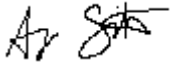


Test Report TR3871A

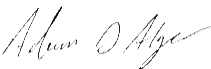
Equipment Under Test:	BD Neo Infusion Pump
Requirement(s):	FCC 15.247
Test Date(s):	03/12/2025 - 04/23/2025
Prepared for:	DEKA Research Attn: Jack Murphy 340 Commercial Street Manchester, NH 03101

Report Issued by: Anthony Smith, EMC Engineering Specialist

Signature: 

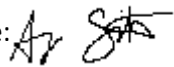
Date: 11/19/2025

Report Reviewed by: Adam Alger, Sr. Manager, EMC Laboratory

Signature: 

Date: 11/19/2025

Report Constructed by: Anthony Smith, EMC Engineering Specialist

Signature: 

Date: 6/9/2025

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Company: DEKA Research	Page 1 of 44	Name: BD Neo Infusion Pump
Report: TR3871A		Model: BD Neo PCU: 9200 BD Neo Pump Module: 9210
Job: C-3871		Serial: 03010574, 03010575, 03010576, 03010615

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Company: DEKA Research	Page 2 of 44	Name: BD Neo Infusion Pump
Report: TR3871A		Model: BD Neo PCU: 9200 BD Neo Pump Module: 9210
Job: C-3871		Serial: 03010574, 03010575, 03010576, 03010615

Ezurio Test Services in Review

The Ezurio laboratory located at W66 N220 Commerce Court Cedarburg, Wisconsin, 53012 USA is recognized through the following organizations:



A2LA – American Association for Laboratory Accreditation

Accreditation based on ISO/IEC 17025:2017 with Electrical (EMC) Scope

A2LA Certificate Number: 1255.01

Scope of accreditation includes all test methods listed herein unless otherwise noted



Federal Communications Commission (FCC) – USA

Accredited Test Firm Registration Number: 953492

Recognition of two 3 meter Semi-Anechoic Chambers



Innovation, Science and Economic Development Canada

Accredited U.S. Identification Number: US0218

Recognition of two 3 meter Semi-Anechoic Chambers

Company: DEKA Research	Page 3 of 44	Name: BD Neo Infusion Pump
Report: TR3871A		Model: BD Neo PCU: 9200 BD Neo Pump Module: 9210
Job: C-3871		Serial: 03010574, 03010575, 03010576, 03010615

1 TEST REPORT SUMMARY

During **3/12/2025-4/23/2025** the Equipment Under Test (EUT), **BD Neo Infusion Pump**, as provided by **DEKA Research** was tested to the following requirements:

FCC 15.247 – DTS 2.4 GHz WLAN

Requirements	Description	Method	Compliant
15.247(d), 15.209,	Spurious Radiated Emissions in Restricted Bands 30 MHz – 40 GHz	ANSI C63.10	Yes
15.247(a)(2)	6dB and 99% Occupied Bandwidth	ANSI C63.10	Yes
15.247(b)(3)	RF Output Power	ANSI C63.10	Yes
15.247(d)	Emissions in Non-Restricted Frequency Bands	ANSI C63.10	Yes
15.247(e)	Power Spectral Density	ANSI C63.10	Yes
2.1055(d)	Frequency Stability	ANSI C63.10	Reported
15.207	AC Mains Conducted Emissions	ANSI C63.10	Yes

Notice:

The results relate only to the item tested as configured and described in this report. Any additional configurations, modes of operation, or modifications made to the equipment under test after the specified test date(s) are at the decision of the client and may not apply to the data seen in this test report.

The decision rule for Pass / Fail assessment to the specification or standard listed in this test report has been agreed upon by the client and laboratory to be as follows:

Measurement Type	Rule
Emissions – Amplitude	1 dB below specified limit
Emissions – Frequency	1% less than the specification
Immunity	Tested at specified level

Company: DEKA Research	Page 4 of 44	Name: BD Neo Infusion Pump
Report: TR3871A		Model: BD Neo PCU: 9200 BD Neo Pump Module: 9210
Job: C-3871		Serial: 03010574, 03010575, 03010576, 03010615

2 CLIENT INFORMATION

Company Name	DEKA Research
Contact Person	Jack Murphy
Address	340 Commercial Street Manchester, NH 03101

2.1 Equipment Under Test (EUT) Information

The following information has been supplied by the client

Product Name	BD Neo Infusion Pump
Model Number	BD Neo PCU: 9200 BD Neo Pump Module: 9210
Serial Number	PCU 03010574: Config 33 used for comparison PCU 03010575: Config 34 used for reported test data PCU 03010576: Config 34 used for conducted RF test data PCU 03010615: Config 39 with antenna termination used for AC Mains Conducted Emissions
Date of Receipt	2/20/2025
Condition	Good
FCC ID:	2ATGAST60

2.2 Product Description

The Neo Infusion Device is a modular system that accurately infuses a broad range of drugs fluids, parenteral nutrition solutions, blood, and blood products. The Neo Infusion Device is intended for use in professional Healthcare Facilities on adult, pediatric, and neonatal patients. The Neo Infusion Device consists of the Point-of-Care Unit (PCU), and up to four detachable Large Volume Pump (LVP) Modules, which provide infusion capabilities.

2.3 Modifications Incorporated for Compliance

None noted at time of test

2.4 Deviations and Exclusions from Test Specifications

None noted at time of test

Company: DEKA Research	Page 5 of 44	Name: BD Neo Infusion Pump
Report: TR3871A		Model: BD Neo PCU: 9200 BD Neo Pump Module: 9210
Job: C-3871		Serial: 03010574, 03010575, 03010576, 03010615

2.5 Additional Information

Radio programmed via Labtool software. Two configurations exist for device. These are known as Config 33 and Config 34. Config 34 was used for reported test results. Devices were checked to compare any concerning areas, and no substantial differences were noted.

Transmitters in EUT:

125 kHz: Inductively coupled “proximity” identification or access control technology.

13.56 MHz: Inductively coupled and capable of reading NFC credentials as well as other credentials operating at 13.56 MHz.

2.4/5 GHz: WLAN – 802.11a/b/g/n/ac.

2.6 Software Versions

Milestone 29 Wifi Test Version

Neo Clinical Application Version 1.3.7.6001

Normal Badge Reader software 2.3.3

Labtool Version 1.0.0.164

2.7 Auxiliary Equipment

Laptop

Dell Latitude 5450

MN: P165G

SN: 15702971583

Network Switch

Cisco SG200-08

MN: SLM2008T-V01

SN: PSJ150800KY

Company: DEKA Research	Page 6 of 44	Name: BD Neo Infusion Pump
Report: TR3871A		Model: BD Neo PCU: 9200 BD Neo Pump Module: 9210
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2.8 Power Levels

Nominal Bandwidth	Channel	Mode	Data Rate	Frequency (MHz)	Power Setting
20	1	11b	1M	2412	16
20	2	11b	1M	2417	16
20	3	11b	1M	2422	18
20	6	11b	1M	2437	18
20	9	11b	1M	2452	18
20	10	11b	1M	2457	17
20	11	11b	1M	2462	17
20	1	11g	6M	2412	14
20	2	11g	6M	2417	16
20	3	11g	6M	2422	18
20	6	11g	6M	2437	18
20	9	11g	6M	2452	18
20	10	11g	6M	2457	16
20	11	11g	6M	2462	14
20	1	11n	HT20	2412	13
20	2	11n	HT20	2417	16
20	3	11n	HT20	2422	18
20	6	11n	HT20	2437	18
20	9	11n	HT20	2452	18
20	10	11n	HT20	2457	16
20	11	11n	HT20	2462	12
40	3	11n	HT40	2422	15
40	6	11n	HT40	2437	14
40	9	11n	HT40	2452	15

3 REFERENCES

Publication	Edition	Date	AMD 1	AMD 2
FCC eCFR 47 Part 15	-	2025	-	-
ANSI C63.10	-	2020	-	-
KDB 558074 D01*	-	2019	-	-
TR3871C	-	2025	-	-

*Note: KDB 558074 D01 not on Ezurio scope of accreditation

4 UNCERTAINTY SUMMARY

Using the guidance of the following publications the calculated measurement uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level, using a coverage factor of $k = 2$.

