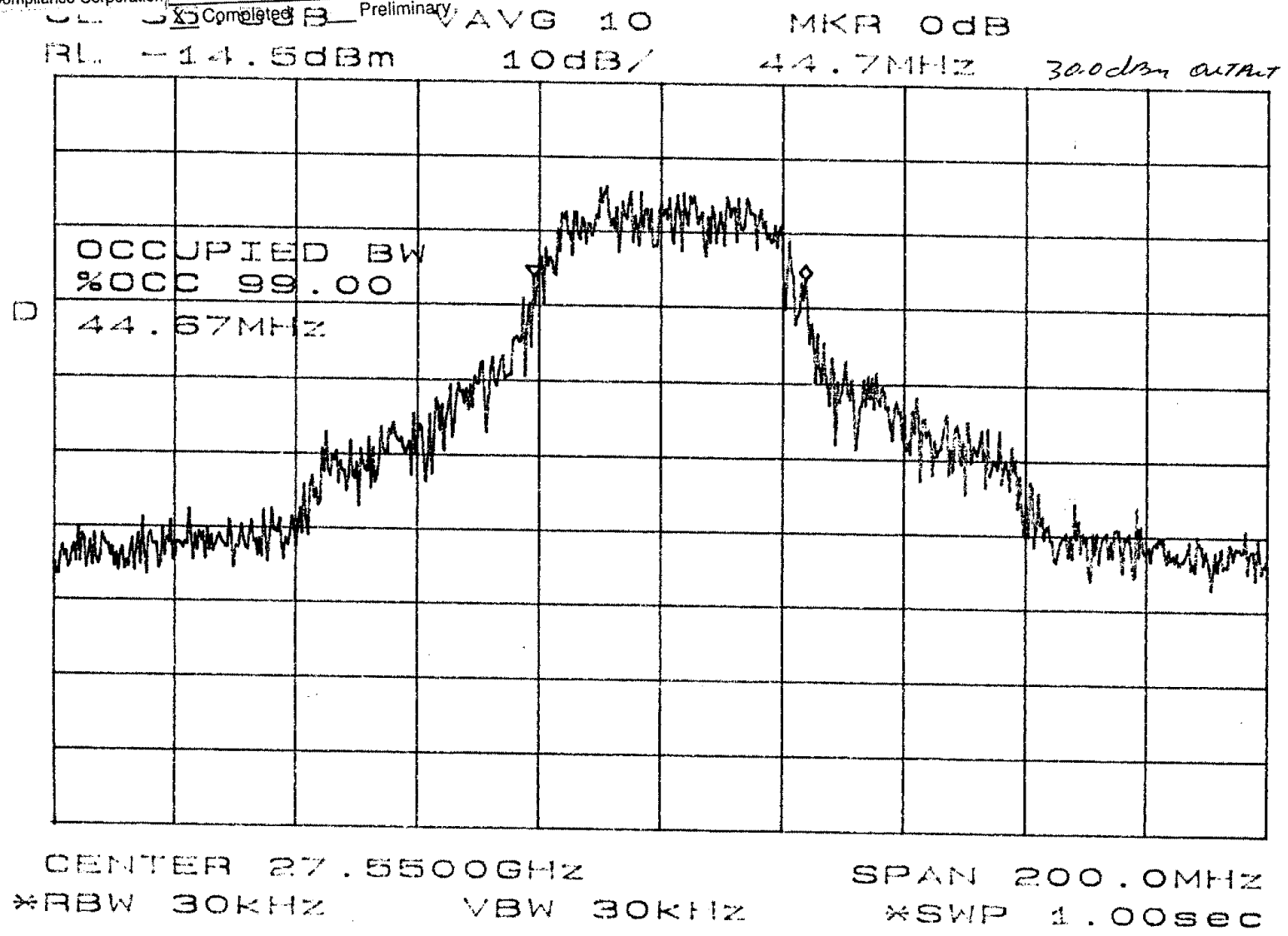

ICC
International Compliance Corporation
Client Name: BOSCH TELECOM
Model Number: NODE TRANSMITTER
Test Date: 6/16/98
Completed
Preliminary
Work Order #:
Plot Number: 4
Polarization:
RL -14.5dBm
10dB/
MKR -1.50dB
34.7MHz
OCCUPIED BW
%OCC 99.00
34.67MHz
CENTER 27.7100GHz
SPAN 200.0MHz
*RBW 100KHz
VBW 100KHz
*SWP 50.0ms

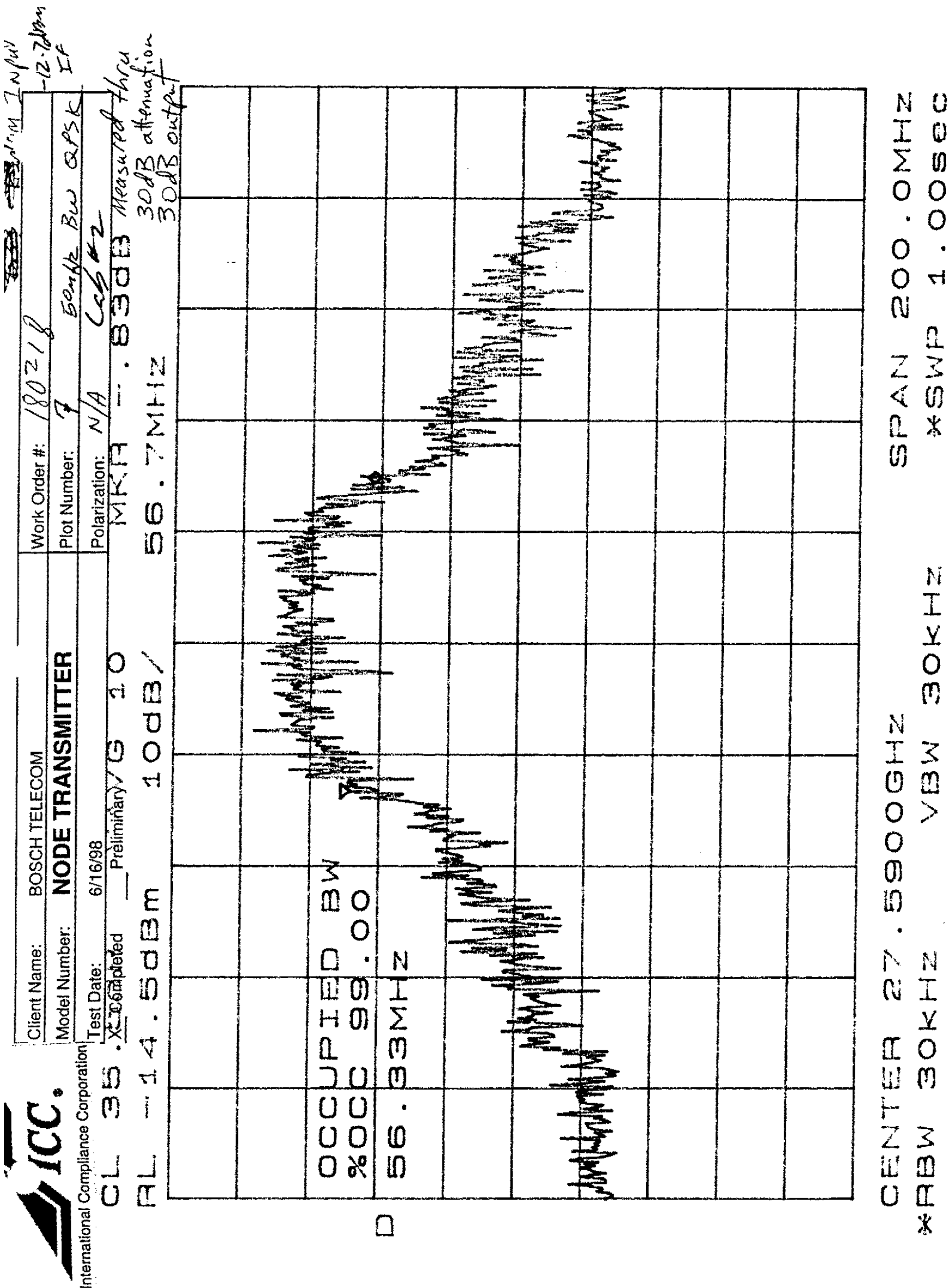

ICC
ational Compliance Corporation
Client Name: BOSCH TLELECOM
Model Number: NODE TRANSMITTER
Test Date: 6/16/98
Work Order #:
Plot Number: 5
Polarization: N/A
Completed Preliminary
CL 30dB AVG 10
RL -11.5dBm 10dB/
MKR .50dB
45.0MHz
OCCUPIED BW
%OCC 99.00
45.00MHz
CENTER 27.5500GHz SPAN 200.0MHz
*RBW 100KHz VBW 100KHz *SWP 50.0ms

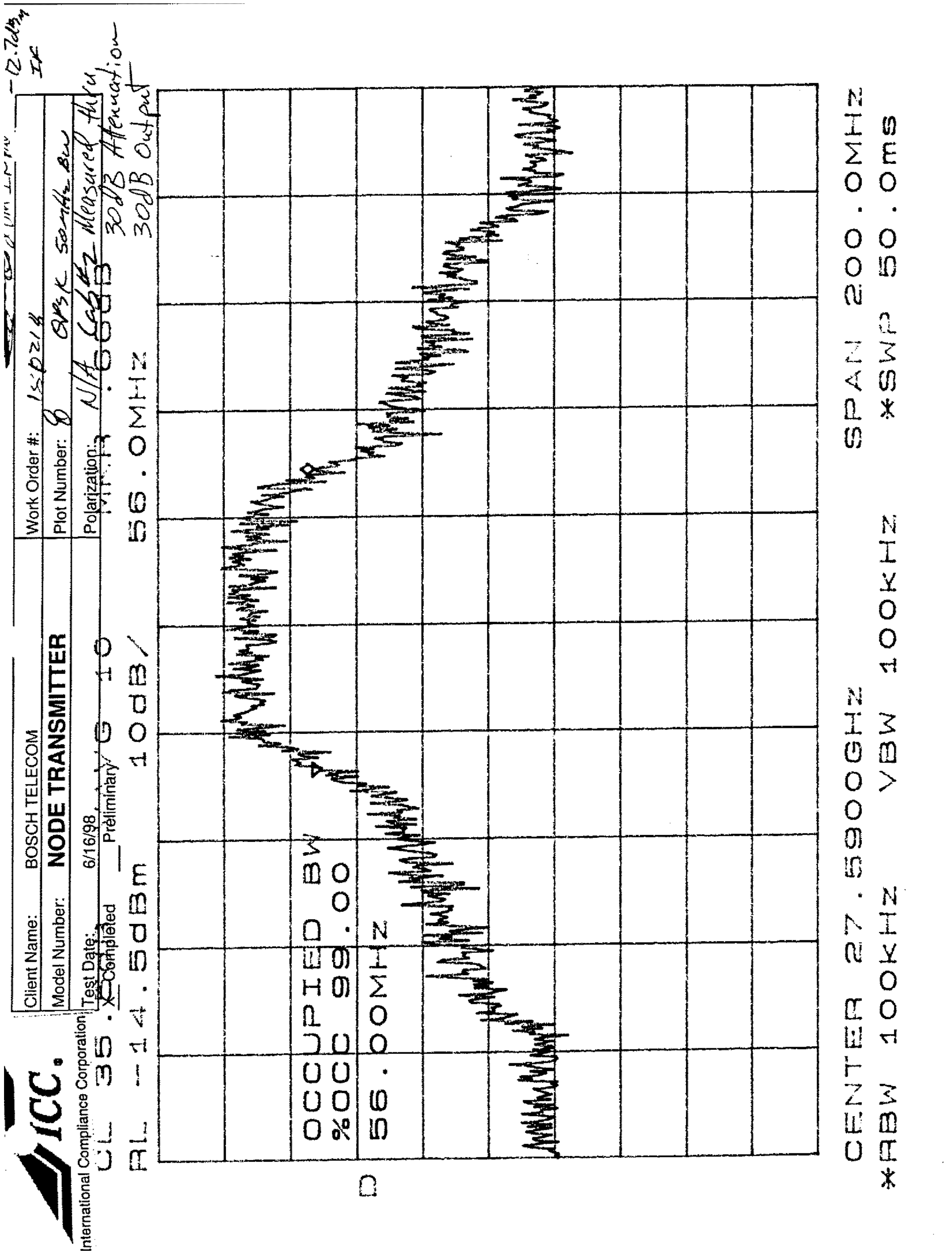
ICC.
National Compliance Corporation

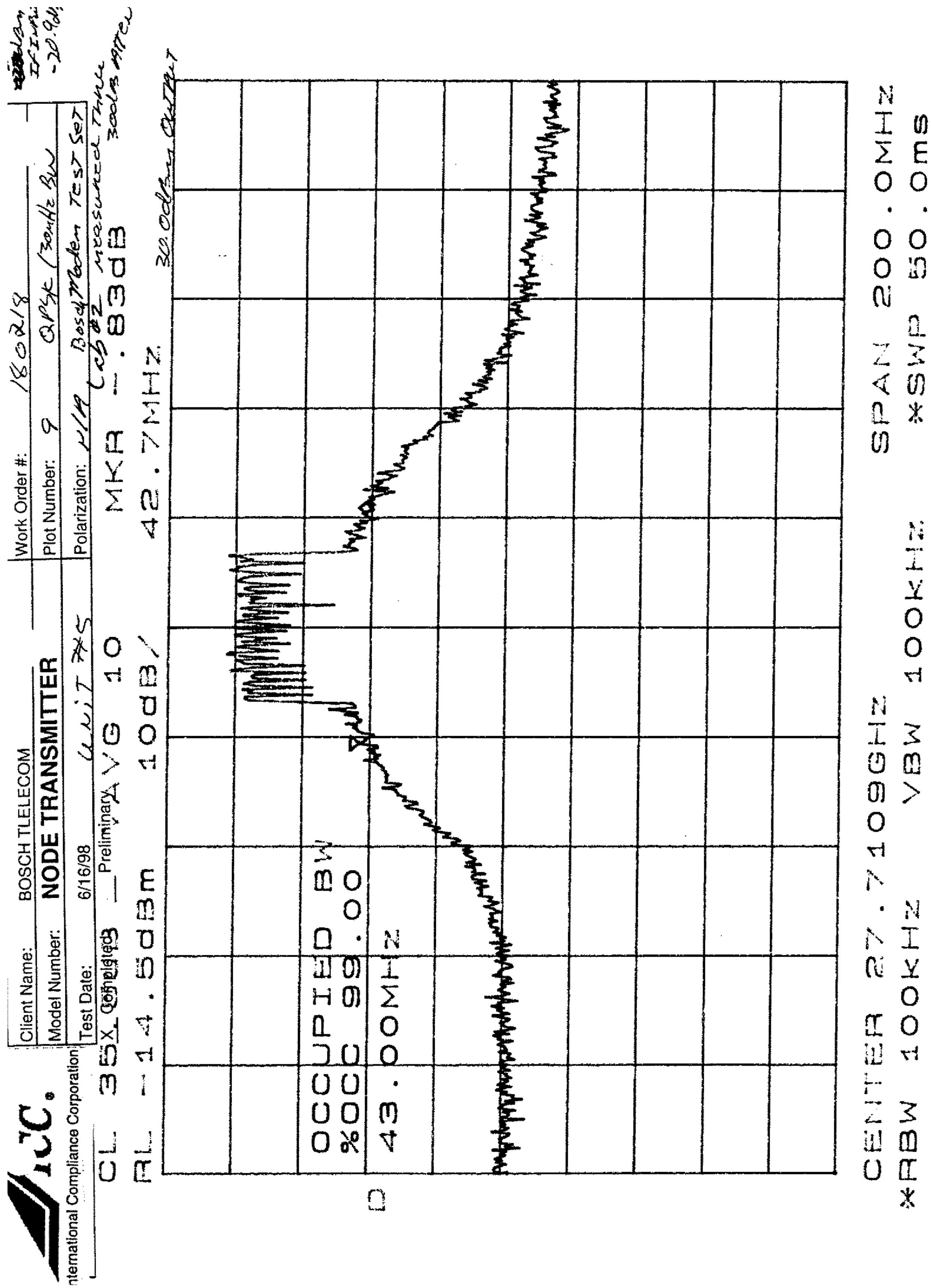
Client Name: BOSCH TLELECOM	Work Order #:
Model Number: NODE TRANSMITTER	Plot Number: 6
Test Date: 6/16/98 Unit #5	Polarization: HR
X Completed ___ Preliminary	