References
CISPR 16-4-1
CISPR 16-4-2
CISPR 32
ANSI C63.23
A2LA P103
A2LA P103c
ETSI TR 100-028

Measurement Type	Configuration	Uncertainty $\pm$
Radiated Emissions	Biconical Antenna	5.0 dB
Radiated Emissions	Log Periodic Antenna	5.3 dB
Radiated Emissions	Horn Antenna	4.7 dB
AC Line Conducted Emissions	Artificial Mains Network	3.4 dB
Telecom Conducted Emissions	Asymmetric Artificial Network	4.9 dB
Disturbance Power Emissions	Absorbing Clamp	4.1 dB
Radiated Immunity	3 Volts/meter	2.2 dB
Conducted Immunity	CDN/EM/BCI	2.4/3.5/3.4 dB
EFT Burst/Surge	Peak pulse voltage	164 volts
ESD Immunity	15 kV level	1377 Volts

Parameter	ETSI U.C. $\pm$	U.C. $\pm$
Radio Frequency, from F0	1×10^{-7}	0.55×10^{-7}
Occupied Channel Bandwidth	5 %	2 %
RF conducted Power (Power Meter)	1.5 dB	1.2 dB
RF conducted emissions (Spectrum Analyzer)	3.0 dB	1.7 dB
All emissions, radiated	6.0 dB	5.3 dB
Temperature	1° C	0.65° C
Humidity	5 %	2.9 %
Supply voltages	3 %	1 %

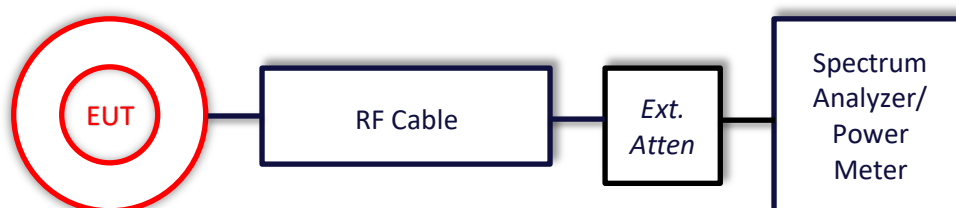
Company: DEKA Research	Page 9 of 44	Name: BD Neo Infusion Pump
Report: TR3871A		Model: BD Neo PCU: 9200 BD Neo Pump Module: 9210
Job: C-3871		Serial: 03010574, 03010575, 03010576, 03010615

5 TEST DATA

5.1 Antenna Port Conducted Emissions

Description of Measurement	The direct measurement of emissions at the antenna port of the EUT is achieved by use of a RF connection to a spectrum analyzer or power meter. The cable and attenuator factors are loaded into the analyzer or power meter allowing for direct measurement readings without the need for further corrections.
Example Calculations	Measurement (dBm) + Cable factor (dB) + External Attenuator (dB) = Corrected Reading (dBm) Margin (dB) = Limit (dBm) – Corrected Reading (dBm)

Block Diagram



Instrumentation

Asset #	Description	Manufacturer	Model #	Serial #	Date	Due Date	Status
AA 960144	Cable	Gore	EKD01D010720	5800373	1/28/2025	1/28/2026	Active Verification
EE 960070	AC Power Source	Cal. Inst.	1251RP	n/a	1/30/2025	1/30/2026	Active Verification
EE 960087	Analyzer - Spectrum	Agilent	N9010A	MY53400296	4/1/2025	4/1/2026	Active Calibration

Operator	Anthony Smith	QA	Jon Dille
Temperature	21.7, 22.1, 21.8, 21.4°C	R.H. %	28.4, 25.6, 23.4, 29.0
Test Date	3/12/2025, 3/13/2025, 3/17/2025, 3/18/2025	Location	Conducted RF Bench
Requirement	FCC 15.247	Method	ANSI C63.10

Company: DEKA Research	Page 10 of 44	Name: BD Neo Infusion Pump
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5.1.1 99% Occupied Bandwidth

Operator	Anthony Smith	QA	Jon Dilley
Temperature	21.7°C, 21.4°C, 21.4°C	R.H. %	20.2%, 37.6%, 24.9%
Test Date	3/3/2025, 3/4/2025, 3/6/2025	Location	Conducted RF Bench
Requirement	FCC 2.1049(i)	Method	ANSI C63.10

Test Parameters

Frequency	2400-2483.5 MHz	Setup	Conducted
RBW	200 kHz, 510 kHz	VBW	1 MHz, 3 MHz
Detector(s)	Peak	Settings	Max Hold

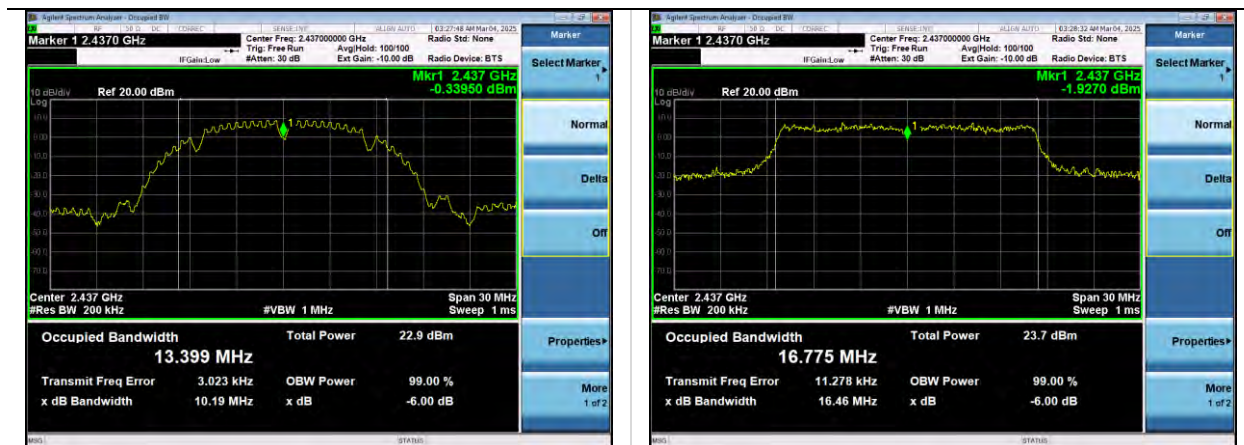
EUT Parameters

Input Power	120VAC 60Hz	Mode	Transmit
Frequency	2412, 2422, 2437, 2452, 2462 MHz	Channel	1, 6, 11 (20 MHz) 3, 6, 9 (40 MHz)

Table

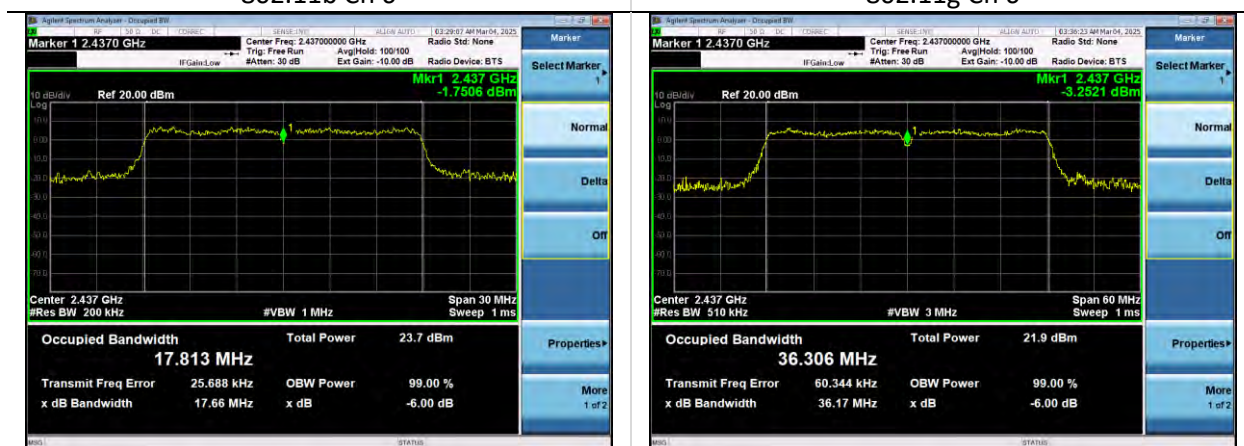
Nominal Bandwidth	Channel	Mode	Data Rate	OBW (MHz)
20	1	11b	1M	13.4
20	6	11b	1M	13.4
20	11	11b	1M	13.4
20	1	11g	6M	16.7
20	6	11g	6M	16.8
20	11	11g	6M	16.7
20	1	HT20	MCS0	17.7
20	6	HT20	MCS0	17.8
20	11	HT20	MCS0	17.7
40	3	HT40	MCS0	36.2
40	6	HT40	MCS0	36.3
40	9	HT40	MCS0	36.2

Plots



802.11b Ch 6

802.11g Ch 6



802.11n HT20 Ch 6

802.11n HT40 Ch 6

Company: DEKA Research	Page 13 of 44	Name: BD Neo Infusion Pump
Report: TR3871A		Model: BD Neo PCU: 9200 BD Neo Pump Module: 9210
Job: C-3871		Serial: 03010574, 03010575, 03010576, 03010615

5.1.2 6dB DTS Bandwidth

Operator	Anthony Smith	QA	Jon Dilley
Temperature	21.7°C, 21.4°C, 21.4°C	R.H. %	20.2%, 37.6%, 24.9%
Test Date	3/3/2025, 3/4/2025, 3/6/2025	Location	Conducted RF Bench
Requirement	FCC 15.247(a)(2)	Method	ANSI C63.10

Limits:

>500 kHz

Test Parameters

Frequency	2400-2483.5 MHz	Setup	Conducted
RBW	200 kHz, 510 kHz	VBW	1 MHz, 3 MHz
Detector(s)	Peak	Settings	Max Hold