QPSK / 40mHz Bw
Cab #2
measured Thru 30dB Atten
IF INPUT
-11.5dBm




ICC
International Compliance Corporation
Client Name: BOSCH TELECOM
Model Number: NODE TRANSMITTER
Test Date: 6/16/98
X Completed
Preliminary
Work Order #: 180218
Plot Number: 7
Polarization: N/A
80MHz BW QPSK
Cal #2
Measured thru
30dB attenuation
30dB output
-12.7dBm
IF
CL 35.0 /G 10
RL -14.5dBm 10dB/
MKR -.83dB
56.7MHz
OCCUPIED BW
%OCC 99.00
56.33MHz
D
CENTER 27.5900GHz SPAN 200.0MHz
*RBW 30kHz VBW 30kHz *SWP 1.00sec



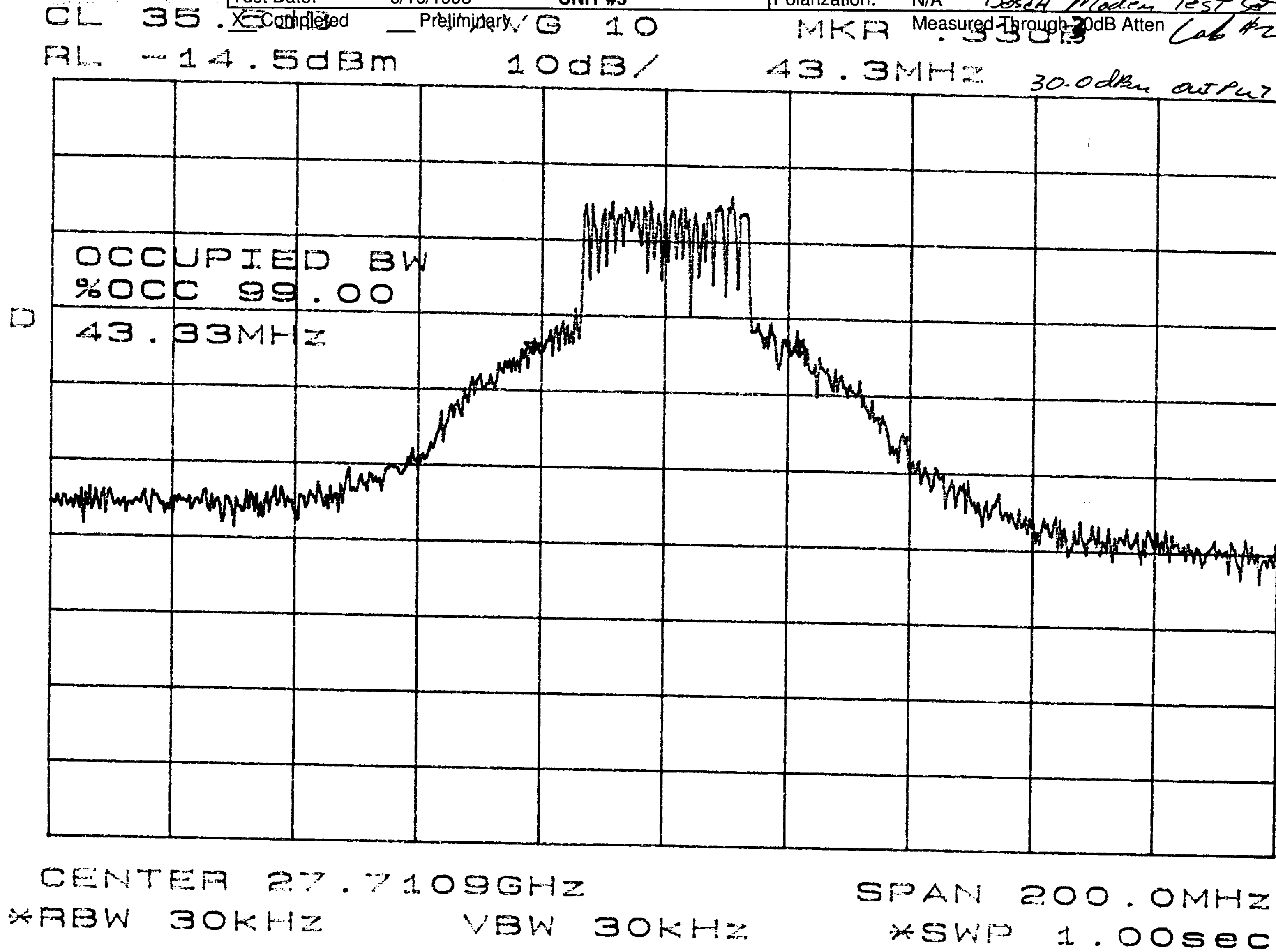

International Compliance Corporation
Client Name: BOSCH TLELECOM
Model Number: NODE TRANSMITTER
Test Date: 6/16/98
X Completed
Preliminary
Work Order #: 18028
Plot Number: 9
Polarization: N/A
RL -14.5dBm
AVG 10
10dB/
MKR -.83dB
42.7MHz
OCCUPIED BW
%OCC 99.00
43.00MHz
CENTER 27.7109GHz
SPAN 200.0MHz
*RBW 100kHz
VBW 100kHz
*SWP 50.0ms

ICC.
International Compliance Corporation

Client Name:	BOSCH TELECOM	Work Order #:	180218
Model Number:	**NODE TRANSMITTER**	Plot Number:	10 QVSK/30MHz BW
Test Date:	6/16/1998 UNIT #5	Polarization:	N/A Bosch Modem Test Set
X Completed	__ Preliminary	Measured Through 20dB Atten	Cab #2

IF Input -20.9 dBm

30.0dBm OUTPUT



Model Node Equipment Solid-State Transmitter (US)

Bosch Telecom, Inc.

OCCUPIED BANDWIDTH

tional Compliance Corporation

Client Name: BOSCH TLELECOM
Model Number: NODE TRANSMITTER
Test Date: 6/16/98 UNIT #5

Plot Number: 3 (30MHz BW GRAPH) 40.2dBm
Polarization: H/A Cab #2 measured thru 30db Atten

[X] Completed [ ] Preliminary

CL 3X AVG 10 MKR 2.83dB
RL -14.5dBm 10dB/ 33.7MHz 30.0dBm OUTPUT

OCCUPIED BW
%OCC 99.00
33.67MHz

CENTER 21.1100GHz SPAN 200.0MHz
*RBW 30KHz VBW 30KHz *SWP 1.00sec

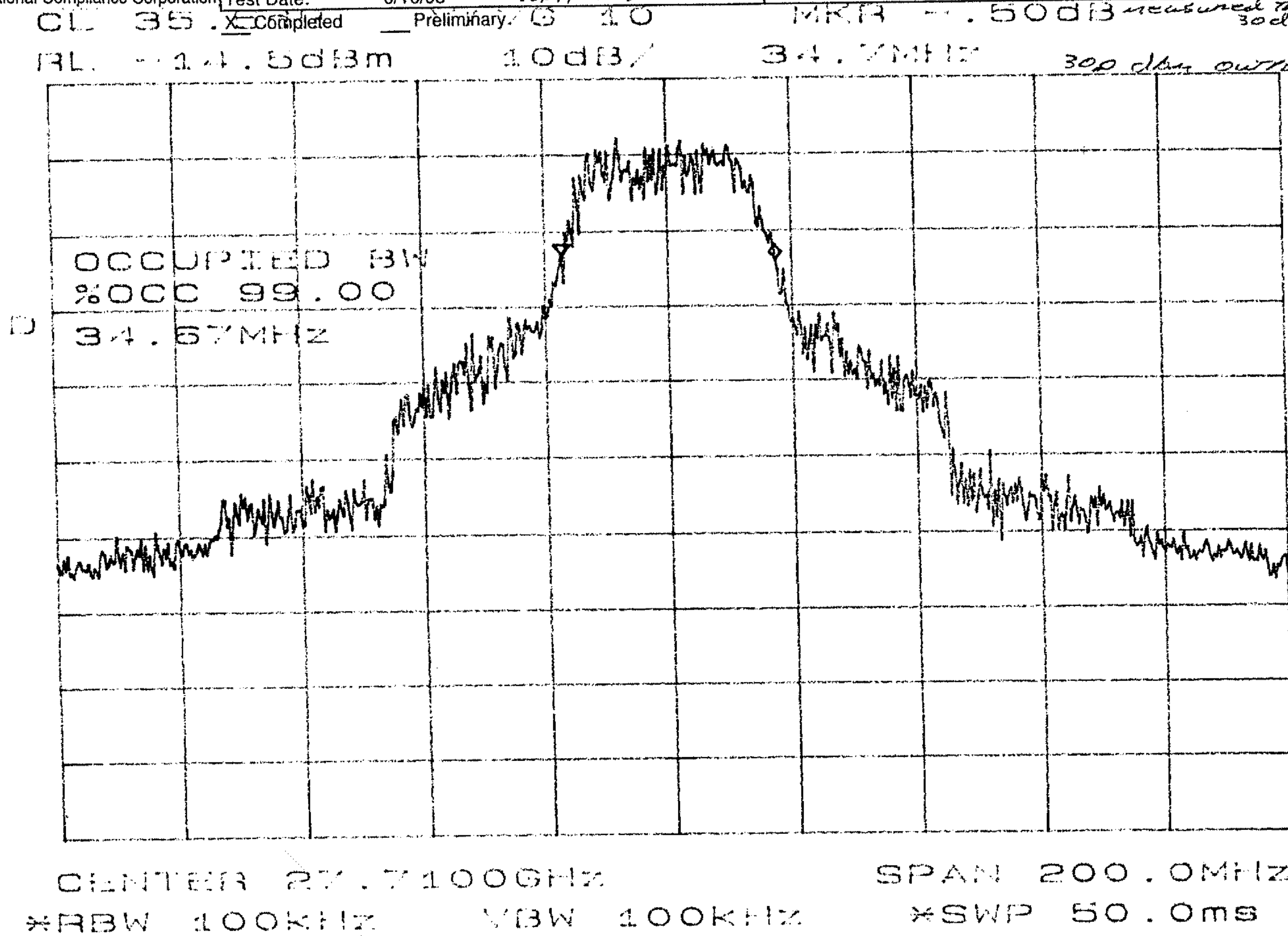
ICC. International Compliance Corporation

Client Name:	BOSCH TELECOM	Work Order #:	14OZ14
Model Number:	**NODE TRANSMITTER**	Plot Number:	4 QPSK (30 MHz BW)
Test Date:	6/16/98 Unit #5	Polarization:	N/A Cab #2

X Completed __ Preliminary

IF Infu -19.2 dBm

measured thru 30dB Attc. 300 dBm output

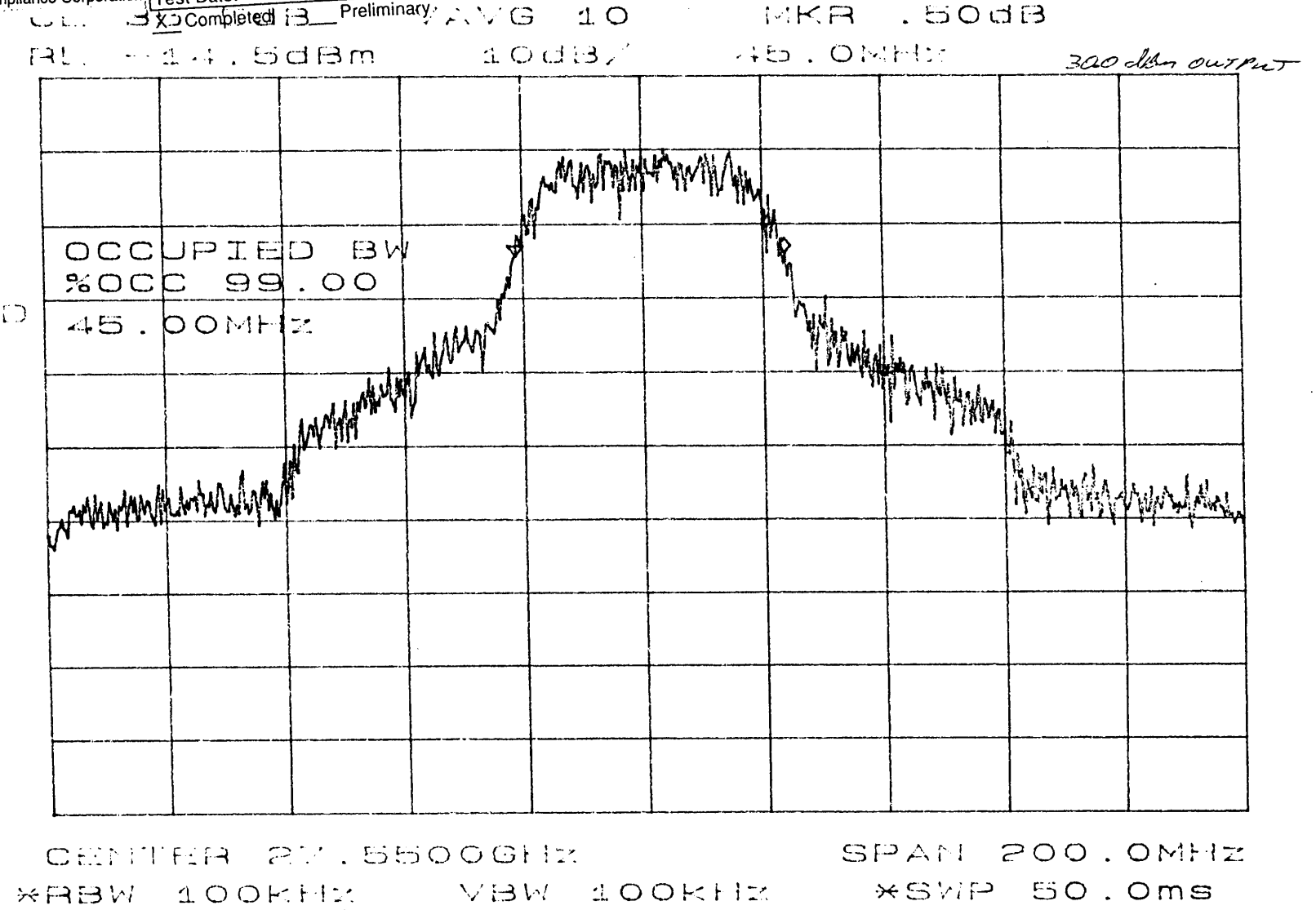


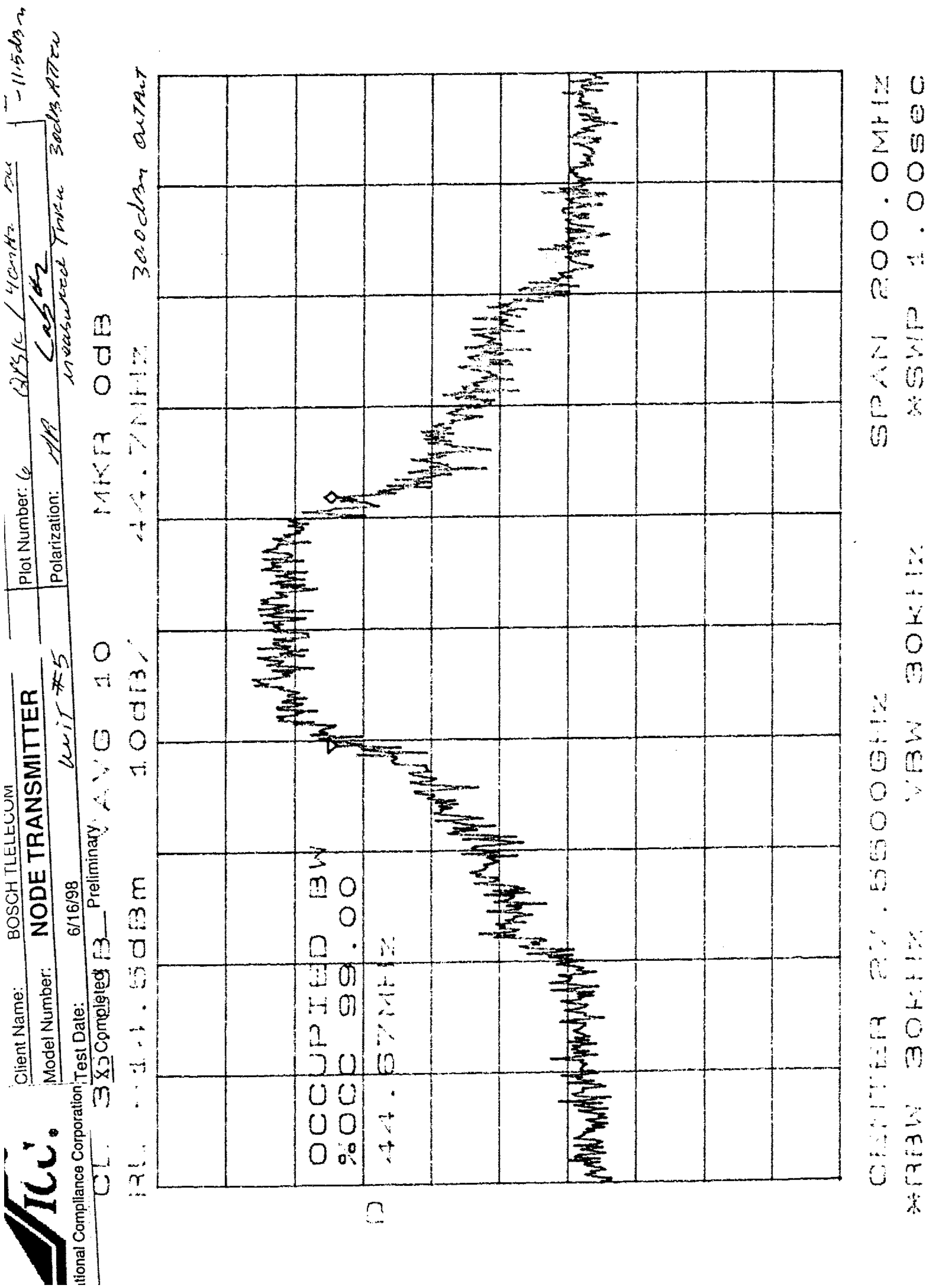
ICC.
National Compliance Corporation

Client Name:	BOSCH TLELECOM	Work Order #:	
Model Number:	NODE TRANSMITTER	Plot Number:	5
Test Date:	6/16/98 unit #5	Polarization:	N/A

QPSK/40mHz BW
Lab 2
measured thru 30db ATTEN
-11.5dBm

X Completed ___ Preliminary



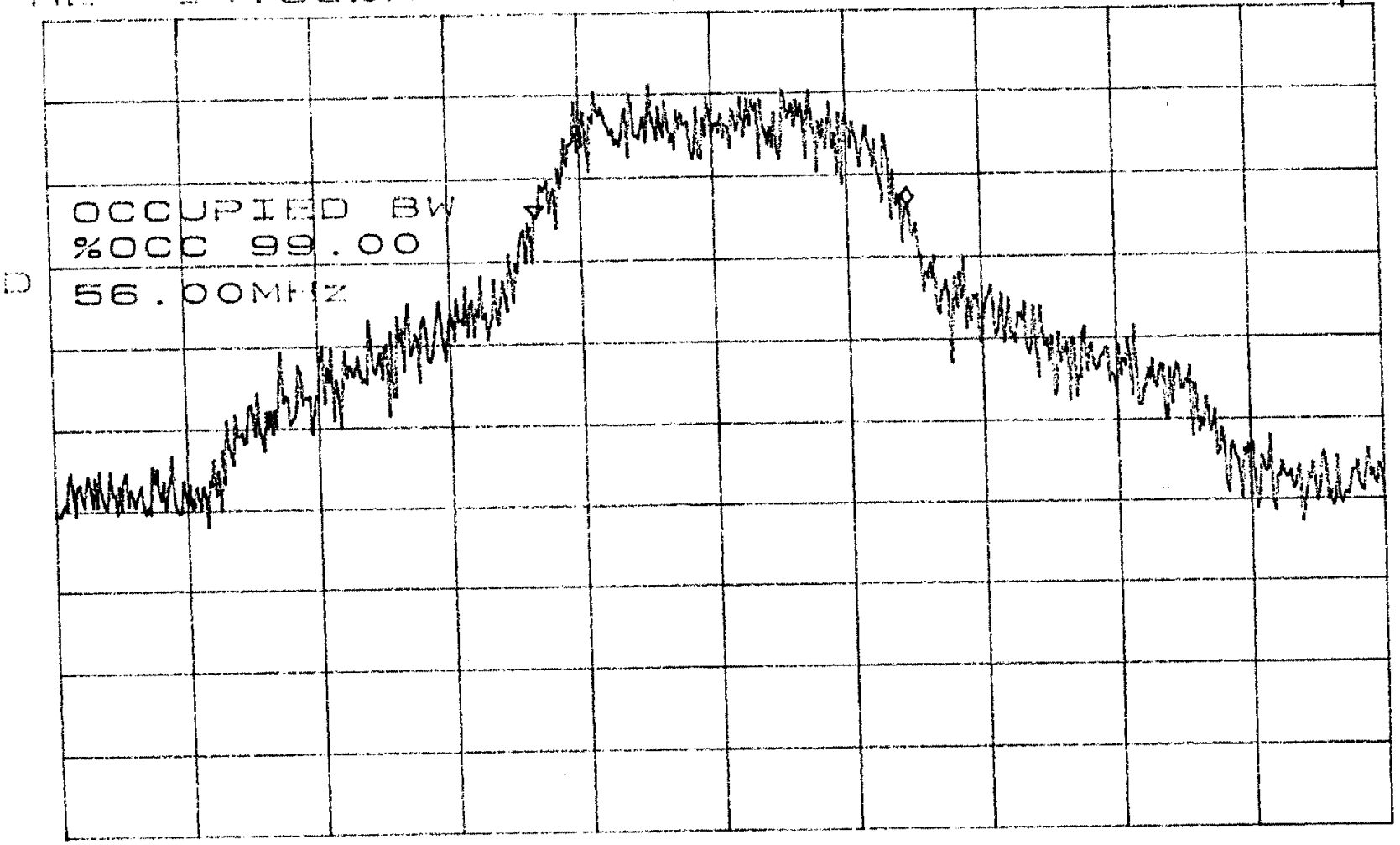

Client Name: BOSCH TELECOM
Model Number: NODE TRANSMITTER
Test Date: 6/16/98
Plot Number: 6
Polarization:
Preliminary
Completed
OCCUPIED BW
%OCC 99.00
MKR 0dB
CENTER
SPAN 200.0MHz
*SWP 1.00sec
*RBW 30kHz
VBW 30kHz

ICC.
International Compliance Corporation

Client Name:	BOSCH TELECOM
Model Number:	**NODE TRANSMITTER**
Test Date:	6/16/98
X Completed	___ Preliminary

Work Order #:	1-0218
Plot Number:	8 QPSK Scrambler BW
Polarization:	N/A Label measured thru 30dB Attenuation 30dB Output

+12.7dBm IF INPUT



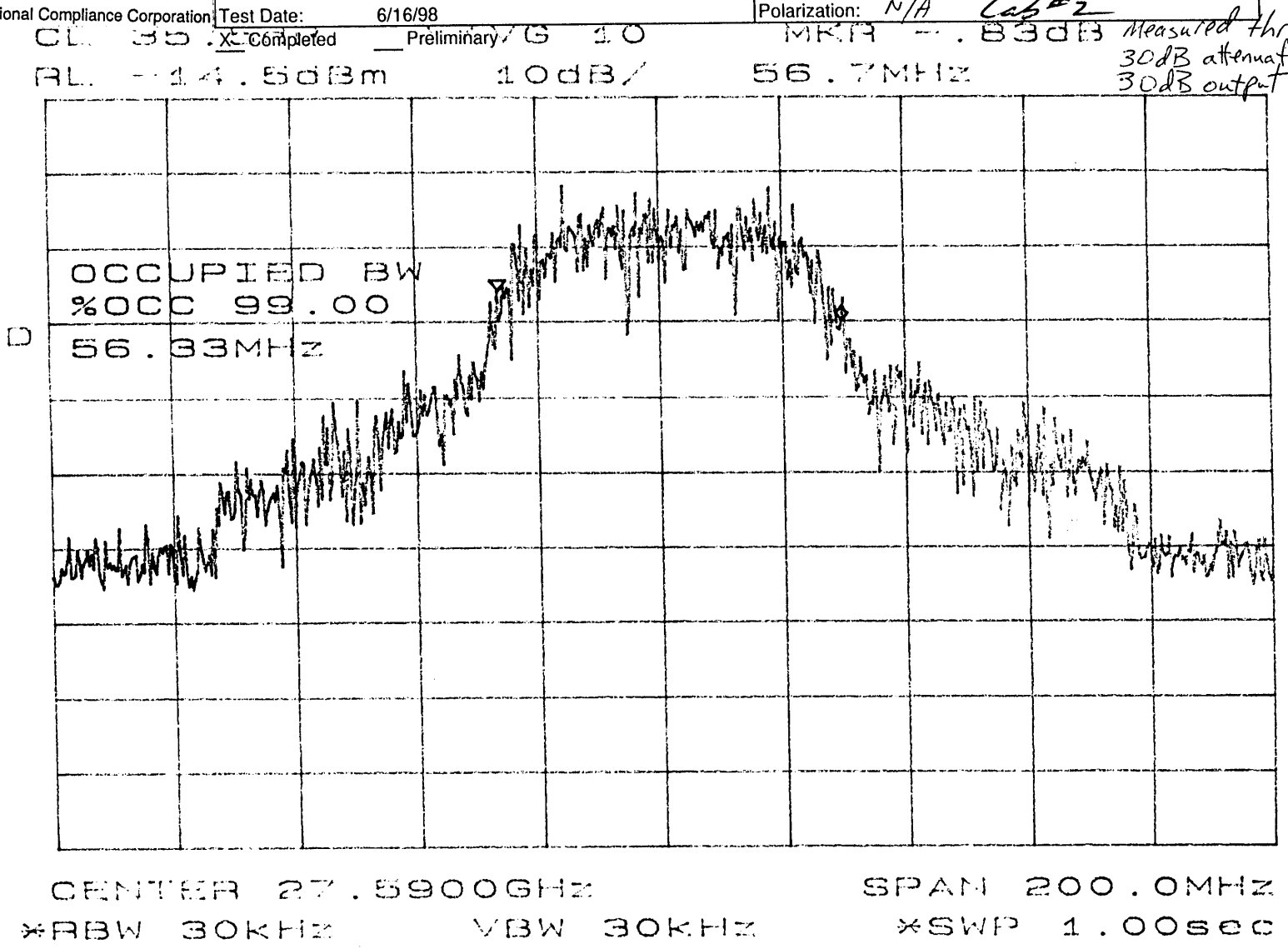
Client Name:	BOSCH TELECOM	Work Order #:	180218
Model Number:	**NODE TRANSMITTER**	Plot Number:	7 50mHz BW QPSK
Test Date:	6/16/98	Polarization:	N/A Lab #2

International Compliance Corporation

X Completed ___ Preliminary

-12.7dBm EIRP/MHz

Measured thru 30dB attenuation + 30dB output



FCC. National Compliance Corporation

Client Name:	BOSCH TLELECOM	Work Order #:	
Model Number:	**NODE TRANSMITTER**	Plot Number:	9 QPSK/30MHz BW
Test Date:	6/16/98 Unit #5	Polarization:	N/A Bosch Modem Test Set