EUT Parameters

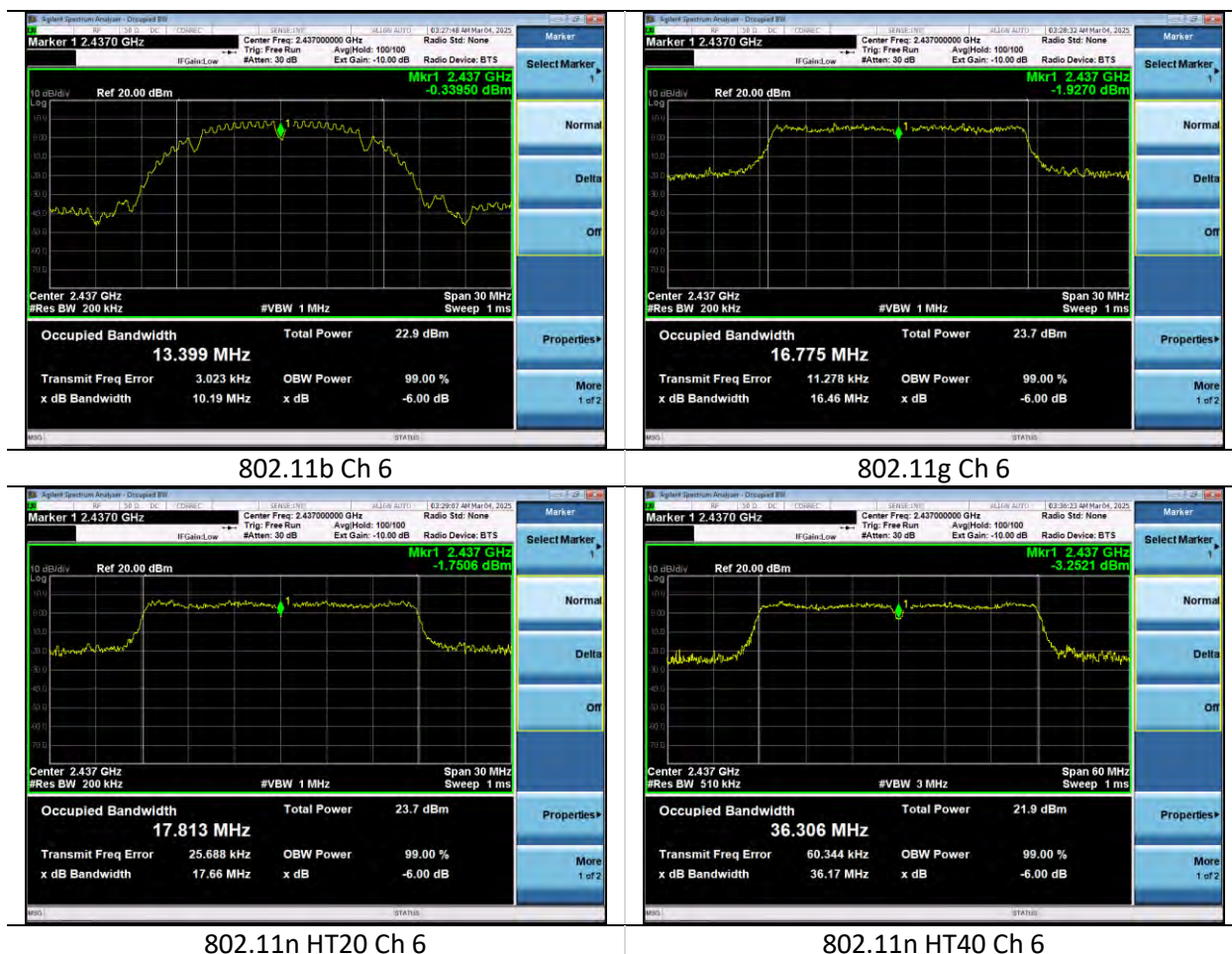
Input Power	120VAC 60Hz	Mode	Transmit
Frequency	2412, 2422, 2437, 2452, 2462 MHz	Channel	1, 6, 11 (20 MHz) 3, 6, 9 (40 MHz)

Table

Nominal Bandwidth	Channel	Mode	Data Rate	DTS BW (kHz)	Limit (kHz)	Margin (kHz)
20	1	11b	1M	10180	500	9680
20	6	11b	1M	10190	500	9690
20	11	11b	1M	10180	500	9680
20	1	11g	6M	16470	500	15970
20	6	11g	6M	16460	500	15960
20	11	11g	6M	16510	500	16010
20	1	HT20	MCS0	17680	500	17180
20	6	HT20	MCS0	17660	500	17160
20	11	HT20	MCS0	17660	500	17160
40	3	HT40	MCS0	36200	500	35700
40	6	HT40	MCS0	36170	500	35670
40	9	HT40	MCS0	36140	500	35640

Company: DEKA Research	Page 14 of 44	Name: BD Neo Infusion Pump
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Job: C-3871		Serial: 03010574, 03010575, 03010576, 03010615

Plots



Company: DEKA Research	Page 15 of 44	Name: BD Neo Infusion Pump
Report: TR3871A		Model: BD Neo PCU: 9200
Job: C-3871		BD Neo Pump Module: 9210
		Serial: 03010574, 03010575, 03010576, 03010615

5.1.3 Fundamental Emission Output Power

Operator	Anthony Smith	QA	Jon Dille
Temperature	21.7°C, 21.4°C, 21.4°C	R.H. %	20.2%, 37.6%, 24.9%
Test Date	3/3/2025, 3/4/2025, 3/6/2025	Location	Conducted RF Bench
Requirement	FCC 15.247(b)(3)	Method	ANSI C63.10

Limits: 1 Watt / 30 dBm

Test Parameters

Frequency	2400-2483.5 MHz	Setup	Conducted
RBW	200 kHz, 510 kHz	VBW	1 MHz, 3 MHz
Detector(s)	Average	Settings	Trace Average

EUT Parameters

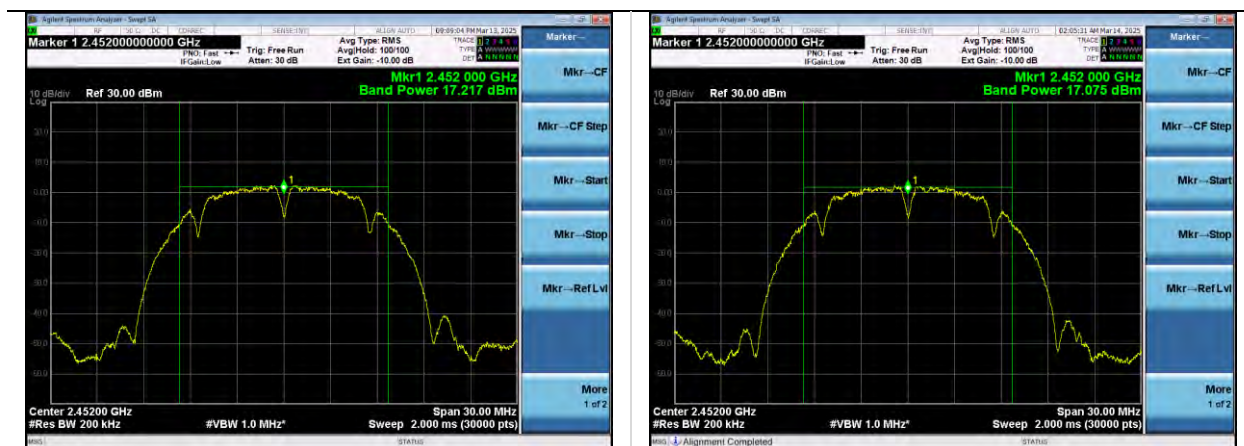
Input Power	120VAC 60Hz	Mode	Transmit
Frequency	2400-2483.5 MHz	Channel	1, 2, 3, 6, 9, 10, 11 (20 MHz) 3, 6, 9 (40 MHz)

Company: DEKA Research	Page 16 of 44	Name: BD Neo Infusion Pump
Report: TR3871A		Model: BD Neo PCU: 9200 BD Neo Pump Module: 9210
Job: C-3871		Serial: 03010574, 03010575, 03010576, 03010615

Table

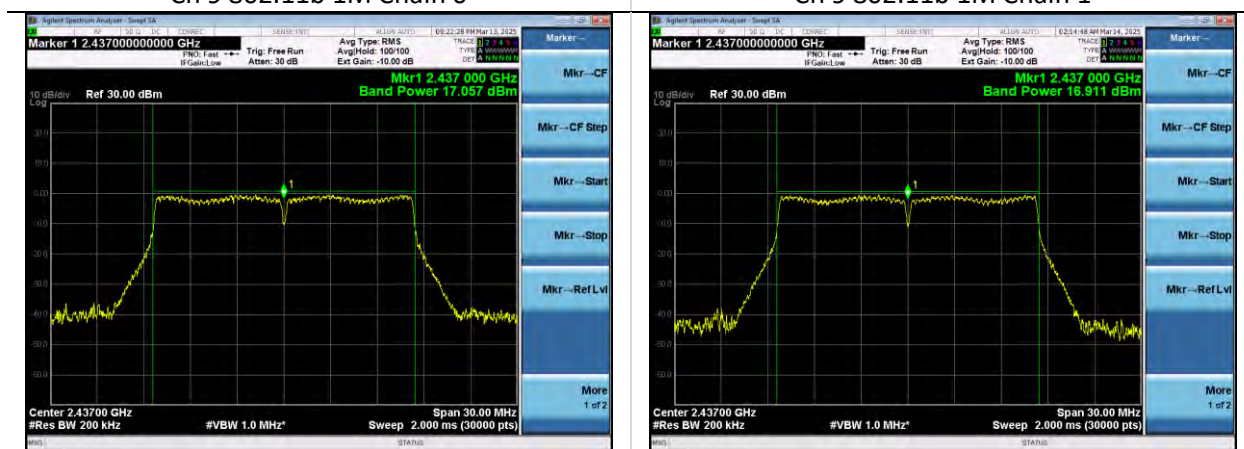
Channel	Mode	Data Rate	Frequency (MHz)	Measured Output Power (dBm) Chain 0	Measured Output Power (dBm) Chain 1	Total Power (mW)	Total Power (dBm)	Limit (dBm)	Margin (dB)	Power Setting
1	11b	1M	2412	15.4	15.0	66.3	18.2	30.0	11.8	16
2	11b	1M	2417	15.3	15.0	65.5	18.2	30.0	11.8	16
3	11b	1M	2422	17.2	17.0	102.6	20.1	30.0	9.9	18
6	11b	1M	2437	17.2	17.0	102.6	20.1	30.0	9.9	18
9	11b	1M	2452	17.2	17.1	103.8	20.2	30.0	9.8	18
10	11b	1M	2457	16.1	16.0	80.5	19.1	30.0	10.9	17
11	11b	1M	2462	16.2	16.0	81.5	19.1	30.0	10.9	17
1	11g	6M	2412	13.3	12.9	40.9	16.1	30.0	13.9	14
2	11g	6M	2417	15.2	14.8	63.3	18.0	30.0	12.0	16
3	11g	6M	2422	17.1	16.8	99.1	20.0	30.0	10.0	18
6	11g	6M	2437	17.1	16.9	100.3	20.0	30.0	10.0	18
9	11g	6M	2452	17.1	16.9	100.3	20.0	30.0	10.0	18
10	11g	6M	2457	15.1	15.0	64.0	18.1	30.0	11.9	16
11	11g	6M	2462	13.1	13.1	40.8	16.1	30.0	13.9	14
1	11n	HT20	2412	12.5	12.0	33.6	15.3	30.0	14.7	13
2	11n	HT20	2417	15.4	15.0	66.3	18.2	30.0	11.8	16
3	11n	HT20	2422	17.3	17.0	103.8	20.2	30.0	9.8	18
6	11n	HT20	2437	17.2	17.1	103.8	20.2	30.0	9.8	18
9	11n	HT20	2452	17.2	17.1	103.8	20.2	30.0	9.8	18
10	11n	HT20	2457	15.3	15.1	66.2	18.2	30.0	11.8	16
11	11n	HT20	2462	11.3	11.3	27.0	14.3	30.0	15.7	12
3	11n	HT40	2422	14.3	14.0	52.0	17.2	30.0	12.8	15
6	11n	HT40	2437	14.3	13.2	47.8	16.8	30.0	13.2	14
9	11n	HT40	2452	14.2	14.1	52.0	17.2	30.0	12.8	15