X Completed __ Preliminary

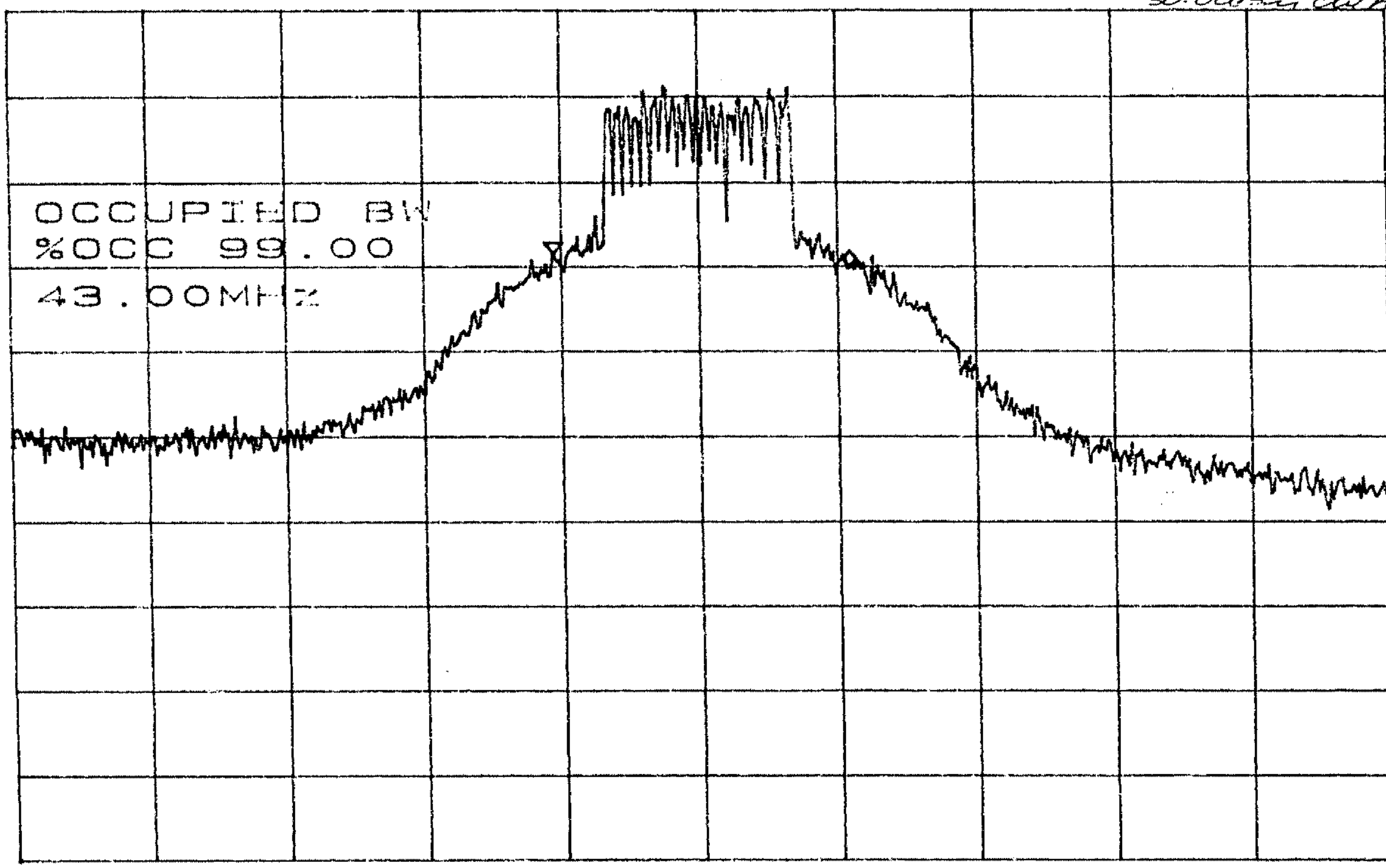
Lab #2 measured thru 30dB atten

IF Input -20.99

CL 35 ... AVG 10 MKR -.83dB

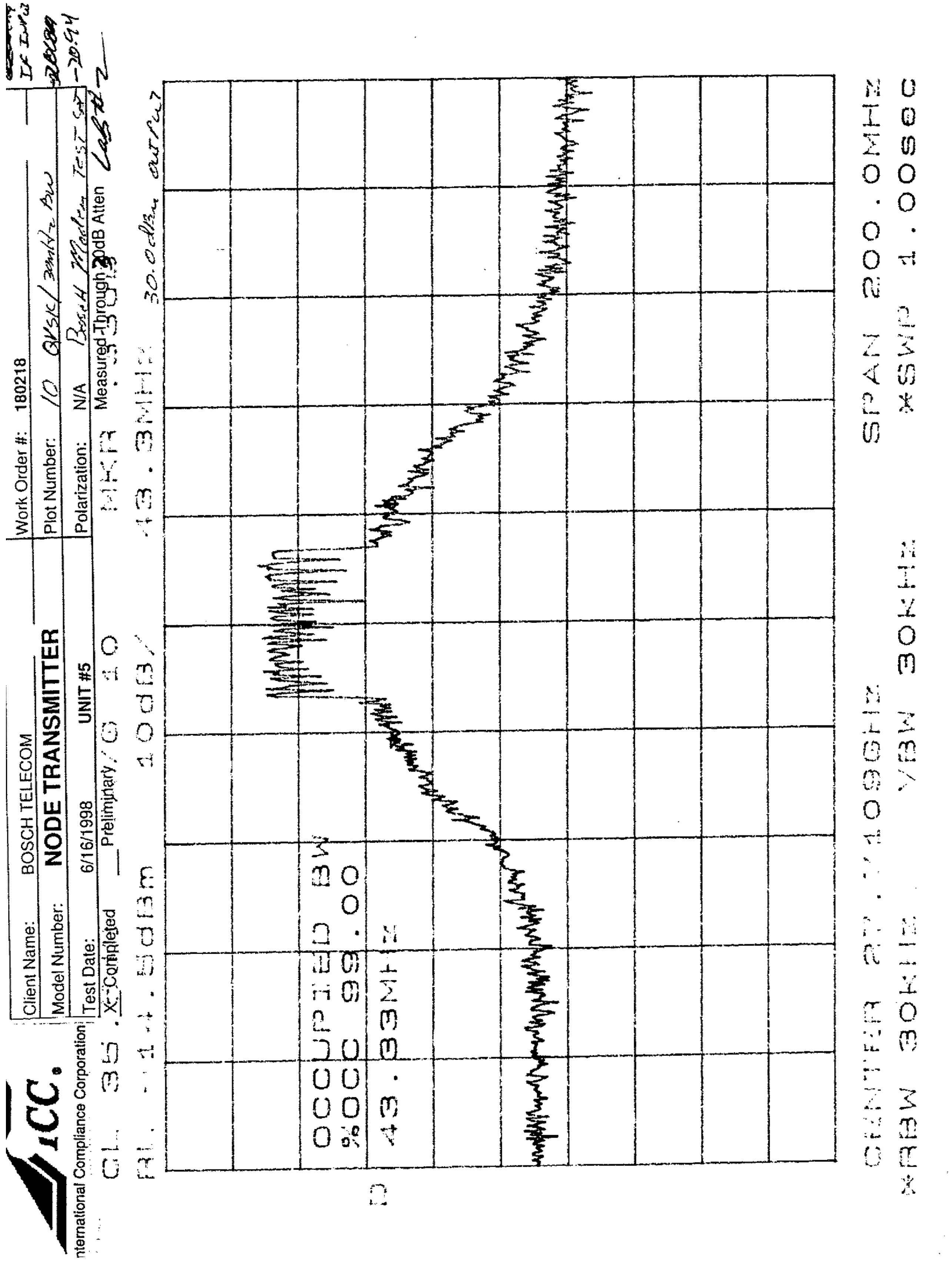
RL -14.5dBm 10dB/ 42.7MHz

30.0dBm Output



CENTER 27.7109GHz SPAN 200.0MHz

*RBW 100KHz VBW 100KHz *SWP 50.0ms



ICC
International Compliance Corporation
Client Name: BOSCH TELECOM
Model Number: NODE TRANSMITTER
Test Date: 6/16/1998
UNIT #5
Work Order #: 180218
Plot Number:
Polarization: N/A
Measured Through 20dB Atten
Completed
Preliminary
OCCUPIED BW
%OCC 99.00
43.33MHz
MKR
43.3MHz
SPAN 200.0MHz
VBW 30KHz
*SWP 1.00sec
*RBW 30KHz

Model Node Equipment Solid-State Transmitter (US)

Bosch Telecom, Inc.

ANTENNA TERMINAL
CONDUCTED EMISSIONS

Dallas/Ft. Worth Headquarters:
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ANTENNA TERMINAL CONDUCTED DATA

Complete X Preliminary ___ Page 1 of 1

Client: BOSCH TELECOM Test #: 218V3 W.O.#: 180218

EUT: NODE TRANSMITTER S/N: UNIT #5 Photo ID: 180218 V3

Technician: M SEVERSON & D LIGHT Specification: CFR 47 P 2.991 Lab: BOATS Date: 6/17/98

Equipment Used: 697,878

Configuration: TX 27.510 GHz U.S. TX 30.0dBm CW

Readings taken at antenna terminals

Bandwidth: 1MHZ Video Bandwidth: 100KHZ Antenna Distance n/m Detector:

Climatic Conditions:
Temperature: 20 C
Relative Humidity: 39 %
Atmospheric Pressure: 996 mbar

EUT Power:
___ 115 V.A.C. n/a 60 Hz
___ 208 V.A.C. n/a 50 Hz
___ 230 V.A.C.
X Other -48VDC n/a 1 Phase n/a 3 Phase

X Peak
___ Average

Freq. (GHz)	Meter Reading (dBm)	Antenna Factor (dB)	Cable Loss (dB)	4kHz RBW Correction Factor	Atten dB	Corrected Reading (dBm)	Lim -13dBm		Comments:
27.510	-.64	0	1.02	0	30.2	30.6	N/A		Fundamental
27.666	-54	0	1.02	0	30.2	-22.8	-13.0		
27.717	-48.5	0	1.02	0	30.2	-17.3	-13.0		
28.13	-60	0	1.02	0	30.2	-28.8	-13.0		
1.19	-72	0	1	0	30.2	-40.8	-13.0		Noise floor
13.09	-71	0	1	0	30.2	-39.8	-13.0		Noise floor
									Scanned
									30Mhz-40Ghz

DATACOMMON\FORMS\TESTDATASHEETS\MICRORE REV 030597

218v03

Dallas/Ft. Worth Headquarters:
802 N. Kealy
Lewisville, TX 75057
Tel: (972) 436-9600
Fax: (972) 436-2667

ANTENNA TERMINAL CONDUCTED DATA

Complete X Preliminary ___ Page 1 of 1

Client: BOSCH TELECOM Test #: 218V7 W.O.#: 180218

EUT: NODE TRANSMITTER S/N: UNIT #5 Photo ID: 180218 V7

Technician: M SEVERSON & D LIGHT Specification: CFR 47 P 2.991 Lab: 2 Date: 6/23/98

Equipment Used: 697,881,958,879

Configuration: TX 27.510 GHz U.S. TX 30.0dBm CW

Readings taken at antenna terminals

Bandwidth: 1MHZ Video Bandwidth: 100KHZ Antenna Distance n/a m Detector:

Climatic Conditions:
Temperature: 20 C
Relative Humidity: 39 %
Atmospheric Pressure: 996 mbar

EUT Power: ___ 115 V.A.C. n/a 60 Hz
___ 208 V.A.C. n/a 50 Hz
___ 230 V.A.C.
X Other -48VDC n/a 1 Phase n/a 3 Phase

X Peak
___ Average

Freq. (GHz)	Meter Reading (dBm)	Antenna Factor (dB)	Cable Loss (dB)	4kHz RBW Correction Factor (dB)	Atten dB	Corrected Reading (dBm)	Lim -13dBm		Comments:
53.1	-73	0	1	-24	28.2	-67.8	-13.0	Noise floor	2nd harm/LO
55.02	-74	0	1	-24	28.2	-68.8	-13.0	Noise floor	2nd harm/fund
79.650	-69	0	1	-24	28.2	-63.8	-13.0	Noise floor	3rd harm/LO
82.53	-70.5	0	1	-24	28.2	-65.3	-13.0	Noise floor	2nd harm/fund
									Scanned
									40-100 GHz

DATACOMMON\FORMS\TESTDATASHEETS\MICRORE REV 030597

218v07

Dallas/Ft. Worth Headquarters:
802 N. Kealy
Lewisville, TX 75057
Tel: (972) 436-9600
Fax: (972) 436-2667

ANTENNA TERMINAL CONDUCTED DATA

Complete X Preliminary ___ Page 1 of 1

Client: BOSCH TELECOM Test #: 218V4 W.O.#: 180218

EUT: NODE TRANSMITTER S/N: UNIT #5 Photo ID: 180218 V4

Technician: M SEVERSON & D LIGHT Specification: CFR 47 P 2.991 Lab: BOATS Date: 6/17/98

Equipment Used: 697,878

Configuration: TX 27.710 GHz QPSK 30 MHz BW TX 30.0dBm

Readings taken at antenna terminals

Bandwidth: 1MHZ Video Bandwidth: 100KHZ Antenna Distance 3 m Detector:

Climatic Conditions:
Temperature: 20 C
Relative Humidity: 39 %
Atmospheric Pressure: 996 mbar

EUT Power: ___ 115 V.A.C. n/a 60 Hz
___ 208 V.A.C. n/a 50 Hz
___ 230 V.A.C.
X Other -48VDC n/a 1 Phase n/a 3 Phase

X Peak
___ Average

Freq. (GHz)	Meter Reading (dBm)	Antenna Factor (dB)	Cable Loss (dB)	4kHz RBW Correction Factor	Atten dB	Corrected Reading (dBm)	Lim -13dBm		Comments:
27.710	-9.53	0	1.02	-24	30.2	-2.3	N/A		Fundamental
1.190	-72.5	0	1	-24	30.2	-65.3	-13.0		Noise floor
13.09	-70	0	1	-24	30.2	-62.8	-13.0		Noise floor
									Scanned
									30Mhz-40Ghz
									Mhz adj

DATACOMMON\FORMS\TESTDATASHEETS\MICRORE REV 030597

218v04

Dallas/Ft. Worth Headquarters:
802 N. Kealy
Lewisville, TX 75057
Tel: (972) 436-9600
Fax: (972) 436-2667

ANTENNA TERMINAL CONDUCTED DATA

Complete X Preliminary ___ Page 1 of 1

Client: BOSCH TELECOM Test #: 218V9 W.O.#: 180218

EUT: NODE TRANSMITTER S/N: UNIT #5 Photo ID: 180218 V9

Technician: M SEVERSON & D LIGHT Specification: CFR 47 P 2.991 Lab: 2 Date: 6/23/98

Equipment Used: 697,881,958,879

Configuration: TX 27.710 GHz QPSK 30 MHz BW TX 30.0dBm

Readings taken at antenna terminals

Bandwidth: 1MHZ Video Bandwidth: 100KHZ Antenna Distance nm Detector:

Climatic Conditions:
Temperature: 20 C
Relative Humidity: 39 %
Atmospheric Pressure: 996 mbar

EUT Power:
___ 115 V.A.C. n/a 60 Hz
___ 208 V.A.C. n/a 50 Hz
___ 230 V.A.C.
X Other -48VDC n/a 1 Phase n/a 3 Phase

X Peak
___ Average

Freq. (GHz)	Meter Reading (dBm)	Antenna Factor (dB)	Cable Loss (dB)	4kHz RBW Correction Factor (dB)	Atten dB	Corrected Reading (dBm)	Lim -13dBm		Comments:
52.08	-74	0	1	0	28.2	-44.8	-13.0	Noise floor	2nd harm/LO
55.42	-73	0	1	0	28.2	-43.8	-13.0	Noise floor	2nd harm/fund
78.12	-69	0	1	0	28.2	-39.8	-13.0	Noise floor	3rd harm/LO
83.13	-70	0	1	0	28.2	-40.8	-13.0	Noise floor	2nd harm/fund
									Scanned
									40-100 GHz

DATACOMMON\FORMS\TESTDATASHEETS\MICRORE REV 030597

218v09

Dallas/Ft. Worth Headquarters:
802 N. Kealy
Lewisville, TX 75057
Tel: (972) 436-9600
Fax: (972) 436-2667

ANTENNA TERMINAL CONDUCTED DATA

Complete X Preliminary ___ Page 1 of 1

Client: BOSCH TELECOM Test #: 218V5 W.O.#: 180218

EUT: NODE TRANSMITTER S/N: UNIT #5 Photo ID: 180218 V5

Technician: M SEVERSON & D LIGHT Specification: CFR 47 P 2.991 Lab: BOATS Date: 6/17/98

Equipment Used: 697,878

Configuration: TX 27.550 GHz QPSK 40 MHz BW TX 30.0dBm

Readings taken at antenna terminals

Bandwidth: 1MHZ Video Bandwidth: 100KHZ Antenna Distance n/m Detector:

Climatic Conditions:
Temperature: 20 C
Relative Humidity: 39 %
Atmospheric Pressure: 996 mbar

EUT Power: ___ 115 V.A.C. n/a 60 Hz
___ 208 V.A.C. n/a 50 Hz
___ 230 V.A.C.
X Other -48VDC n/a 1 Phase n/a 3 Phase

X Peak
___ Average

Freq. (GHz)	Meter Reading (dBm)	Antenna Factor (dB)	Cable Loss (dB)	4kHz RBW Correction Factor	Atten dB	Corrected Reading (dBm)	Lim -13dBm		Comments:
27.550	-13	0	1.02	0	30.2	18.2	N/A		Fundamental
1.19	-72	0	1	0	30.2	-40.8	-13.0		Noise floor
13.09	-70	0	1	0	30.2	-38.8	-13.0		Noise floor
									Scanned
									30Mhz-40Ghz

DATACOMMON\FORMS\TESTDATASHEETS\MICRORE REV 030597

218v05

Dallas/Ft. Worth Headquarters:
802 N. Kealy
Lewisville, TX 75057
Tel: (972) 436-9600
Fax: (972) 436-2667

ANTENNA TERMINAL CONDUCTED DATA

Complete X Preliminary ___ Page 1 of 1

Client: BOSCH TELECOM Test #: 218V10 W.O.#: 180218

EUT: NODE TRANSMITTER S/N: UNIT #5 Photo ID: 180218 V10

Technician: M SEVERSON & D LIGHT Specification: CFR 47 P 2.991 Lab: 2 Date: 6/23/98

Equipment Used: 697,881,958,879

Configuration: TX 27.550 GHz QPSK 40 MHz BW TX 30.0dBm

Readings taken at antenna terminals

Bandwidth: 1MHZ Video Bandwidth: 100KHZ Antenna Distance n/a m Detector:

Climatic Conditions:
Temperature: 20 C
Relative Humidity: 39 %
Atmospheric Pressure: 996 mbar

EUT Power: ___ 115 V.A.C. n/a 60 Hz X Peak
___ 208 V.A.C. n/a 50 Hz ___ Average
___ 230 V.A.C.
X Other -48VDC n/a 1 Phase n/a 3 Phase

Freq. (GHz)	Meter Reading (dBm)	Antenna Factor (dB)	Cable Loss (dB)	4kHz RBW Correction Factor (dB)	Atten dB	Corrected Reading (dBm)	Lim -13dBm		Comments:
52.08	-74	0	1	-24	28.2	-68.8	-13.0	Noise floor	2nd harm/LO
55.10	-73	0	1	-24	28.2	-67.8	-13.0	Noise floor	2nd harm/fund
78.12	-70	0	1	-24	28.2	-64.8	-13.0	Noise floor	3rd harm/LO
82.65	-70	0	1	-24	28.2	-64.8	-13.0	Noise floor	2nd harm/fund
									scanned
									40-100 GHz

DATACOMMON\FORMS\TESTDATASHEETS\MICRORE REV 030597

218v10

Dallas/Ft. Worth Headquarters:
802 N. Kealy
Lewisville, TX 75057
Tel: (972) 436-9600
Fax: (972) 436-2667

ANTENNA TERMINAL CONDUCTED DATA

Complete X Preliminary ___ Page 1 of 1

Client: BOSCH TELECOM Test #: 218V6 W.O.#: 180218

EUT: NODE TRANSMITTER S/N: UNIT #5 Photo ID:180218 V6

Technician: M SEVERSON & D LIGHT Specification: CFR 47 P 2.991 Lab: BOATS Date: 6/17/98

Equipment Used: 697,878

Configuration: TX 27.590 GHz QPSK 50 MHz BW TX 30.0dBm

Readings taken at antenna terminals

Bandwidth: 1MHZ Video Bandwidth: 100KHZ Antenna Distance n/am Detector:

Climatic Conditions:
Temperature: 20 C
Relative Humidity: 39 %
Atmospheric Pressure: 996 mbar

EUT Power: ___ 115 V.A.C. n/a 60 Hz
___ 208 V.A.C. n/a 50 Hz
___ 230 V.A.C.
X Other -48VDC n/a 1 Phase n/a 3 Phase

X Peak
___ Average

Freq. (GHz)	Meter Reading (dBm)	Antenna Factor (dB)	Cable Loss (dB)	4kHz RBW Correction Factor (dB)	Atten dB	Corrected Reading (dBm)	Lim -13dBm		Comments:
27.590	-13	0	1.02	0	30.2	18.2	N/A		Fundamental
1.19	-72	0	1	0	30.2	-40.8	-13.0		Noise Floor
13.09	-72.5	0	1	0	30.2	-41.3	-13.0		Noise Floor
									Scanned
									30Mhz-40Ghz

DATACOMMON\FORMS\TESTDATASHEETS\MICRORE REV 030597

218v06

Dallas/Ft. Worth Headquarters:
802 N. Kealy
Lewisville, TX 75057
Tel: (972) 436-9600
Fax: (972) 436-2667