Worst Case Plots



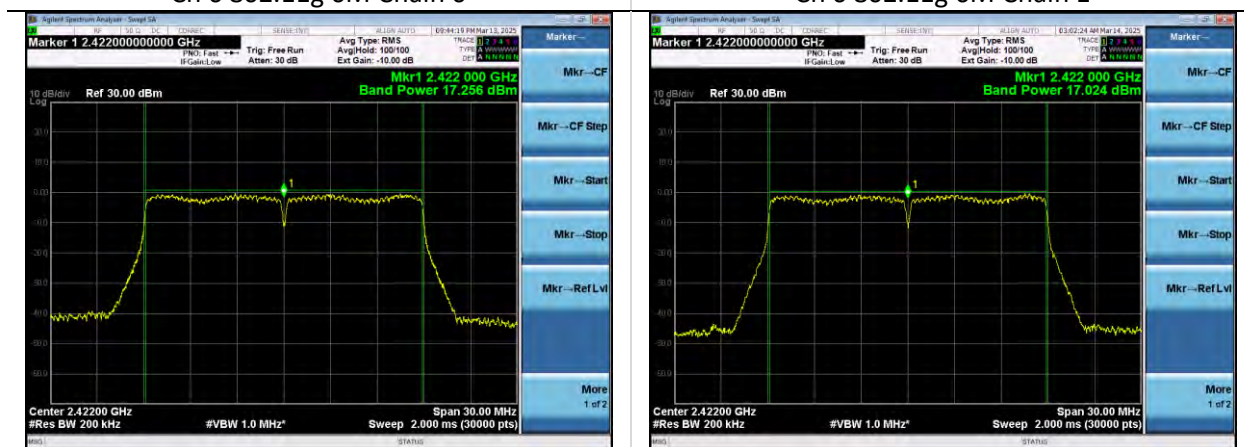
Ch 9 802.11b 1M Chain 0

Ch 9 802.11b 1M Chain 1



Ch 6 802.11g 6M Chain 0

Ch 6 802.11g 6M Chain 1



Ch 3 802.11n HT20 Chain 0

Ch 3 802.11n HT20 Chain 1

Company: DEKA Research	Name: BD Neo Infusion Pump
Report: TR3871A	Model: BD Neo PCU: 9200
Job: C-3871	BD Neo Pump Module: 9210
	Serial: 03010574, 03010575, 03010576, 03010615



Ch 3 802.11n HT40 Chain 0



Ch 3 802.11n HT40 Chain 1

Company: DEKA Research	Page 19 of 44	Name: BD Neo Infusion Pump
Report: TR3871A		Model: BD Neo PCU: 9200 BD Neo Pump Module: 9210
Job: C-3871		Serial: 03010574, 03010575, 03010576, 03010615

5.1.4 Maximum Power Spectral Density

Operator	Anthony Smith	QA	Jon Dilley
Temperature	21.7°C, 21.4°C, 21.4°C	R.H. %	20.2%, 37.6%, 24.9%
Test Date	3/3/2025, 3/4/2025, 3/6/2025	Location	Conducted RF Bench
Requirement	FCC 15.247 (e)	Method	ANSI C63.10

Limits:

<8 dBm / 3 kHz

Test Parameters

Frequency	2400-2483.5 MHz	Setup	Conducted
RBW	100 kHz	VBW	300 kHz
Detector(s)	Average	Settings	Trace Average

EUT Parameters

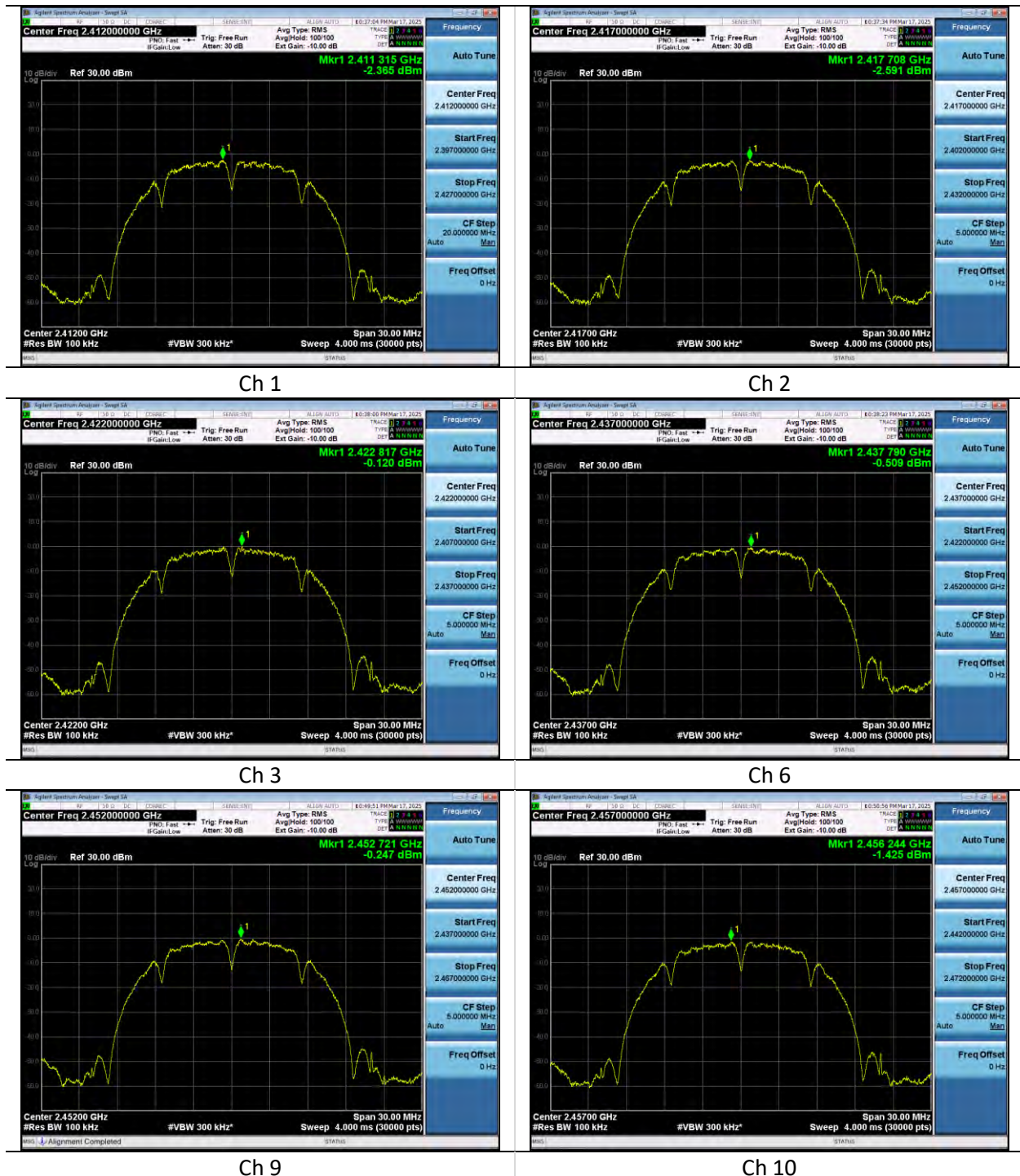
Input Power	120VAC 60Hz	Mode	Transmit
Frequency	2400-2483.5 MHz	Channel	1, 2, 3, 6, 9, 10, 11 (20 MHz) 3, 6, 9 (40 MHz)

Table

Nominal Bandwidth	Channel	Mode	Data Rate	Frequency (MHz)	Measured PSD (dBm/100kHz)	Limit (dBm/3kHz)	Margin (dB)	Power Setting
20	1	11b	1M	2412	-2.4	8.0	10.4	16
20	2	11b	1M	2417	-2.6	8.0	10.6	16
20	3	11b	1M	2422	-0.1	8.0	8.1	18
20	6	11b	1M	2437	-0.5	8.0	8.5	18
20	9	11b	1M	2452	-0.2	8.0	8.2	18
20	10	11b	1M	2457	-1.4	8.0	9.4	17
20	11	11b	1M	2462	-1.4	8.0	9.4	17
20	1	11g	6M	2412	-6.7	8.0	14.7	14
20	2	11g	6M	2417	-4.5	8.0	12.5	16
20	3	11g	6M	2422	-2.9	8.0	10.9	18
20	6	11g	6M	2437	-2.3	8.0	10.3	18
20	9	11g	6M	2452	-2.8	8.0	10.8	18
20	10	11g	6M	2457	-4.3	8.0	12.3	16
20	11	11g	6M	2462	-6.7	8.0	14.7	14
20	1	11n	HT20	2412	-7.8	8.0	15.8	13
20	2	11n	HT20	2417	-4.8	8.0	12.8	16
20	3	11n	HT20	2422	-3.0	8.0	11.0	18
20	6	11n	HT20	2437	-2.9	8.0	10.9	18
20	9	11n	HT20	2452	-2.8	8.0	10.8	18
20	10	11n	HT20	2457	-4.4	8.0	12.4	16
20	11	11n	HT20	2462	-8.4	8.0	16.4	12
40	3	11n	HT40	2422	-8.6	8.0	16.6	15
40	6	11n	HT40	2437	-9.6	8.0	17.6	14
40	9	11n	HT40	2452	-8.5	8.0	16.5	15

Worst Case Plots

802.11b 1M

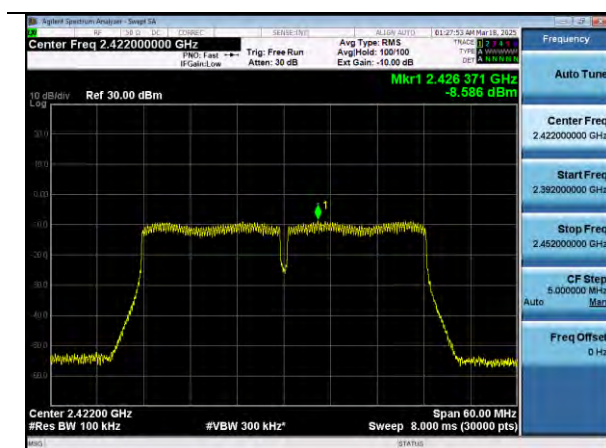


Company: DEKA Research		Name: BD Neo Infusion Pump
Report: TR3871A		Model: BD Neo PCU: 9200
Job: C-3871		BD Neo Pump Module: 9210
		Serial: 03010574, 03010575, 03010576, 03010615

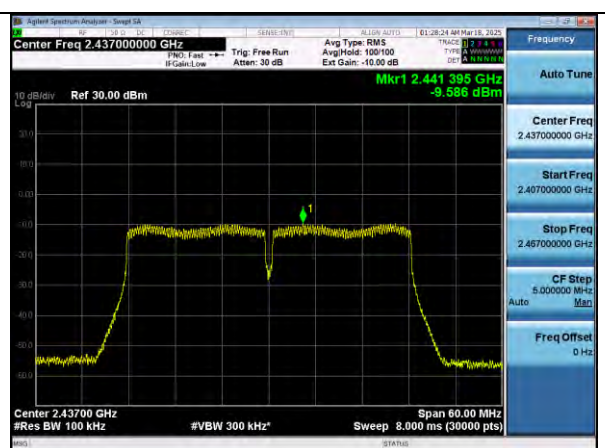


Ch 11

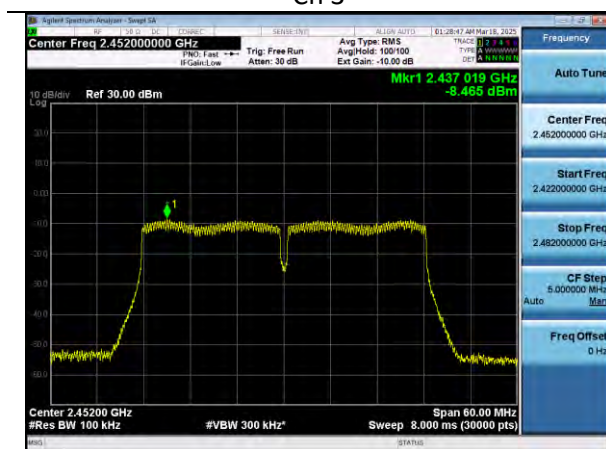
802.11n HT40



Ch 3



Ch 6



Ch 9

Company: DEKA Research	Page 23 of 44	Name: BD Neo Infusion Pump
Report: TR3871A		Model: BD Neo PCU: 9200 BD Neo Pump Module: 9210
Job: C-3871		Serial: 03010574, 03010575, 03010576, 03010615

5.1.5 Emissions in Non-Restricted Frequency Bands

Operator	Anthony Smith	QA	Jon Dilley
Temperature	21.7°C, 21.4°C, 21.4°C	R.H. %	20.2%, 37.6%, 24.9%
Test Date	3/3/2025, 3/4/2025, 3/6/2025	Location	Conducted RF Bench
Requirement	FCC 15.247 (d)	Method	ANSI C63.10

Limits: In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) (FCC 15.247) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

Test Parameters

Frequency	30-40000 MHz	Setup	Conducted RF
RBW	100 kHz	VBW	300 kHz
Detector(s)	Peak	Settings	Max Hold
Example Calculations	Reference Level – 30 dB = Limit (dBm)		

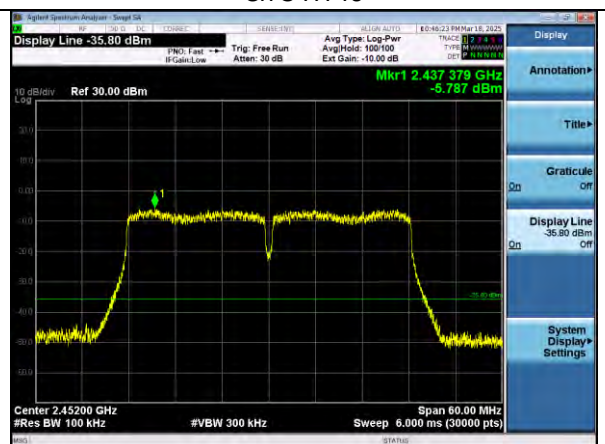
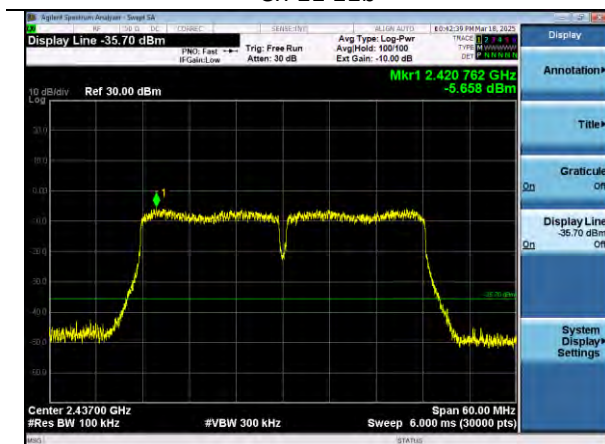
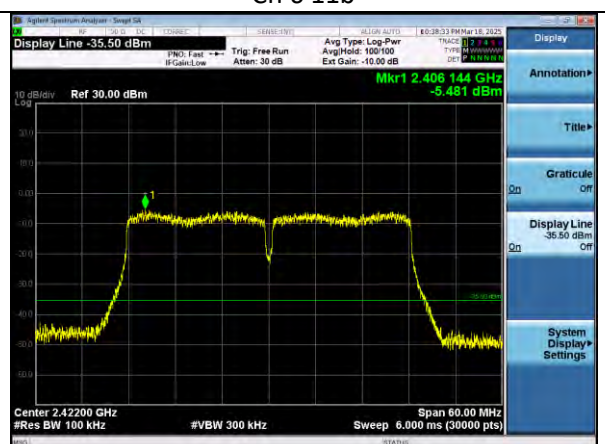
EUT Parameters

Input Power	120VAC 60Hz	Mode	Transmit
Frequency	2400-2483.5 MHz	Channel	1, 6, 11 (20 MHz) 3, 6, 9 (40 MHz)

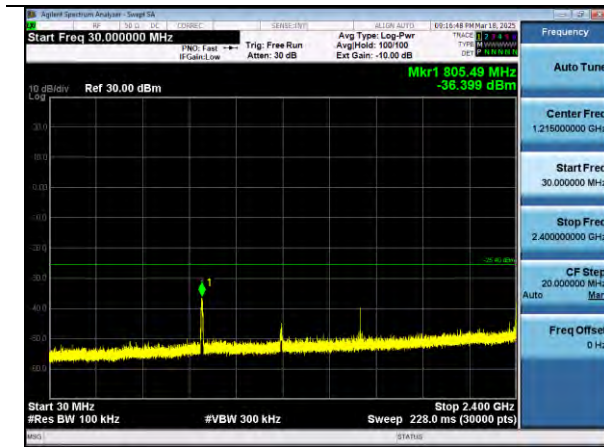
Table

Nominal Bandwidth	Channel	Mode	Data Rate	Frequency (MHz)	Measurement (dBm)	Limit (dBm)	Margin (dB)
20	1	11b	1M	805.5	-36.4	-25.4	11.0
20	6	11b	1M	810.8	-35.7	-23.6	12.1
20	11	11b	1M	819.2	-36.9	-24.6	12.3
20	1	11g	6M	2396.8	-39.4	-30.9	8.5
20	6	11g	6M	805.1	-40.9	-26.6	14.3
20	11	11g	6M	817.6	-44.1	-30.8	13.3
20	1	11n	HT20	2398.9	-39.6	-31.2	8.4
20	6	11n	HT20	820.7	-40.3	-26.4	13.9
20	11	11n	HT20	817.9	-45.1	-32.2	12.9
40	3	11n	HT40	2397.3	-42.3	-35.5	6.8
40	6	11n	HT40	2398.3	-45.1	-35.7	9.4
40	9	11n	HT40	833.6	-49.1	-35.8	13.3