ANTENNA TERMINAL CONDUCTED DATA

Complete X Preliminary ___ Page 1 of 1

Client: BOSCH TELECOM Test #: 218V11 W.O.#: 180218

EUT: NODE TRANSMITTER S/N: UNIT #5 Photo ID: 180218 V11

Technician: M SEVERSON & D LIGHT Specification: CFR 47 P 2.991 Lab: 2 Date: 6/23/98

Equipment Used: 697,881,958,879

Configuration: TX 27.590 GHz QPSK 50 MHz BW TX 30.0dBm

Readings taken at antenna terminals

Bandwidth: 1MHZ Video Bandwidth: 100KHZ Antenna Distance n/a m Detector:

Climatic Conditions:
Temperature: 20 C
Relative Humidity: 39 %
Atmospheric Pressure: 996 mbar

EUT Power: ___ 115 V.A.C. n/a 60 Hz
___ 208 V.A.C. n/a 50 Hz
___ 230 V.A.C.
X Other -48VDC n/a 1 Phase n/a 3 Phase

X Peak
___ Average

Freq. (GHz)	Meter Reading (dBm)	Antenna Factor (dB)	Cable Loss (dB)	4kHz RBW Correction Factor (dB)	Atten dB	Corrected Reading (dBm)	Lim -13dBm		Comments:
52.8	-74	0	1	0	28.2	-44.8	-13.0	Noise floor	2nd harm/LO
55.18	-73	0	1	0	28.2	-43.8	-13.0	Noise floor	2nd harm/fund
79.20	-70	0	1	0	28.2	-40.8	-13.0	Noise floor	3rd harm/LO
82.77	-70.5	0	1	0	28.2	-41.3	-13.0	Noise floor	2nd harm/fund
									scanned
									40-100 GHz

DATACOMMON\FORMS\TESTDATASHEETS\MICRORE REV 030597

218v11

Dallas/Ft. Worth Headquarters:
802 N. Kealy
Lewisville, TX 75057
Tel: (972) 436-9600
Fax: (972) 436-2667

ANTENNA TERMINAL CONDUCTED DATA

Complete X Preliminary ___ Page 1 of 1

Client: BOSCH TELECOM Test #: 218V1 W.O.#: 180218

EUT: NODE TRANSMITTER S/N: UNIT #5 Photo 180218 V1

Technician: MARK SEVERSON Specification: CFR 47 P 2.991 Lab: BOATS Date: 6/17/98

Equipment Used: 697,878 agn GHz agn MHz

Configuration: TX 30.0dBm 27.710926GHz QPSK/30MHz BW Bosch Modem Test Set
Readings taken at antenna terminals

Bandwidth: 1MHZ Video Bandwidth: 100KHZ Antenna Distance N/A m Detector:

Climatic Conditions:
Temperature: 20 C
Relative Humidity: 39 %
Atmospheric Pressure: 996 mbar

EUT Power: ___ 115 V.A.C. n/a 60 Hz X Peak
___ 208 V.A.C. n/a 50 Hz ___ Average
___ 230 V.A.C.
X Other -48VDC n/a 1 Phase n/a 3 Phase

Freq. (GHz)	Meter Reading (dBm)	Antenna Factor (dB)	Cable Loss (dB)	4kHz RBW Correction Factor (dB)	Atten dB	Corrected Reading (dBm)	Lim -13dBm		Comments:
27.710926	-11.0	0	1.02	-24	30.2	-3.8	N/A	agn	Fundamental
27.400	-50.0	0	1.02	-24	30.2	-42.8	~~-45.0~~ -13.0		
1.19	-72.5	0	1	-24	30.2	-65.3	-13.0		Noise floor
13.09	-70	0	1	-24	30.2	-62.8	-13.0		Noise floor
									Scanned
									30MHz-40GHz

DATACOMMON\FORMS\TESTDATASHEETS\MICRORE REV 030597

218v01

Dallas/Ft. Worth Headquarters:
802 N. Kealy
Lewisville, TX 75057
Tel: (972) 436-9600
Fax: (972) 436-2667

ANTENNA TERMINAL CONDUCTED DATA

Complete X Preliminary ___ Page 1 of 1

Client: BOSCH TELECOM Test #: 218V08 W.O.#: 180218

EUT: NODE TRANSMITTER S/N: UNIT #5 Photo ID: 180218 V08

Technician: MARK SEVERSON Specification: CFR 47 P 2.991 Lab: 2 Date: 6/23/98

Equipment Used: 697,881,958,879 MHz agr

Configuration: TX 30.0dBm 27.710926GHz QPSK/30Mhx BW Bosch Modem Test Set

Readings taken at antenna terminals

Bandwidth: 1MHZ Video Bandwidth: 100KHZ Antenna Distance 1m Detector:

Climatic Conditions:
Temperature: 20 C
Relative Humidity: 39 %
Atmospheric Pressure: 996 mbar

EUT Power:
___ 115 V.A.C. n/a 60 Hz
___ 208 V.A.C. n/a 50 Hz
___ 230 V.A.C.
X Other -48VDC n/a 1 Phase n/a 3 Phase

X Peak
___ Average

Freq. (GHz)	Meter Reading (dBm)	Antenna Factor (dB)	Cable Loss (dB)	4kHz RBW Correction Factor (dB)	Atten dB	Corrected Reading (dBm)	Lim -13dBm		Comments:
52.08	-73	0	1	-24	28.2	-67.8	-13.0	Noise floor	2nd harm/LO
55.42185	-72	0	1	-24	28.2	-66.8	-13.0	Noise floor	2nd harm/fund
78.12	-71	0	1	-24	28.2	-65.8	-13.0	Noise floor	3rd harm/LO
82.13278	-70	0	1	-24	28.2	-64.8	-13.0	Noise floor	2nd harm/fund
									Scanned
									40-100 GHz

DATACOMMON\FORMS\TESTDATASHEETS\MICRORE REV 030597

218V08.xls

Model Node Equipment Solid-State Transmitter (US)

Bosch Telecom, Inc.

SPURIOUS EMISSIONS
(FIELD STRENGTH)

RADIATED EMISSIONS DATA
ELECTRIC FIELD

CLIENT NAME:	BOSCH TELECOM					W.O.#: 180218	DATE:	6/22/98	
EUT MODEL:	NODE TRANSMITTER				SERIAL #:	UNIT #5	TIME:	0818	
EUT CONFIG.:	TX 30.0dBm 27.510GHZ CW U.S. FREQUENCY						TECH.:	D LIGHT & M SEVERSON	
TEST SPECIFICATION:	2.993 (3m)						TEST NUMBER:	RE-3	
ROD ANT. #:		CABLE #:	2B	DETECT. TYPE:	PEAK		LOCATION:	BOATS	
BICON ANT. #:	230	PREAMP. #:	401	RES. BW (kHz):	100		DISTANCE (m):	3M	
LOG ANT. #:	227	LIMITER#	181	VIDEO BW (kHz):	100		EUT VOLTAGE:	-48VDC	
HORN ANT. #:		ATTEN.#:	N/A	TEMP. (deg. C):	27		EUT FREQ. (Hz):	N/A	
DIPOLE ANT #:		DETECTOR#:	697	HUMIDITY (%):	46		PHOTO ID:	180218 RE-3 RAD. EM.	

Emission Frequency (MHz)	Ant. Pol. (H/V)	Det. Atten. (dB)	Meter Reading (dBuV)	Antenna Factor (dB)	Path Loss (dB)	RF Gain (dB)	Corrected Reading (dBuV/m)	Spec. Limit (dBuV/m)	CR/SL Delta (dB)	Pass Fail Marginal	Notes
32.835	V	0.0	45.3	11.59	1.42	24.6	33.71	84.6	-50.89	Pass	
49.985	V	0.0	34.3	10.336	1.59	24.6	21.576	84.6	-63.024	Pass	AMBIENT
175.252	V	0.0	45.7	13.75	2.82	24.6	37.67	84.6	-46.93	Pass	NOISE FLOOR
32.835	H	0.0	34.0	11.59	1.42	24.6	22.41	84.6	-62.19	Pass	
116.200	H	0.0	42.5	11	2.54	24.6	31.44	84.6	-53.16	Pass	NOISE FLOOR
220.620	H	0.0	37.0	15.6	3.69	24.6	31.69	84.6	-52.91	Pass	NOISE FLOOR
400.000	V	0.0	30.0	16.6	5.51	24.9	27.21	84.6	-57.39	Pass	NOISE FLOOR
650.000	V	0.0	30.0	21.4	7.29	25.1	33.59	84.6	-51.01	Pass	NOISE FLOOR
960.000	V	0.0	39.6	23.26	9.17	24.9	47.13	84.6	-37.47	Pass	
400.000	H	0.0	32.0	16.6	5.51	24.9	29.21	84.6	-55.39	Pass	NOISE FLOOR
650.000	H	0.0	32.0	21.4	7.29	25.1	35.59	84.6	-49.01	Pass	NOISE FLOOR
960.000	H	0.0	31.0	23.26	9.17	24.9	38.53	84.6	-46.07	Pass	NOISE FLOOR
											Scanned 30-1000 MHz

Compliance Data

INTERNATIONAL COMPLIANCE CORPORATION

RADIATED EMISSIONS DATA
ELECTRIC FIELD

CLIENT NAME:	BOSCH TELECOM					W.O.#: 180218	DATE:	6/22/98	
EUT MODEL:	NODE TRANSMITTER ~~GHz~~ MHz adjr				SERIAL #: UNIT #5		TIME:	9:30	
EUT CONFIG.:	TX 30.0dBm 27.710926 ~~GHZ~~ QPSK/30 ~~MHZ~~ MHz BW						TECH.:	D LIGHT & M SEVERSON	
TEST SPECIFICATION:	2.993 (3m)						TEST NUMBER:	RE-4	
ROD ANT. #:		CABLE #:	2B	DETECT. TYPE:	PEAK		LOCATION:	BOATS	
BICON ANT. #:	230	PREAMP. #:	401	RES. BW (kHz):	100		DISTANCE (m):	3M	
LOG ANT. #:	227	LIMITER#	181	VIDEO BW (kHz):	100		EUT VOLTAGE:	-48VDC	
HORN ANT. #:		ATTEN.#:	N/A	TEMP. (deg. C):	30		EUT FREQ. (Hz):	N/A	
DIPOLE ANT #:		DETECTOR#:	697	HUMIDITY (%):	46		PHOTO ID:	180218 RE-4 RAD. EM.	

Emission Frequency (MHz)	Ant. Pol. (H/V)	Det. Atten. (dB)	Meter Reading (dBuV)	Antenna Factor (dB)	Path Loss (dB)	RF Gain (dB)	Corrected Reading (dBuV/m)	Spec. Limit (dBuV/m)	CR/SL Delta (dB)	Pass Fail Marginal	Notes
32.835	V	0.0	44.0	11.59	1.42	24.6	32.41	84.6	-52.19	Pass	
81.763	V	0.0	60.2	8.43	2.28	24.6	46.28	84.6	-38.32	Pass	AMBIENT
275.000	V	0.0	30.0	17.365	4.19	24.6	26.955	84.6	-57.645	Pass	NOISE FLOOR
32.835	H	0.0	39.0	11.59	1.42	24.6	27.41	84.6	-57.19	Pass	
150.000	H	0.0	30.0	13.52	2.82	24.6	21.74	84.6	-62.86	Pass	NOISE FLOOR
275.000	H	0.0	30.0	17.365	4.19	24.6	26.955	84.6	-57.645	Pass	NOISE FLOOR
400.000	V	0.0	31.0	16.6	5.51	24.9	28.21	84.6	-56.39	Pass	NOISE FLOOR
650.000	V	0.0	31.0	21.4	7.29	25.1	34.59	84.6	-50.01	Pass	NOISE FLOOR
900.000	V	0.0	31.0	23.5	9.17	24.9	38.77	84.6	-45.83	Pass	NOISE FLOOR
400.000	H	0.0	30.0	16.6	5.51	24.9	27.21	84.6	-57.39	Pass	NOISE FLOOR
650.000	H	0.0	31.0	21.4	7.29	25.1	34.59	84.6	-50.01	Pass	NOISE FLOOR
30.000	H	0.0	30.0	12.25	1.42	24.6	19.07	84.6	-65.53	Pass	NOISE FLOOR
											Scanned 30-1000 MHz
											All ambients were verified
											by cycling power to EUT

Compliance Data

RADIATED EMISSIONS DATA
ELECTRIC FIELD

CLIENT NAME:	BOSCH TELECOM						W.O.#: 180218		DATE:	6/22/98	
EUT MODEL:	NODE TRANSMITTER					SERIAL #: UNIT #5			TIME:	10:30	
EUT CONFIG.:	TX 30.0dBm 27.550 ~~GHZ~~ MHz QPSK/40 ~~MHZ~~ MHz BW								TECH.:	D LIGHT & M SEVERSON	
TEST SPECIFICATION:	2.993 (3m)								TEST NUMBER:	RE-5	
ROD ANT. #:		CABLE #:	2B	DETECT. TYPE:	PEAK				LOCATION:	BOATS	
BICON ANT. #:	230	PREAMP. #:	401	RES. BW (kHz):	100				DISTANCE (m):	3M	
LOG ANT. #:	227	LIMITER#	181	VIDEO BW (kHz):	100				EUT VOLTAGE:	-48VDC	
HORN ANT. #:		ATTEN.#:	N/A	TEMP. (deg. C):	30				EUT FREQ. (Hz):	N/A	
DIPOLE ANT #:		DETECTOR#:	697	HUMIDITY (%):	46				PHOTO ID:	180218 RE-5 RAD. EM.	

Emission Frequency (MHz)	Ant. Pol. (H/V)	Det. Atten. (dB)	Meter Reading (dBuV)	Antenna Factor (dB)	Path Loss (dB)	RF Gain (dB)	Corrected Reading (dBuV/m)	Spec. Limit (dBuV/m)	CR/SL Delta (dB)	Pass Fail Marginal	Notes
32.835	V	0.0	43.0	11.59	1.42	24.6	31.41	84.6	-53.19	Pass	
150.000	V	0.0	32.0	13.52	2.82	24.6	23.74	84.6	-60.86	Pass	NOISE FLOOR
250.000	V	0.0	30.0	17.61	4.19	24.6	27.2	84.6	-57.4	Pass	NOISE FLOOR
32.835	H	0.0	35.0	11.59	1.42	24.6	23.41	84.6	-61.19	Pass	
150.000	H	0.0	30.0	13.52	2.82	24.6	21.74	84.6	-62.86	Pass	NOISE FLOOR
250.000	H	0.0	31.0	17.61	4.19	24.6	28.2	84.6	-56.4	Pass	NOISE FLOOR
421.250	V	0.0	35.0	16.76	5.51	24.9	32.37	84.6	-52.23	Pass	
650.000	V	0.0	30.0	21.4	7.29	25.1	33.59	84.6	-51.01	Pass	NOISE FLOOR
900.000	V	0.0	30.0	23.5	9.17	24.9	37.77	84.6	-46.83	Pass	NOISE FLOOR
400.000	H	0.0	30.0	16.6	5.51	24.9	27.21	84.6	-57.39	Pass	NOISE FLOOR
650.000	H	0.0	30.0	21.4	7.29	25.1	33.59	84.6	-51.01	Pass	NOISE FLOOR
900.000	H	0.0	30.0	23.5	9.17	24.9	37.77	84.6	-46.83	Pass	NOISE FLOOR
											Scanned 30-1000 MHz
											All ambients were verified
											by cycling power to EUT

Compliance Data

RADIATED EMISSIONS DATA
ELECTRIC FIELD

CLIENT NAME:	BOSCH TELECOM			W.O.#: 180218		DATE:	6/22/98		
EUT MODEL:	NODE TRANSMITTER			SERIAL #: UNIT #5		TIME:	10:30		
EUT CONFIG.:	TX 30.0dBm 27.590 ~~GHZ~~ MHz QPSK/50 ~~MHZ~~ MHz BW					TECH.:	D LIGHT & M SEVERSON		
TEST SPECIFICATION:	2.993 (3m) GHz adj			MHz adj		TEST NUMBER:	RE-6		
ROD ANT. #:		CABLE #:	2B	DETECT. TYPE:	PEAK	LOCATION:	BOATS		
BICON ANT. #:	230	PREAMP. #:	401	RES. BW (kHz):	100	DISTANCE (m):	3M		
LOG ANT. #:	227	LIMITER#	181	VIDEO BW (kHz):	100	EUT VOLTAGE:	-48VDC		
HORN ANT. #:		ATTEN.#:	N/A	TEMP. (deg. C):	30	EUT FREQ. (Hz):	N/A		
DIPOLE ANT #:		DETECTOR#:	697	HUMIDITY (%):	46	PHOTO ID:	180218 RE-6 RAD. EM.		