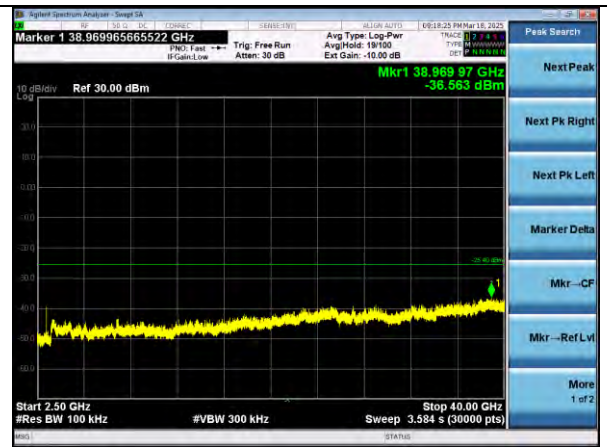
Plots



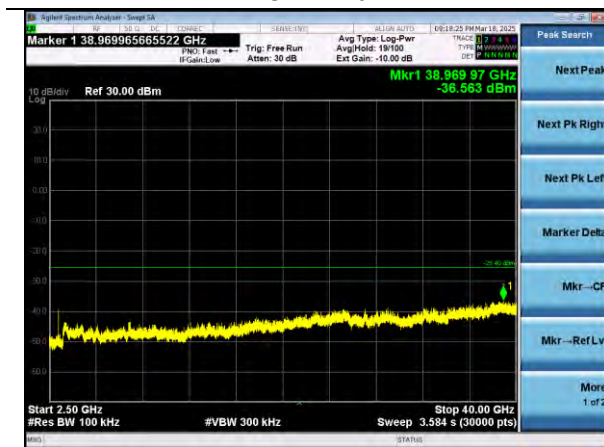
Company: DEKA Research	Page 26 of 44	Name: BD Neo Infusion Pump
Report: TR3871A		Model: BD Neo PCU: 9200 BD Neo Pump Module: 9210
Job: C-3871		Serial: 03010574, 03010575, 03010576, 03010615



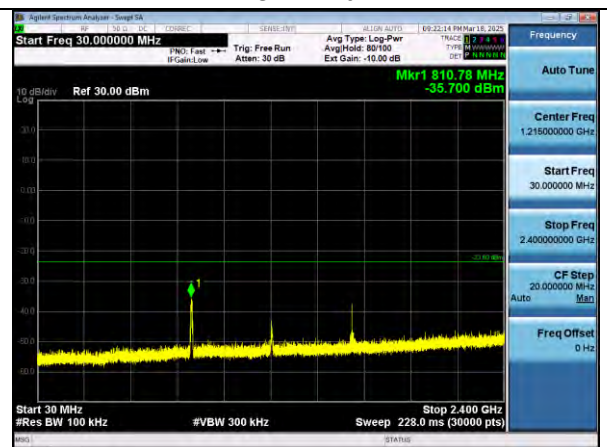
30-2400 MHz
Ch 1 11b



2500-40000 MHz
Ch 1 11b



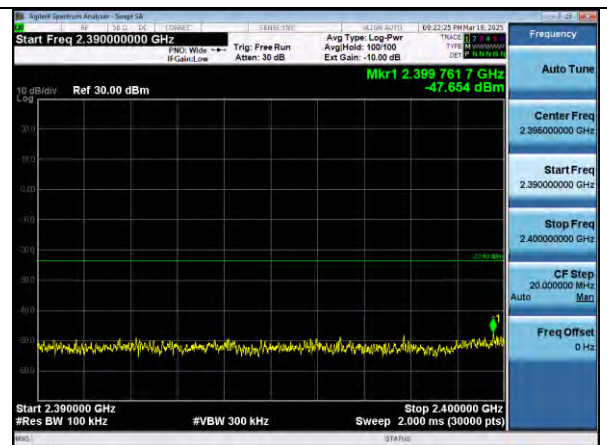
2390-2400 MHz
Ch 1 11b



30-2400 MHz Ch 6 11b

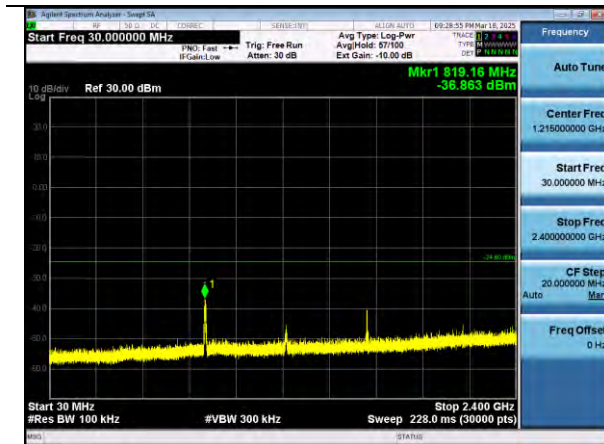


2500-40000 MHz
Ch 6 11b



2390-2400 MHz
Ch 6 11b

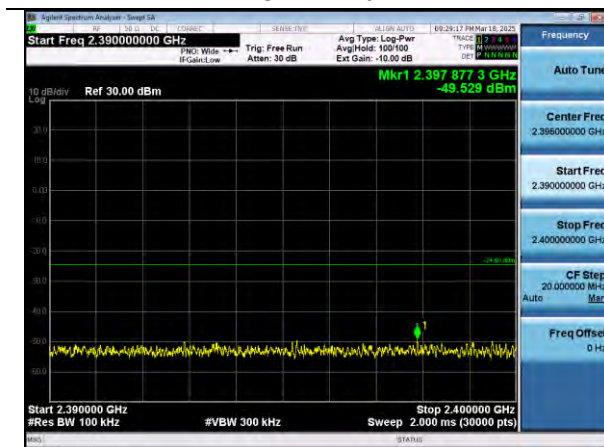
Company: DEKA Research		Name: BD Neo Infusion Pump
Report: TR3871A		Model: BD Neo PCU: 9200
Job: C-3871	Page 27 of 44	BD Neo Pump Module: 9210
		Serial: 03010574, 03010575, 03010576, 03010615



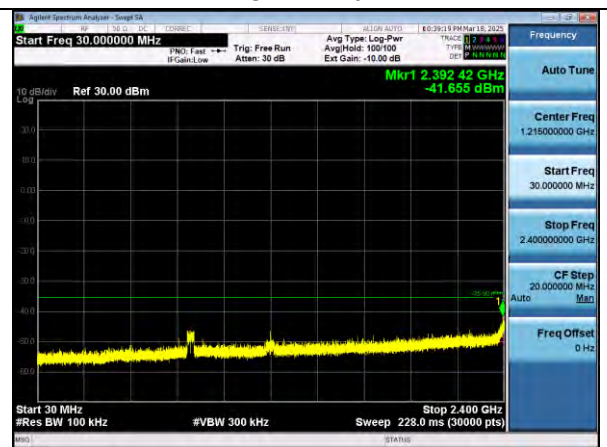
30-2400 MHz
Ch 11 11b



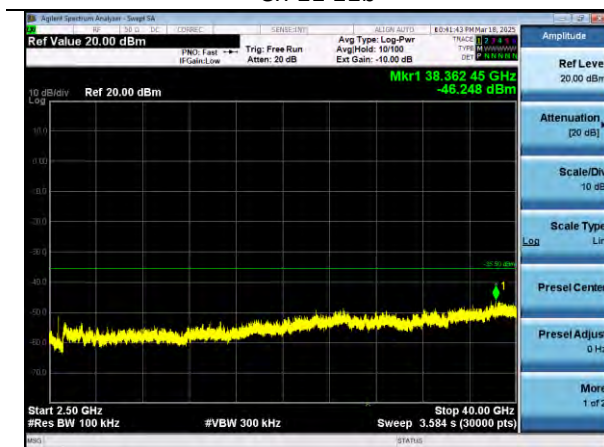
2500-40000 MHz
Ch 11 11b



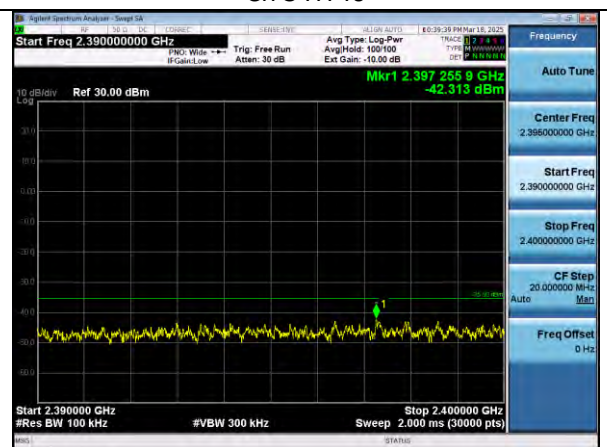
2390-2400 MHz
Ch 11 11b



30-2400 MHz
Ch 3 HT40

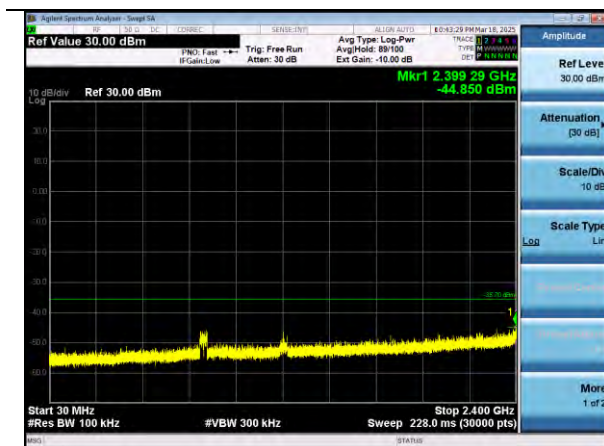


2500-40000 MHz
Ch 3 HT40

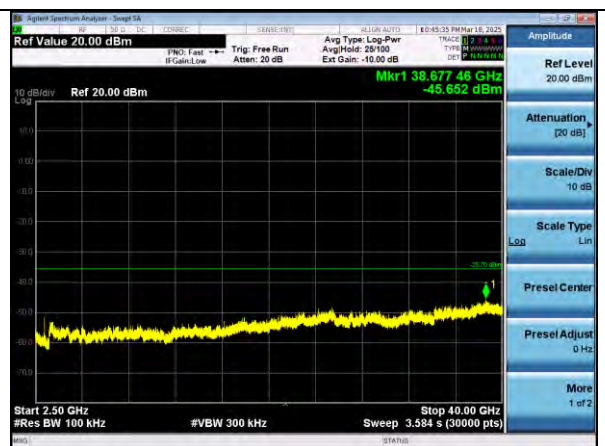


2390-2400 MHz
Ch 3 HT40

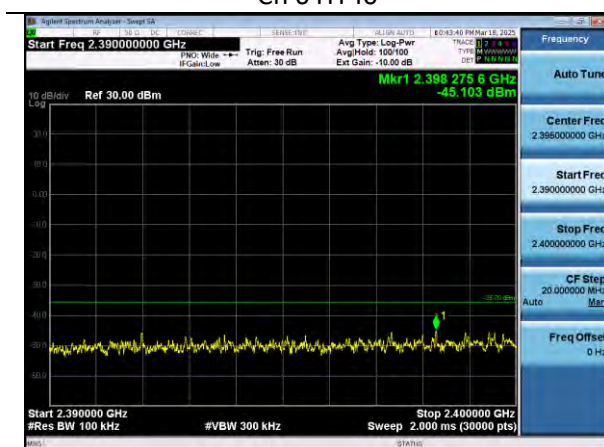
Company: DEKA Research	Page 28 of 44	Name: BD Neo Infusion Pump
Report: TR3871A		Model: BD Neo PCU: 9200 BD Neo Pump Module: 9210
Job: C-3871		Serial: 03010574, 03010575, 03010576, 03010615



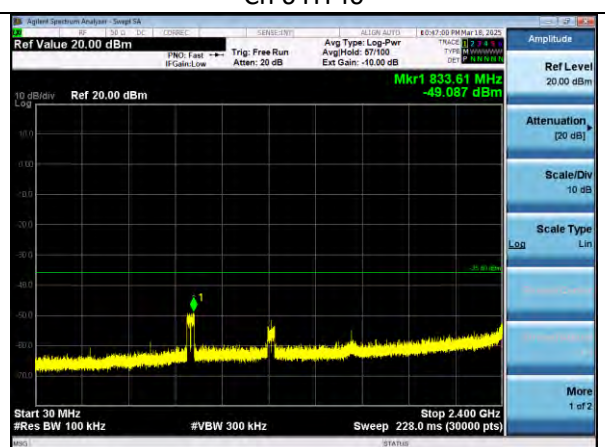
30-2400 MHz
Ch 6 HT40



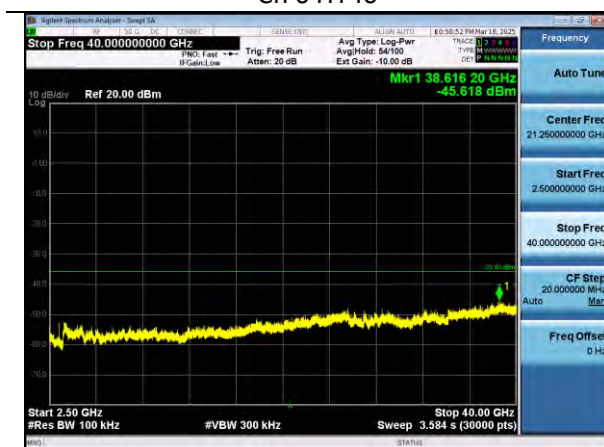
2500-40000 MHz
Ch 6 HT40



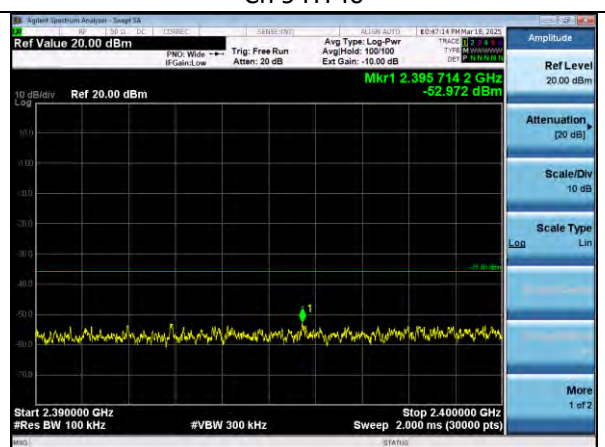
2390-2400 MHz
Ch 6 HT40



30-2400 MHz
Ch 9 HT40



2500-40000 MHz
Ch 9 HT40



2390-2400 MHz
Ch 9 HT40

Company: DEKA Research	Page 29 of 44	Name: BD Neo Infusion Pump
Report: TR3871A		Model: BD Neo PCU: 9200 BD Neo Pump Module: 9210
Job: C-3871		Serial: 03010574, 03010575, 03010576, 03010615

5.1.6 Frequency Stability

Operator	Anthony Smith	QA	Jon Dilley
Temperature	21.8, 21.2°C	R.H. %	35.9, 34.7
Test Date	4/21/2025, 4/22/2025	Location	Temp Chamber
Requirement	FCC 2.1055 (d)	Method	ANSI C63.10

Limits:

Test Parameters

Frequency	2400-2483.5 MHz	Setup	Conducted
RBW	3 kHz	VBW	10 kHz
Detector(s)	Peak	Settings	Max Hold

EUT Parameters

Input Power	102, 120, 138 VAC	Mode	CW Transmit
Frequency	2400-2483.5 MHz	Channel	1, 6, 11

Table

V _{AC}	Radio	Center Frequency (Hz)
120	2.4G Ch 6	2436998043
120	2.4G Ch 1	2411998058
120	2.4G Ch 11	2461998056
102	2.4G Ch 6	2436998023
102	2.4G Ch 1	2412001313
102	2.4G Ch 11	2461999277
138	2.4G Ch 6	2436998620
138	2.4G Ch 1	2411998619
138	2.4G Ch 11	2461998708

Company: DEKA Research	Page 30 of 44	Name: BD Neo Infusion Pump
Report: TR3871A		Model: BD Neo PCU: 9200 BD Neo Pump Module: 9210
Job: C-3871		Serial: 03010574, 03010575, 03010576, 03010615

5.2 Radiated Emissions

Description of Measurement	The frequency spectrum is investigated for intentional and / or unintentional signals emanating from the EUT by use of a standardized test site and measurement antenna. The antenna, cable, pre-amp, and other necessary measurement system correction factors are loaded onto the EMI receiver / spectrum analyzer when the measurements are performed allowing the data to be gathered and reported as corrected values. The maximum emissions from the EUT are determined by turn-table azimuth rotation (360°) and scanning of the measurement antenna. Maximized levels are noted at degree values of azimuth, measurement antenna height, and measurement antenna polarity.
Example Calculations	Measurement (dBμV) + Cable factor (dB) + Other (dB) + Antenna Factor (dB/m) = Corrected Reading (dBμV/m) Margin (dB) = Limit (dBμV/m) - Corrected Reading (dBμV/m) Example at 4000 MHz: Reading = 40 dBμV + 3.4 dB + 0.9 dB + 6.5 dB/m = 50.8 dBμV/m Average Limit = 20 log (500) = 54 dBμV/m Margin = 54 dBμV/m - 50.8 dBμV/m = 3.2 dB

Block Diagram



5.2.1 Radiated Emissions

Operator	Anthony Smith	QA	Jon Dilley, Dylan Rosenfeldt
Temperature	23.2, 20.9, 23.0, 28.2, 23.8°C	R.H. %	27.9%, 30.8%, 23.6%, 20.6%, 25.6%
Test Date	2/27/2025, 3/19/2025, 3/21/2025, 3/31/2025, 4/11/2025	Location	Chamber 5, Chamber 3
Requirement	FCC 15.247 (d) FCC 15.209	Method	ANSI C63.10

Limits:

Frequency (MHz)	Quasi-Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Peak Limit (dBμV/m)
30-88	40.0	-	-
88-216	43.5	-	-
216-960	46.0	-	-
960-1000	54.0	-	-
1000-40000	-	54.0	74.0