Emission Frequency (MHz)	Ant. Pol. (H/V)	Det. Atten. (dB)	Meter Reading (dBuV)	Antenna Factor (dB)	Path Loss (dB)	RF Gain (dB)	Corrected Reading (dBuV/m)	Spec. Limit (dBuV/m)	CR/SL Delta (dB)	Pass Fail Marginal	Notes
32.835	V	0.0	43.0	11.59	1.42	24.6	31.41	84.6	-53.19	Pass	
150.000	V	0.0	31.0	13.52	2.82	24.6	22.74	84.6	-61.86	Pass	NOISE FLOOR
250.000	V	0.0	30.0	17.61	4.19	24.6	27.2	84.6	-57.4	Pass	NOISE FLOOR
32.835	H	0.0	36.0	11.59	1.42	24.6	24.41	84.6	-60.19	Pass	
150.000	H	0.0	30.0	13.52	2.82	24.6	21.74	84.6	-62.86	Pass	NOISE FLOOR
250.000	H	0.0	30.0	17.61	4.19	24.6	27.2	84.6	-57.4	Pass	NOISE FLOOR
421.250	V	0.0	36.0	16.76	5.51	24.9	33.37	84.6	-51.23	Pass	
650.000	V	0.0	30.0	21.4	7.29	25.1	33.59	84.6	-51.01	Pass	NOISE FLOOR
900.000	V	0.0	30.0	23.5	9.17	24.9	37.77	84.6	-46.83	Pass	NOISE FLOOR
400.000	H	0.0	31.0	16.6	5.51	24.9	28.21	84.6	-56.39	Pass	NOISE FLOOR
650.000	H	0.0	30.0	21.4	7.29	25.1	33.59	84.6	-51.01	Pass	NOISE FLOOR
900.000	H	0.0	30.0	23.5	9.17	24.9	37.77	84.6	-46.83	Pass	NOISE FLOOR
											Scanned 30-1000 MHz

Compliance Data

RADIATED EMISSIONS DATA
ELECTRIC FIELD

CLIENT NAME:	BOSCH TELECOM			W.O.#: 180218	DATE:	6/19/98
EUT MODEL:	NODE TRANSMITTER GHz ~~MHz~~		SERIAL #: UNIT #5		TIME:	1545
EUT CONFIG.:	TX 30.0dBm 27.710926GHz QPSK/30~~Mhz~~ MHz BW Bosch Modem Test Set				TECH.:	MARK SEVERSON
TEST SPECIFICATION:	2.993 (3m)				TEST NUMBER:	RE-1
ROD ANT. #:		CABLE #:	2B	DETECT. TYPE: PEAK	LOCATION:	BOATS
BICON ANT. #:	230	PREAMP. #:	401	RES. BW (kHz): 100	DISTANCE (m):	3M
LOG ANT. #:	227	LIMITER#	181	VIDEO BW (kHz): 100	EUT VOLTAGE:	-48VDC
HORN ANT. #:		ATTEN.#:	N/A	TEMP. (deg. C): 28	EUT FREQ. (Hz):	N/A
DIPOLE ANT #:		DETECTOR#:	697	HUMIDITY (%): 46	PHOTO ID:	180218 RE-1 RAD. EM.

Emission Frequency (MHz)	Ant. Pol. (H/V)	Det. Atten. (dB)	Meter Reading (dBuV)	Antenna Factor (dB)	Path Loss (dB)	RF Gain (dB)	Corrected Reading (dBuV/m)	Spec. Limit (dBuV/m)	CR/SL Delta (dB)	Pass Fail Marginal	Notes
35.000	V	0.0	31.0	10.6	1.42	24.6	18.42	84.6	-66.18	Pass	Noise floor
150.000	V	0.0	31.0	13.52	2.82	24.6	22.74	84.6	-61.86	Pass	Noise floor
290.000	V	0.0	31.0	16.5	4.19	24.6	27.09	84.6	-57.51	Pass	Noise floor
35.000	H	0.0	30.0	10.6	1.42	24.6	17.42	84.6	-67.18	Pass	Noise floor
150.000	H	0.0	30.0	13.52	2.82	24.6	21.74	84.6	-62.86	Pass	Noise floor
290.000	H	0.0	30.0	16.5	4.19	24.6	26.09	84.6	-58.51	Pass	Noise floor
320.000	V	0.0	30.0	18.4	4.63	24.7	28.33	84.6	-56.27	Pass	Noise floor
425.000	V	0.0	30.0	16.8	5.51	24.9	27.41	84.6	-57.19	Pass	Noise floor
960.000	V	0.0	30.0	23.26	9.17	24.9	37.53	84.6	-47.07	Pass	Noise floor
320.000	H	0.0	30.0	18.4	4.63	24.7	28.33	84.6	-56.27	Pass	Noise floor
425.000	H	0.0	31.0	16.8	5.51	24.9	28.41	84.6	-56.19	Pass	Noise floor
960.000	H	0.0	31.0	23.26	9.17	24.9	38.53	84.6	-46.07	Pass	Noise floor
											SCANNED 30MHZ-1GHZ

Model Node Equipment Solid-State Transmitter (US)

Bosch Telecom, Inc.

SPURIOUS EMISSIONS
(MICROWAVE FIELD STRENGTH)

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Microwave Radiated Emissions Data

Complete X Preliminary ___ Page 1 of 1

Client: Bosch Telecom Test #: REMW02 W.O.#: 180218

EUT: Node Transmitter S/N: Unit #5 Photo ID: 180218

Technician: D. Light Specification: 2.993 Lab: BOATS Date: 6/22/98

Equipment Used: EM2200,180,CF00,CF06,697,494

Configuration: TX ~~Tx~~ 30.0 dBm 27.510 GHz CW Signal U.S. Frequency
30 dBm @ 3 m = 127.6 dBuV/m

Bandwidth: 1 MHz Video Bandwidth: 100 kHz Antenna Distance 3 m Detector:

Climatic Conditions:
Temperature: 35 C
Relative Humidity: 45 %
Atmospheric Pressure: 1000 mbar
Conversion: ____ dBpW= ____ dBuV/m @ ____ m

EUT Power: ___ 115 V.A.C. ___ 60 Hz
___ 208 V.A.C. ___ 50 Hz
___ 230 V.A.C.
X Other -48 VDC ____ 1 Phase ___ 3 Phase

X Peak
___ Average

dBc Limit = -43 dB

Freq. (GHz)	Meter Reading (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	RF Gain (dB)	4kHz Correction Factor (dB)	Corrected Reading (dBuV/m)	dBc	Pol.	Comments:
1.92	36	28.2	3.52	30.9	-24	12.8	-114.8	V	Noise floor
10.56	33	38.9	10	32.2	-24	25.7	-101.9	V	Noise floor
17.28	33	44.3	14.39	31.9	-24	35.8	-91.8	V	Noise floor
1.92	35	28.2	3.52	30.9	-24	11.8	-115.8	H	Noise floor
10.56	33	38.9	10	32.2	-24	25.7	-101.9	H	Noise floor
17.28	33	44.3	14.39	31.9	-24	35.8	-91.8	H	Noise floor
									Scanned
									1-18 GHz

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Microwave Radiated Emissions Data

Complete X Preliminary ___ Page 1 of 1

Client: Bosch Telecom Test #: REMW08 W.O.#: 180218

EUT: Node Transmitter S/N: Unit #5 Photo ID: 180218

Technician: D. Light Specification: 2.993 Lab: BOATS Date: 6/23/98

Equipment Used: EM2200,180,CF00,CF06,697,494

Configuration: Tx agn
~~Tx~~ 30.0 dBm 27.510 GHz CW Signal U.S. Frequency
30 dBm @ 3 m = 127.6 dBuV/m

Bandwidth: 1 MHz Video Bandwidth: 100 kHz Antenna Distance 3 m Detector:

Climatic Conditions:
Temperature: 35 C
Relative Humidity: 45 %
Atmospheric Pressure: 1000 mbar
Conversion: ____ dBpW= ____ dBuV/m @ ____ m

EUT Power: ___ 115 V.A.C. ___ 60 Hz
___ 208 V.A.C. ___ 50 Hz
___ 230 V.A.C.
X Other -48 VDC ___ 1 Phase ___ 3 Phase

X Peak
___ Average

dBc Limit = -43dB

Freq. (GHz)	Meter Reading (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	RF Gain (dB)	4kHz RBW Correction Factor (dB)	Corrected Reading (dBuV/m)	dBc	Pol.	Comments:
18	41	40.2	19.9	40	-24	37.1	-90.5	V	NOISE FLOOR
22	45	40.3	22.1	40	-24	43.4	-84.2	V	NOISE FLOOR
26.5	41	40.5	24.3	40	-24	41.8	-85.8	V	NOISE FLOOR
18	41	40.2	19.9	40	-24	37.1	-90.5	H	NOISE FLOOR
22	45	40.3	22.1	40	-24	43.4	-84.2	H	NOISE FLOOR
26.5	41	40.5	24.3	40	-24	41.8	-85.8	H	NOISE FLOOR
									Scanned
									18-26.5 GHz

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Microwave Radiated Emissions Data

Complete X Preliminary ___ Page 1 of 1

Client: BOSCH TELECOM Test #: 218U03 W.O.#: 180218

EUT: NODE TRANSMITTER S/N: UNIT #5 Photo ID: 180218 U03

Technician: M SEVERSON&$ D LIGHT Specification: CFR 47 P 2.993 Lab: BOATS Date: 6/18/98

Equipment Used: 897,935

Configuration: TX 30.0dBm 27.510GHZ CW Signal U.S. Frequency
30.0dBm at 3m = 127.6dBuV/m

Bandwidth: 1MHZ Video Bandwidth: 100KHZ Antenna Distance 3 m Detector:

Climatic Conditions:
Temperature: 32 C
Relative Humidity: 45 %
Atmospheric Pressure: 997 mbar

EUT Power: ___ 115 V.A.C. N/A 60 Hz X Peak
___ 208 V.A.C. N/A 50 Hz ___ Average
___ 230 V.A.C.
X Other -48VDC N/A 1 Phase N/A 3 Phase
dBc limit = -43dB

Freq. (GHz)	Meter Reading (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	RF Gain (dB)	4kHz RBW Correction Factor	Corrected Reading (dBuV/m)	dBc	Pol.	Comments:
26.550	33	43.4	1.02	0	0	77.4	-50.2	H	Noise floor
27.510	33	43.4	1.02	0	0	77.4	-50.2	H	Noise floor
32.0	34	43.52	1.02	0	0	78.5	-49.1	H	Noise floor
26.550	34	43.4	1.02	0	0	78.4	-49.2	V	Noise floor
27.510	38.87	43.4	1.02	0	0	83.3	-44.3	V	Noise floor
32.0	33	43.52	1.02	0	0	77.5	-50.1	V	Noise floor
									Scanned
									26.5-40Ghz

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Microwave Radiated Emissions Data

Complete X   Preliminary ___   Page 1 of 1

Client: BOSCH TELECOM   Test #: 218U11   W.O.#: 180218

EUT: NODE TRANSMITTER   S/N: UNIT #5   Photo ID: 180218 U11

Technician: M SEVERSON & D LIGHT   Specification: CFR 47 P 2.993   Lab: BOATS   Date: 6/19/98

Equipment Used: 897,935

Configuration: TX 30.0dBm 27.510GHz CW U.S. FREQUENCY
30.0dBm at 3m = 127.6dBuV/m

Bandwidth: 1MHZ   Video Bandwidth: 100KHZ   Antenna Distance 3 m   Detector:

Climatic Conditions:
Temperature: 32 C
Relative Humidity: 45 %
Atmospheric Pressure: 997 mbar

EUT Power: ___ 115 V.A.C.   n.a 60 Hz
___ 208 V.A.C.   n.a 50 Hz
___ 230 V.A.C.
X Other -48VDC   n/a 1 Phase   n/a 3 Phase
dBc limit = -43dB

X Peak
___ Average

Freq. (GHz)	Meter Reading (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	RF Gain (dB)	4kHz RBW Correction Factor (dB)	Corrected Reading (dBuV/m)	dBc	Pol.	Comments:
53.1	33	41.17	1.02	0	-24	51.2	-76.4	H	Noise floor
55.02	34	41.46	1.02	0	-24	52.5	-75.1	H	Noise floor
40.0	36	38.7	1.02	0	-24	51.7	-75.9	H	Noise floor
53.1	33	41.17	1.02	0	-24	51.2	-76.4	V	Noise floor
55.02	33	41.46	1.02	0	-24	51.5	-76.1	V	Noise floor
40.0	35	38.7	1.02	0	-24	50.7	-76.9	V	Noise floor
79.65	38.2	44.7	1.02	0	-24	59.9	-67.7	H	Noise floor
82.53	38	45.1	1.02	0	-24	60.1	-67.5	H	Noise floor
60.0	47	43.3	1.02	0	-24	67.3	-60.3	H	Noise floor
79.65	38.4	44.7	1.02	0	-24	60.1	-67.5	V	Noise floor
82.53	38.2	45.1	1.02	0	-24	60.3	-67.3	V	Noise floor
60.0	46.9	43.3	1.02	0	-24	67.2	-60.4	V	Noise floor
60.0	47	43.3	1.02	0	-18.8	72.5	-55.1	H	300 ~~MHz~~ kHz BW
60.0	46.9	43.3	1.02	0	-18.8	72.4	-55.2	V	300 ~~MHz~~ kHz BW
									Scanned
									40-100 GHz

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Microwave Radiated Emissions Data

Complete X Preliminary ___ Page 1 of 1

Client: Bosch Telecom Test #: REMW03 W.O.#: 180218

EUT: Node Transmitter S/N: Unit #5 Photo ID: 180218

Technician: D. Light Specification: 2.993 Lab: BOATS Date: 6/22/98

Equipment Used: EM2200,180,CF00,CF06,697,494

Configuration: ~~Tx~~ 30.0 dBm QPSK/30 ~~MHZ~~ MHz BW
30 dBm @ 3 m = 127.6 dBuV/m

Bandwidth: 1 MHz Video Bandwidth: 100 kHz Antenna Distance 3 m Detector:

Climatic Conditions:
Temperature: 35 C
Relative Humidity: 45 %
Atmospheric Pressure: 1000 mbar
Conversion: ____ dBpW= ____ dBuV/m @ ____ m

EUT Power: ___ 115 V.A.C. _60 Hz
___ 208 V.A.C. _50 Hz
___ 230 V.A.C.
X Other -48 VDC ____ 1 Phase ___ 3 Phase

X Peak
___ Average

dBc Limit = -43 dB

Freq. (GHz)	Meter Reading (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	RF Gain (dB)	4kHz RBW Correction Factor (dB)	Corrected Reading (dBuV/m)	dBc	Pol.	Comments:
1.67	37	25.1	2.88	31	-24	9.98	-117.6	V	Noise floor
10.02	34	37.8	9.4	33.1	-24	24.1	-103.5	V	Noise floor
16.7	32	42.1	13.67	32.7	-24	31.1	-96.5	V	Noise floor
1.67	36	25.1	2.88	31	-24	8.98	-118.6	H	Noise floor
10.02	35	37.8	9.4	33.1	-24	25.1	-102.5	H	Noise floor
16.7	33	42.1	13.67	32.7	-24	32.1	-95.5	H	Noise floor
									Scanned
									1-18 GHz

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Microwave Radiated Emissions Data

Complete X Preliminary ___ Page 1 of 1

Client: Bosch Telecom Test #: REMW09 W.O.#: 180218

EUT: Node Transmitter S/N: Unit #5 Photo ID: 180218

Technician: D. Light Specification: 2.993 Lab: BOATS Date: 6/23/98

Equipment Used: EM2200,180,CF00,CF06,697,494

Configuration: TX ~~Tx~~ 30.0 dBm QPSK/30 ~~MHZ~~ MHz BW
30 dBm @ 3 m = 127.6 dBuV/m

Bandwidth: 1 MHz Video Bandwidth: 100 kHz Antenna Distance 3 m Detector:

Climatic Conditions:
Temperature: 35 C
Relative Humidity: 45 %
Atmospheric Pressure: 1000 mbar
Conversion: _____ dBpW= _____ dBuV/m @ _____ m

EUT Power: ___ 115 V.A.C. ___ 60 Hz X Peak
___ 208 V.A.C. ___ 50 Hz ___ Average
___ 230 V.A.C.
X Other -48 VDC _____ 1 Phase ___ 3 Phase

dBc Limit = -43 dB

Freq. (GHz)	Meter Reading (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	RF Gain (dB)	4kHz RBW Correction Factor (dB)	Corrected Reading (dBuV/m)	dBc	Pol.	Comments:
18	41	40.2	19.9	40	-24	37.1	-90.5	V	NOISE FLOOR
22	42	40.3	22.1	40	-24	40.4	-87.2	V	NOISE FLOOR
26.04	42	40.5	24.3	40	-24	42.8	-84.8	V	NOISE FLOOR
18	41	40.2	19.9	40	-24	37.1	-90.5	H	NOISE FLOOR
22	45	40.3	22.1	40	-24	43.4	-84.2	H	NOISE FLOOR
26.04	43	40.5	24.3	40	-24	43.8	-83.8	H	NOISE FLOOR
									Scanned
									18-26.5 GHz

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Microwave Radiated Emissions Data

Complete X Preliminary ___ Page 1 of 1

Client: BOSCH TELECOM Test #: 218U04 W.O.#: 180218

EUT: NODE TRANSMITTER S/N: UNIT #5 Photo ID: 180218 U04

Technician: M SEVERSON&$ D LIGHT Specification: CFR 47 P 2.993 Lab: BOATS Date: 6/18/98

Equipment Used: 897,935

Configuration: TX 30.0dBm 27.710GHZ QPSK/30MHZ BW
30.0dBm at 3m = 127.6dBuV/m

Bandwidth: 1MHZ Video Bandwidth: 100KHZ Antenna Distance 3 m Detector:

Climatic Conditions:
Temperature: 32 C
Relative Humidity: 45 %
Atmospheric Pressure: 997 mbar

EUT Power: ___ 115 V.A.C. N/A 60 Hz
___ 208 V.A.C. N/A 50 Hz
___ 230 V.A.C.
X Other -48VDC

X Peak
___ Average

n/a 1 Phase N/A 3 Phase
dBc limit = -43dB

Freq. (GHz)	Meter Reading (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	RF Gain (dB)	4kHz RBW Correction Factor (dB)	Corrected Reading (dBuV/m)	dBc	Pol.	Comments:
26.040	34.2	43.4	1.02	0	0	78.6	-49.0	H	Noise floor
27.710	35	43.4	1.02	0	0	79.4	-48.2	H	Noise floor
32.0	34	43.52	1.02	0	0	78.5	-49.1	H	Noise floor
26.040	34.4	43.4	1.02	0	0	78.8	-48.8	V	Noise floor
27.710	34	43.4	1.02	0	0	78.4	-49.2	V	Noise floor
32.0	34	43.52	1.02	0	0	78.5	-49.1	V	Noise floor
									Scanned
									26.5-40Ghz

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Microwave Radiated Emissions Data

Complete X Preliminary ___ Page 1 of 1

Client: BOSCH TELECOM Test #: 218U09 W.O.#: 180218

EUT: NODE TRANSMITTER S/N: UNIT #5 Photo ID: 180218 U09

Technician: M SEVERSON & D LIGHT Specification: CFR 47 P 2.993 Lab: BOATS Date: 6/19/98

Equipment Used: 897,935 MHz

Configuration: TX 30.0dBm 27.710 GHz QPSK/30MHZ BW
30.0dBm at 3m = 127.6dBuV/m

Bandwidth: 1MHZ Video Bandwidth: 100KHZ Antenna Distance 3 m Detector:

Climatic Conditions:
Temperature: 32 C
Relative Humidity: 45 %
Atmospheric Pressure: 997 mbar

EUT Power: ___ 115 V.A.C. n.a 60 Hz X Peak
___ 208 V.A.C. n.a 50 Hz ___ Average
___ 230 V.A.C.
X Other -48VDC n/a 1 Phase n/a 3 Phase
dBc limit = -43dB

Freq. (GHz)	Meter Reading (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	RF Gain (dB)	4kHz RBW Correction Factor (dB)	Corrected Reading (dBuV/m)	dBc	Pol.	Comments:
52.08	34.5	41.17	1.02	0	-24	52.7	-74.9	H	Noise floor
55.42	33	41.46	1.02	0	-24	51.5	-76.1	H	Noise floor
40.0	36	38.7	1.02	0	-24	51.7	-75.9	H	Noise floor
52.08	33.5	41.17	1.02	0	-24	51.7	-75.9	V	Noise floor
55.42	33.7	41.46	1.02	0	-24	52.2	-75.4	V	Noise floor
40.0	36	38.7	1.02	0	-24	51.7	-75.9	V	Noise floor
78.12	38.4	44.6	1.02	0	-24	60	-67.6	H	Noise floor
83.13	38.5	45.1	1.02	0	-24	60.6	-67.0	H	Noise floor
60.0	46.8	43.3	1.02	0	-24	67.1	-60.5	H	Noise floor
78.12	38.5	44.6	1.02	0	-24	60.1	-67.5	V	Noise floor
83.13	37.9	45.1	1.02	0	-24	60	-67.6	V	Noise floor
60.0	47	43.3	1.02	0	-24	67.3	-60.3	V	Noise floor
									kHz
60.0	38	43.3	1.02	0	-18.8	63.5	-64.1	H	300 ~~MHz BW~~ RBW
60.0	38	43.3	1.02	0	-18.8	63.5	-64.1	V	300 ~~MHz BW~~ RBW
									Scanned KHz
									40-100 GHz

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Microwave Radiated Emissions Data

Complete X Preliminary ___ Page 1 of 1

Client: Bosch Telecom Test #: REMW04 W.O.#: 180218

EUT: Node Transmitter S/N: Unit #5 Photo ID: 180218

Technician: D. Light Specification: 2.993 Lab: BOATS Date: 6/22/98

Equipment Used: EM2200,180,CF00,CF06,697,494

Configuration: ~~Tx~~ TX Output 30.0 dBm QPSK/40 ~~MHz~~ MHz agr BW
30 dBm @ 3 m = 127.6 dBuV/m

Bandwidth: 1 MHz Video Bandwidth: 100 kHz Antenna Distance 3 m Detector:

Climatic Conditions:
Temperature: 35 C
Relative Humidity: 45 %
Atmospheric Pressure: 1000 mbar
Conversion: _____ dBpW= _____ dBuV/m @ _____ m

EUT Power: ___ 115 V.A.C. ___ 60 Hz
___ 208 V.A.C. ___ 50 Hz
___ 230 V.A.C.
X Other -48 VDC _____ 1 Phase ___ 3 Phase

X Peak
___ Average

dBc Limit = -43dB

Freq. (GHz)	Meter Reading (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	RF Gain (dB)	4kHz RBW Correction Factor (dB)	Corrected Reading (dBuV/m)	dBc	Pol.	Comments:
1.51	37	25.1	2.88	31	-24	9.98	-117.6	V	NOISE FLOOR
9.06	34	37.7	8.68	33	-24	23.4	-104.2	V	NOISE FLOOR
16.61	34	42.1	13.67	32.7	-24	33.1	-94.5	V	NOISE FLOOR
1.51	37	25.1	2.88	31	-24	9.98	-117.6	H	NOISE FLOOR
9.06	34	37.7	8.68	33	-24	23.4	-104.2	H	NOISE FLOOR
16.61	34	42.1	13.67	32.7	-24	33.1	-94.5	H	NOISE FLOOR
									~~125~~ agr
									Scanned
									1-18 GHZ

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Microwave Radiated Emissions Data

Complete X Preliminary ___ Page 1 of 1

Client: Bosch Telecom Test #: REMW10 W.O.#: 180218

EUT: Node Transmitter S/N: Unit #5 Photo ID: 180218

Technician: D. Light Specification: 2.993 Lab: BOATS Date: 6/23/98

Equipment Used: EM2200,180,CF00,CF06,697,494

Configuration: Tx ~~Tx~~ 30.0 dBm QPSK/40 ~~MHZ~~ MHz BW
30 dBm @ 3 m = 127.6 dBuV/m

Bandwidth: 1 MHz Video Bandwidth: 100 kHz Antenna Distance 3 m Detector:

Climatic Conditions:
Temperature: 35 C
Relative Humidity: 45 %
Atmospheric Pressure: 1000 mbar
Conversion: ____ dBpW= ____ dBuV/m @ ____ m

EUT Power: ___ 115 V.A.C. ___ 60 Hz
___ 208 V.A.C. ___ 50 Hz
___ 230 V.A.C.
X Other -48 VDC ____ 1 Phase ___ 3 Phase

X Peak
___ Average

dBc limit = -43 dB

Freq. (GHz)	Meter Reading (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	RF Gain (dB)	4kHz RBW Correction Factor (dB)	Corrected Reading (dBuV/m)	dBc	Pol.	Comments:
18	41	40.2	19.9	40	-24	37.1	-90.5	V	NOISE FLOOR
22	45	40.3	22.1	40	-24	43.4	-84.2	V	NOISE FLOOR
26.04	43	40.5	24.3	40	-24	43.8	-83.8	V	NOISE FLOOR
18	41	40.2	19.9	40	-24	37.1	-90.5	H	NOISE FLOOR
22	45	40.3	22.1	40	-24	43.4	-84.2	H	NOISE FLOOR
26.04	43	40.5	24.3	40	-24	43.8	-83.8	H	NOISE FLOOR
									Scanned
									18-26.5 GHz

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Client: BOSCH TELECOM Test #: 218U05 W.O.#: 180218

EUT: NODE TRANSMITTER S/N: UNIT #5 Photo ID: 180218 U05

Technician: M SEVERSON&$ D LIGHT Specification: CFR 47 P 2.993 Lab: BOATS Date: 6/18/98

Equipment Used: 897,935 MHz

Configuration: TX 30.0dBm 27.550 GHz QPSK/40MHZ BW
30.0dBm at 3m = 127.6dBuV/m

Bandwidth: 1MHZ Video Bandwidth: 100KHZ Antenna Distance 3 m Detector:

Climatic Conditions:
Temperature: 32 C
Relative Humidity: 45 %
Atmospheric Pressure: 997 mbar

EUT Power: ___ 115 V.A.C. n.a 60 Hz X Peak
___ 208 V.A.C. n.a 50 Hz ___ Average
___ 230 V.A.C.
X Other -48VDC n/a 1 Phase n/a 3 Phase
dBc limit = -43dB

Freq. (GHz)	Meter Reading (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	RF Gain (dB)	4kHz RBW Correction Factor (dB)	Corrected Reading (dBuV/m)	dBc	Pol.	Comments:
26.040	35	43.4	1.02	0	-24	55.4	-72.2	H	Noise floor
27.550	34	43.4	1.02	0	-24	54.4	-73.2	H	Noise floor
32.0	4	43.52	1.02	0		48.5	-79.1	H	Noise floor
26.040	35	43.4	1.02	0	-24	55.4	-72.2	V	Noise floor
27.550	34	43.4	1.02	0	-24	54.4	-73.2	V	Noise floor
32.0	34.5	43.52	1.02	0	-24	55	-72.6	V	Noise floor
									Scanned
									26.5-40Ghz

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Microwave Radiated Emissions Data

Complete X Preliminary ___ Page 1 of 1

Client: BOSCH TELECOM Test #: 218U08 W.O.#: 180218

EUT: NODE TRANSMITTER S/N: UNIT #5 Photo ID 180218 U08

Technician: M SEVERSON & D LIGHT Specification: CFR 47 P 2.993 Lab: BOATS Date: 6/19/98

Equipment Used: 897,935

Configuration: TX 30.0dBm 27.550 GHz QPSK/40MHz BW
30.0dBm at 3m = 127.6dBuV/m

Bandwidth: 1MHZ Video Bandwidth: 100KHZ Antenna Distance 3 m Detector:

Climatic Conditions:
Temperature: 32 C
Relative Humidity: 45 %
Atmospheric Pressure: 997 mbar

EUT Power: ___ 115 V.A.C. n.a 60 Hz
___ 208 V.A.C. n.a 50 Hz
___ 230 V.A.C.
X Other -48VDC n/a 1 Phase n/a 3 Phase

X Peak
___ Average

dBc limit = -43dB

Freq. (GHz)	Meter Reading (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	RF Gain (dB)	4kHz RBW Correction Factor (dB)	Corrected Reading (dBuV/m)	dBc	Pol.	Comments:
52.08	34	41.17	1.02	0	-24	52.2	-75.4	H	Noise floor
55.1	34	41.46	1.02	0	-24	52.5	-75.1	H	Noise floor
40.0	35.5	38.7	1.02	0	-24	51.2	-76.4	H	Noise floor
52.08	34	41.17	1.02	0	-24	52.2	-75.4	V	Noise floor
55.1	33.5	41.46	1.02	0	-24	52	-75.6	V	Noise floor
40.0	36	38.7	1.02	0	-24	51.7	-75.9	V	Noise floor
78.12	37.5	44.6	1.02	0	-24	59.1	-68.5	H	Noise floor
82.65	38.2	45.1	1.02	0	-24	60.3	-67.3	H	Noise floor
60	46	43.3	1.02	0	-24	66.3	-61.3	H	Noise floor
78.12	38.7	44.6	1.02	0	-24	60.3	-67.3	V	Noise floor
82.65	38.2	45.1	1.02	0	-24	60.3	-67.3	V	Noise floor
60	46.3	43.3	1.02	0	-24	66.6	-61.0	V	Noise floor
									KHz
60	38	43.3	1.02	0	-18.8	63.5	-64.1	H	300 ~~MHz BW~~ RBW
60	38	43.3	1.02	0	-18.8	63.5	-64.1	V	300 ~~MHz BW~~ RBW KHz
									Scanned 40-100 GHz

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Microwave Radiated Emissions Data

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Client: Bosch Telecom Test #: REMW05 W.O.#: 180218

EUT: Node Transmitter S/N: Unit #5 Photo ID: 180218

Technician: D. Light Specification: 2.993 Lab: BOATS Date: 6/22/98

Equipment Used: EM2200,180,CF00,CF06,697,494

Configuration: ~~1x~~ TX ap 30.0 dBm QPSK/50 ~~MHZ~~ MHz BW apr
30 dBm @ 3 m = 127.6 dBuV/m

Bandwidth: 1 MHz Video Bandwidth: 100 kHz Antenna Distance 3 m Detector:

Climatic Conditions: EUT Power: ___ 115 V.A.C. ___ 60 Hz X Peak
Temperature: 35 C ___ 208 V.A.C. ___ 50 Hz ___ Average
Relative Humidity: 45 % ___ 230 V.A.C.
Atmospheric Pressure: 1000 mbar X Other -48 VDC ___ 1 Phase ___ 3 Phase
Conversion: ___ dBpW= ___ dBuV/m @ ___ m

dBc limit = -43 dB

Freq. (GHz)	Meter Reading (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	RF Gain (dB)	4kHz RBW Correction Factor (dB)	Corrected Reading (dBuV/m)	dBc	Pol.	Comments:
1.19	35	23.1	2.32	28.2	-24	8.22	-119.4	V	Noise floor
9.52	34	37.9	9.93	33.1	-24	24.7	-102.9	V	Noise floor
17.85	33	44.4	14.46	32.5	-24	35.4	-92.2	V	Noise floor
1.19	35	23.1	2.32	28.2	-24	8.22	-119.4	H	Noise floor
9.52	34	37.9	9.93	33.1	-24	24.7	-102.9	H	Noise floor
17.85	33	44.4	14.46	32.5	-24	35.4	-92.2	H	Noise floor
									Scanned
									1-18 GHz

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Microwave Radiated Emissions Data

Complete X Preliminary ___ Page 1 of 1

Client: Bosch Telecom Test #: REMW11 W.O.#: 180218

EUT: Node Transmitter S/N: Unit #5 Photo ID: 180218

Technician: D. Light Specification: 2.993 Lab: BOATS Date: 6/23/98

Equipment Used: EM2200,180,CF00,CF06,697,494

Configuration: ~~Tx~~ TX 30.0 dBm QPSK/50 ~~MHZ~~ MHz BW
30 dBm @ 3 m = 127.6 dBuV/m

Bandwidth: 1 MHz Video Bandwidth: 100 kHz Antenna Distance 3 m Detector:

Climatic Conditions: EUT Power: ___ 115 V.A.C. ___ 60 Hz X Peak
Temperature: 35 C ___ 208 V.A.C. ___ 50 Hz ___ Average
Relative Humidity: 45 % ___ 230 V.A.C.
Atmospheric Pressure: 1000 mbar X Other -48 VDC ___ 1 Phase ___ 3 Phase
Conversion: ___ dBpW= ___ dBuV/m @ ___ m dBc limit = -43dB

Freq. (GHz)	Meter Reading (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	RF Gain (dB)	4kHz RBW Correction Factor (dB)	Corrected Reading (dBuV/m)	dBc	Pol.	Comments:
18	41	40.2	19.9	40	-24	37.1	-90.5	V	NOISE FLOOR
22	45	40.3	22.1	40	-24	43.4	-84.2	V	NOISE FLOOR
26.4	42	40.5	24.3	40	-24	42.8	-84.8	V	NOISE FLOOR
18	41	40.2	19.9	40	-24	37.1	-90.5	H	NOISE FLOOR
22	45	40.3	22.1	40	-24	43.4	-84.2	H	NOISE FLOOR
26.4	42	40.5	24.3	40	-24	42.8	-84.8	H	NOISE FLOOR
									Scanned
									18-26.5 GHz

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Microwave Radiated Emissions Data

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Client: BOSCH TELECOM Test #: 218U07 W.O.#: 180218

EUT: NODE TRANSMITTER S/N: UNIT #5 Photo ID: 180218 U07

Technician: M SEVERSON&$ D LIGHT Specification: CFR 47 P 2.993 Lab: BOATS Date: 6/19/98

Equipment Used: 897,935 agn

Configuration: TX 30.0dBm 27.590 GHz QPSK/50~~MHZ~~ MHz BW
30.0dBm at 3m = 127.6dBuV/m

Bandwidth: 1MHZ Video Bandwidth: 100KHZ Antenna Distance 3 m Detector:

Climatic Conditions:
Temperature: 32 C
Relative Humidity: 45 %
Atmospheric Pressure: 997 mbar

EUT Power: ___ 115 V.A.C. n.a 60 Hz
___ 208 V.A.C. n.a 50 Hz
___ 230 V.A.C.
X Other -48VDC n/a 1 Phase n/a 3 Phase
dBc limit = -43dB

X Peak
___ Average

Freq. (GHz)	Meter Reading (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	RF Gain (dB)	4kHz RBW Correction Factor (dB)	Corrected Reading (dBuV/m)	dBc	Pol.	Comments:
52.8	33.5	41.17	1.02	0	-24	51.7	-75.9	H	Noise floor
55.18	34	41.46	1.02	0	-24	52.5	-75.1	H	Noise floor
40.0	36	38.7	1.02	0	-24	51.7	-75.9	H	Noise floor
52.8	34	41.17	1.02	0	-24	52.2	-75.4	V	Noise floor
55.18	33.5	41.46	1.02	0	-24	52	-75.6	V	Noise floor
40.0	35.7	38.7	1.02	0	-24	51.4	-76.2	V	Noise floor
79.2	38.5	44.7	1.02	0	-24	60.2	-67.4	H	Noise floor
82.77	38.5	45.1	1.02	0	-24	60.6	-67.0	H	Noise floor
60.0	47	43.3	1.02	0	-24	67.3	-60.3	H	Noise floor
79.2	38.2	44.7	1.02	0	-24	59.9	-67.7	V	Noise floor
82.77	38.4	45.1	1.02	0	-24	60.5	-67.1	V	Noise floor
60.0	47	43.3	1.02	0	-24	67.3	-60.3	V	Noise floor
									kHz
60.0	38	43.3	1.02	0	-18.8	63.5	-64.1	H	300 ~~MHz~~ BW RBW agn
60.0	38	43.3	1.02	0	-18.8	63.5	-64.1	V	300 ~~MHz~~ BW RBW agn
									Scanned kHz
									40-100 GHz

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Microwave Radiated Emissions Data

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Client: Bosch Telecom Test #: REMW06 W.O.#: 180218

EUT: Node Transmitter S/N: Unit #5 Photo ID: 180218

Technician: D. Light Specification: 2.993 Lab: BOATS Date: 6/22/98

Equipment Used: EM2200,180,CF00,CF06,697,494

Configuration: ~~Tx~~ 30.0 dBm BOSCH MODEM TEST SET
30 dBm @ 3 m = 127.6 dBuV/m

Bandwidth: 1 MHz Video Bandwidth: 100 kHz Antenna Distance 3 m Detector:

Climatic Conditions:
Temperature: 35 C
Relative Humidity: 45 %
Atmospheric Pressure: 1000 mbar

EUT Power: ___ 115 V.A.C. ___ 60 Hz X Peak
___ 208 V.A.C. ___ 50 Hz ___ Average
___ 230 V.A.C.
X Other -48 VDC ___ 1 Phase ___ 3 Phase

Conversion: ___ dBpW= ___ dBuV/m @ ___ m

dBc Limit = -43 dBc

Freq. (GHz)	Meter Reading (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	RF Gain (dB)	4kHz RBW Correction Factor (dB)	Corrected Reading (dBuV/m)	dBc	Pol.	Comments:
1.670926	37	25.1	2.88	31	-24	9.98	-117.6	V	Noise floor
8.35463	32	37.7	8.23	31.6	-24	22.3	-105.3	V	Noise floor
16.70926	32	42.1	13.67	32.7	-24	31.1	-96.5	V	Noise floor
1.670926	37	25.1	2.88	31	-24	9.98	-117.6	H	Noise floor
8.35463	34	37.7	8.23	31.6	-24	24.3	-103.3	H	Noise floor
16.70926	33	42.1	13.67	32.7	-24	32.1	-95.5	H	Noise floor
									Scanned
									1-18 GHz

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Client: Bosch Telecom Test #: REMW12 W.O.#: 180218

EUT: Node Transmitter S/N: Unit #5 Photo ID: 180218

Technician: D. Light Specification: 2.993 Lab: BOATS Date: 6/23/98

Equipment Used: EM2200,180,CF00,CF06,697,494

Configuration: Tx 30.0 dBm BOSCH MODEM TEST SET
30 dBm @ 3 m = 127.6 dBuV/m

Bandwidth: 1 MHz Video Bandwidth: 100 kHz Antenna Distance 3 m Detector:

Climatic Conditions:
Temperature: 35 C
Relative Humidity: 45 %
Atmospheric Pressure: 1000 mbar
Conversion: _____ dBpW= _____ dBuV/m @ _____ m

EUT Power: ___ 115 V.A.C. ___ 60 Hz X Peak
___ 208 V.A.C. ___ 50 Hz ___ Average
___ 230 V.A.C.
X Other -48 VDC _____ 1 Phase ___ 3 Phase

dBC Limit = -43 dB

Freq. (GHz)	Meter Reading (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	RF Gain (dB)	4kHz RBW Correction Factor (dB)	Corrected Reading (dBuV/m)	dBc	Pol.	Comments:
18	41	40.2	19.9	40	-24	37.1	-90.5	V	NOISE FLOOR
22	45	40.3	22.1	40	-24	43.4	-84.2	V	NOISE FLOOR
26.4	42	40.5	24.3	40	-24	42.8	-84.8	V	NOISE FLOOR
18	41	40.2	19.9	40	-24	37.1	-90.5	H	NOISE FLOOR
22	45	40.3	22.1	40	-24	43.4	-84.2	H	NOISE FLOOR
26.4	42	40.5	24.3	40	-24	42.8	-84.8	H	NOISE FLOOR
									Scanned
									18-26.5 GHz

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Client: BOSCH TELECOM Test #: 218U01 W.O.#: 180218

EUT: NODE TRANSMITTER S/N: UNIT #5 Photo ID: 180218 U01

Technician: M SEVERSON&$ D LIGHT Specification: CFR 47 P 2.993 Lab: BOATS Date: 6/18/98

Equipment Used: 897,935

Configuration: TX 30.0dBm 27.710926GHZ QPSK/30MHz BW BOSCH MODEM TEST SET
30.0dBm at 3m = 127.6dBuV/m

Bandwidth: 1MHZ Video Bandwidth: 100KHZ Antenna Distance 3 m Detector:

Climatic Conditions:
Temperature: 32 C
Relative Humidity: 45 %
Atmospheric Pressure: 997 mbar

EUT Power: ___ 115 V.A.C. n.a 60 Hz X Peak
___ 208 V.A.C. n.a 50 Hz ___ Average
___ 230 V.A.C.
X Other -48VDC n/a 1 Phase n/a 3 Phase
dBc limit = -43dB

Freq. (GHz)	Meter Reading (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	RF Gain (dB)	4kHz RBW Correction Factor (dB)	Corrected Reading (dBuV/m)	dBc	Pol.	Comments:
27.04	32	43.4	1.02	0	-24	52.42	-75.2	H	Noise floor
27.710	32	43.4	1.02	0	-24	52.42	-75.2	H	Noise floor
32.0	32	43.52	1.02	0	-24	52.54	-75.1	H	Noise floor
27.04	32	43.4	1.02	0	-24	52.42	-75.2	V	Noise floor
27.710	32	43.4	1.02	0	-24	52.42	-75.2	V	Noise floor
32.0	32	43.52	1.02	0	-24	52.54	-75.1	V	Noise floor
									Scanned
									26.5-40Ghz

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Client: BOSCH TELECOM Test #: 218U10 W.O.#: 180218

EUT: NODE TRANSMITTER S/N: UNIT #5 Photo ID: 180218 U10

Technician: M SEVERSON & D LIGHT Specification: CFR 47 P 2.993 Lab: BOATS Date: 6/19/98

Equipment Used: 897,935 qp

Configuration: TX 30.0dBm 27.710926 GHz QPSK/30MHZ BW Bosch Modem Test Set
30.0dBm at 3m = 127.6dBuV/m

Bandwidth: 1MHZ Video Bandwidth: 100KHZ Antenna Distance 3 m Detector:

Climatic Conditions:
Temperature: 32 C
Relative Humidity: 45 %
Atmospheric Pressure: 997 mbar

EUT Power: ___ 115 V.A.C. n.a 60 Hz
___ 208 V.A.C. n.a 50 Hz
___ 230 V.A.C.
X Other -48VDC n/a 1 Phase n/a 3 Phase

X Peak
___ Average

dBc limit = -43dB

Freq. (GHz)	Meter Reading (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	RF Gain (dB)	4kHz RBW Correction Factor (dB)	Corrected Reading (dBuV/m)	dBc	Pol.	Comments:
52.08	33.9	41.17	1.02	0	-24	52.1	-75.5	H	Noise floor
55.4218	33.4	41.46	1.02	0	-24	51.9	-75.7	H	Noise floor
40.0	35.7	38.7	1.02	0	-24	51.4	-76.2	H	Noise floor
52.08	33	41.17	1.02	0	-24	51.2	-76.4	V	Noise floor
55.4218	33	41.46	1.02	0	-24	51.5	-76.1	V	Noise floor
40.0	36	38.7	1.02	0	-24	51.7	-75.9	V	Noise floor
78.12	39.7	44.6	1.02	0	-24	61.3	-66.3	H	Noise floor
83.13278	38	45.1	1.02	0	-24	60.1	-67.5	H	Noise floor
60.0	44	43.3	1.02	0	-24	64.3	-63.3	H	Noise floor
78.12	38.7	44.6	1.02	0	-24	60.3	-67.3	V	Noise floor
83.13278	38	45.1	1.02	0	-24	60.1	-67.5	V	Noise floor
60.0	44	43.3	1.02	0	-24	64.3	-63.3	V	Noise floor
									kHz
60.0	38	43.3	1.02	0	-18.8	63.5	-64.1	H	300 ~~MHz~~ BW RBW qp
60.0	38	43.3	1.02	0	-18.8	63.5	-64.1	V	300 ~~MHz~~ BW RBW qp
									Scanned kHz
									40-100 GHz

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Model Node Equipment Solid-State Transmitter (US)

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International Compliance Corporation
"Your Certification Solution" sm

Dallas/Ft. Worth Headquarters:
802 N. Kealy
Lewisville, TX 75057
Tel: (972) 436-9600
Fax: (972) 436-2667

FREQUENCY STABILITY

Client: BOSCH TELECOM W.O.# 180218

EUT: NODE TRANSMITER S/N: UNIT #5

Date: 5/08/98 Tech: MARK SEVERSON

Tested IAW CFR 47 P2.995

EQUIPMENT USED: KTL#739 (Environmental Chamber)

CONFIGURATION: TX 27.920000Ghz

FREQUENCY (GHz)	TEMP(C°)	VOLTAGE		TIME	FREQUENCY TOLREANCE
27.920000010 (R/F)freq	-30°C	(-15%)	40.8Vdc		.001% (+/- 279.2 kHz)
27.920000011 (R/F)freq	-30°C	(Nominal)	48Vdc	1030	.001% (+/- 279.2 kHz)
27.920000020 (R/F)freq	-30°C	(+15%)	55.2Vdc		.001% (+/- 279.2 kHz)
27.920000105 (R/F)freq	-20°C	(-15%)	40.8Vdc		.001% (+/- 279.2 kHz)
27.920000099 (R/F)freq	-20°C	(Nominal)	48Vdc	1115	.001% (+/- 279.2 kHz)
27.920000099 (R/F)freq	-20°C	(+15%)	55.2Vdc		.001% (+/- 279.2 kHz)
27.920000216 (R/F)freq	-10°C	(-15%)	40.8Vdc		.001% (+/- 279.2 kHz)
27.920000215 (R/F)freq	-10°C	(Nominal)	48Vdc	1200	.001% (+/- 279.2 kHz)
27.920000208 (R/F)freq	-10°C	(+15%)	55.2Vdc		.001% (+/- 279.2 kHz)

REV 960717

FREQ STAB 04

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FREQUENCY (GHz)	TEMP(C°)	VOLTAGE		TIME	FREQUENCY TOLERANCE
27.920000206 (R/F)freq	0°C	(-15%)	40.8Vdc		.001% (+/- 279.2 kHz)
27.920000197 (R/F)freq	0°C	(Nominal)	48Vdc	1245	.001% (+/- 279.2 kHz)
27.920000215 (R/F)freq	0°C	(+15%)	55.2Vdc		.001% (+/- 279.2 kHz)
27.920000181 (R/F)freq	10°C	(-15%)	40.8Vdc		.001% (+/- 279.2 kHz)
27.920000192 (R/F)freq	10°C	(Nominal)	48Vdc	1330	.001% (+/- 279.2 kHz)
27.920000202 (R/F)freq	10°C	(+15%)	55.2Vdc		.001% (+/- 279.2 kHz)
27.920000205 (R/F)freq	20°C	(-15%)	40.8Vdc		.001% (+/- 279.2 kHz)
27.920000194 (R/F)freq	20°C	(Nominal)	48Vdc	1415	.001% (+/- 279.2 kHz)
27.920000197 (R/F)freq	20°C	(+15%)	55.2Vdc		.001% (+/- 279.2 kHz)

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FREQUENCY (GHz)	TEMP(C°)	VOLTAGE		TIME	FREQUENCY TOLERANCE
27.920000148 (R/F)freq	30°C	(-15%)	40.8Vdc		.001% (+/- 279.2 kHz)
27.920000136 (R/F)freq	30°C	(Nominal)	48Vdc	1500	.001% (+/- 279.2 kHz)
27.920000116 (R/F)freq	30°C	(+15%)	55.2Vdc		.001% (+/- 279.2 kHz)
27.920000106 (R/F)freq	40°C	(-15%)	40.8Vdc		.001% (+/- 279.2 kHz)
27.920000103 (R/F)freq	40°C	(Nominal)	48Vdc	1545	.001% (+/- 279.2 kHz)
27.920000120 (R/F)freq	40°C	(+15%)	55.2Vdc		.001% (+/- 279.2 kHz)
27.920000108 (R/F)freq	50°C	(-15%)	40.8Vdc		.001% (+/- 279.2 kHz)
27.920000112 (R/F)freq	50°C	(Nominal)	48Vdc	1630	.001% (+/- 279.2 kHz)
27.920000107 (R/F)freq	50°C	(+15%)	55.2Vdc		.001% (+/- 279.2 kHz)

APPENDIX C - CERTIFICATIONS AND RECOGNITIONS

CERTIFICATIONS AND RECOGNITIONS

NORTH AMERICA:

FEDERAL COMMUNICATIONS COMMISSION (United States of America)

NVLAP (United States of America)

UNDERWRITERS LABORATORIES (United States of America)

EUROPE:

ACEMARK EUROPE LTD (United Kingdom)

INTERFERENCE TECHNOLOGY INTERNATIONAL, LTD. (United Kingdom)

NEMKO (Norway)

TÜV RHEINLAND (Germany)

ASIA:

VCCI (Japan)

SOUTH PACIFIC:

MINISTRY OF COMMERCE (New Zealand)