Test Parameters

Frequency	30-40000 MHz	Distance	3m
Detector(s)	Peak, Quasi-Peak, Average	Table height	80cm Below 1 GHz 150cm Above 1 GHz
RBW	120 kHz Below 1 GHz 1 MHz Above 1 GHz	VBW	1.2 MHz Below 1 GHz 3 MHz Above 1 GHz (Peak)

Instrumentation

Asset #	Description	Manufacturer	Model #	Serial #	Date	Due Date	Status
AA 960007	Antenna - Double Ridge Horn	EMCO	3115	9311-4138	11/19/2024	11/19/2025	Active Calibration
AA 960081	Antenna - Double Ridge Horn	EMCO	3115	6907	1/8/2025	1/8/2026	Active Calibration
AA 960153	Filter - High Pass 2.4 GHz	KWM	HPF-L-14186	7272-04	4/3/2025	4/3/2026	Active Calibration
AA 960194	Antenna - Biconical	A.H. Systems, Inc.	SAS-540	780	12/9/2024	12/9/2025	Active Calibration
AA 960195	Antenna - Log Periodic	A.H. Systems, Inc.	SAS-512-2	557	11/22/2024	11/23/2025	Active Calibration
AA 960210	Antenna - Low Noise Amplifier	Mini-Circuits	ZVA-213X-S+	037101808	1/8/2025	1/8/2026	Active Calibration
AA 960220	Cable	A.H. Systems, Inc.	SAC-26G-6	552	1/28/2025	1/28/2026	Active Verification
EE 960203	Analyzer - EMI Receiver	Keysight	N9038A	MY56400072	4/2/2025	4/2/2026	Active Calibration
LSC-300	Cable	Chamber 3 Emissions	-	-	1/24/2025	1/24/2026	Active Verification
LSC-500	Cable	Chamber 5 Emissions	-	-	1/27/2025	1/27/2026	Active Verification

EUT Parameters

Input Power	120VAC 60 Hz	Mode	WLAN 2.4 Transmit
Channels	1, 6, 11 (20 MHz)	EUT	See Data Table for Modulations

Company: DEKA Research	Page 33 of 44	Name: BD Neo Infusion Pump
Report: TR3871A		Model: BD Neo PCU: 9200 BD Neo Pump Module: 9210
Job: C-3871		Serial: 03010574, 03010575, 03010576, 03010615

Table

Below 1 GHz Spurious

Channel	Modulation	Frequency (MHz)	Antenna Polarity	Height (cm)	Azimuth (degree)	Quasi-Peak Reading (dBμV/m)	Quasi-Peak Limit (dBμV/m)	Quasi-Peak Margin (dB)
6	802.11b	38.9	V	100	234	34.7	40.0	5.3
6	802.11b	98.5	V	253	142	21.6	43.5	21.9
6	802.11b	45.3	V	100	349	33.6	40.0	6.4
6	802.11b	813.1	H	100	129	39.8	46.0	6.2
1	802.11b	803.5	H	100	126	40.4	46.0	5.6
11	802.11b	820.2	H	100	129	35.0	46.0	11.0

Band Edge - Average

Channel	Modulation	Frequency (MHz)	Antenna Polarity	Height (cm)	Azimuth (degree)	Average Reading (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Radio Mode
1	b - 1 Mbps	2386.4	H	115	302	47.6	54.0	6.4	SISO
1	n - HT20	2390.0	H	115	302	46.0	54.0	8.0	SISO
11	b - 1 Mbps	2487.7	V	229	297	45.0	54.0	9.0	SISO
11	n - HT20	2483.6	V	229	297	44.9	54.0	9.1	SISO
1	n - HT20	2390.0	V	239	301	48.8	54.0	5.2	MIMO
11	n - HT20	2484.2	V	232	297	45.3	54.0	8.7	MIMO
3	n - HT20	2389.9	H	115	295	46.1	54.0	7.9	SISO
2	n - HT20	2390.0	H	116	299	45.5	54.0	8.5	SISO
10	n - HT20	2483.5	V	205	302	45.3	54.0	8.7	SISO
9	n - HT20	2483.5	V	206	305	46.4	54.0	7.6	SISO
3	n - HT40	2390.0	V	215	311	52.9	54.0	1.1	MIMO
9	n - HT40	2484.0	V	206	311	49.3	54.0	4.7	MIMO

Band Edge – Peak

Channel	Modulation	Frequency (MHz)	Antenna Polarity	Height (cm)	Azimuth (degree)	Peak Reading (dBμV/m)	Peak Limit (dBμV/m)	Peak Margin (dB)	Radio Mode
1	b - 1 Mbps	2386.6	H	115	302	55.7	74.0	18.3	SISO
1	n - HT20	2388.3	H	115	302	58.8	74.0	15.2	SISO
11	b - 1 Mbps	2486.9	V	229	297	54.8	74.0	19.2	SISO
11	n - HT20	2484.0	V	229	297	56.5	74.0	17.5	SISO
1	n - HT20	2389.7	V	239	301	62.1	74.0	11.9	MIMO
11	n - HT20	2485.2	V	232	297	57.0	74.0	17.0	MIMO
3	n - HT20	2388.5	H	115	295	63.7	74.0	10.3	SISO
2	n - HT20	2389.7	H	116	299	61.2	74.0	12.8	SISO
10	n - HT20	2485.3	V	205	302	58.6	74.0	15.4	SISO
9	n - HT20	2483.8	V	206	305	67.0	74.0	7.1	SISO
3	n - HT40	2386.6	V	215	311	63.0	74.0	11.0	MIMO
9	n - HT40	2494.8	V	206	311	60.7	74.0	13.3	MIMO

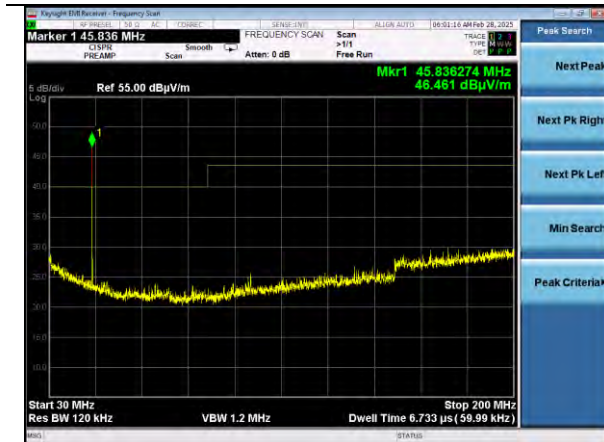
Above 1 GHz – Spurious Average

Frequency (MHz)	Antenna Polarity	Height (cm)	Azimuth (degree)	Average Reading (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Radio Mode
4874.0	H	385	346	40.1	54.0	13.9	802.11b 1M Ch 6
4874.0	V	187	75	40.8	54.0	13.3	802.11b 1M Ch 6
7310.2	H	160	335	35.8	54.0	18.2	802.11b 1M Ch 6
7310.2	V	152	48	36.7	54.0	17.3	802.11b 1M Ch 6
7235.1	H	150	312	33.9	54.0	20.1	802.11b 1M Ch 1
7235.2	V	143	13	36.4	54.0	17.6	802.11b 1M Ch 1
7387.0	H	159	334	35.0	54.0	19.0	802.11b 1M Ch 11
7387.8	V	150	46	35.6	54.0	18.4	802.11b 1M Ch 11
4824.0	H	145	345	40.8	54.0	13.3	802.11b 1M Ch 1
4824.0	V	182	77	41.0	54.0	13.0	802.11b 1M Ch 1

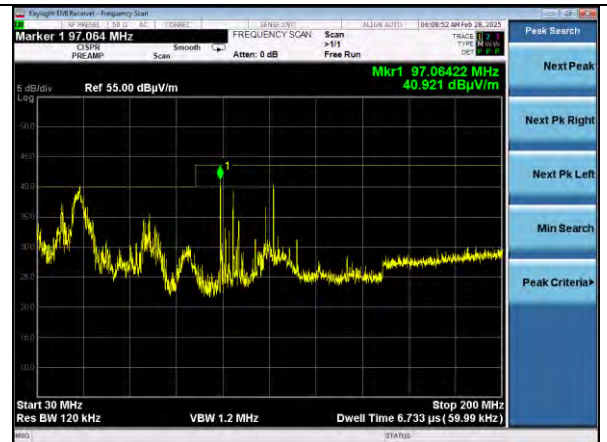
Above 1 GHz – Spurious Peak

Frequency (MHz)	Antenna Polarity	Height (cm)	Azimuth (degree)	Peak Reading (dBμV/m)	Peak Limit (dBμV/m)	Peak Margin (dB)	Radio Mode
4874.0	H	385	346	45.2	74.0	28.9	802.11b 1M Ch 6
4874.1	V	187	75	44.9	74.0	29.1	802.11b 1M Ch 6
7309.9	H	160	335	44.5	74.0	29.6	802.11b 1M Ch 6
7310.6	V	152	48	44.6	74.0	29.4	802.11b 1M Ch 6
7234.5	H	150	312	43.4	74.0	30.6	802.11b 1M Ch 1
7235.0	V	143	13	44.9	74.0	29.1	802.11b 1M Ch 1
7387.1	H	159	334	44.7	74.0	29.3	802.11b 1M Ch 11
7386.3	V	150	46	44.5	74.0	29.5	802.11b 1M Ch 11
4824.1	H	145	345	45.7	74.0	28.3	802.11b 1M Ch 1
4823.9	V	182	77	45.4	74.0	28.6	802.11b 1M Ch 1

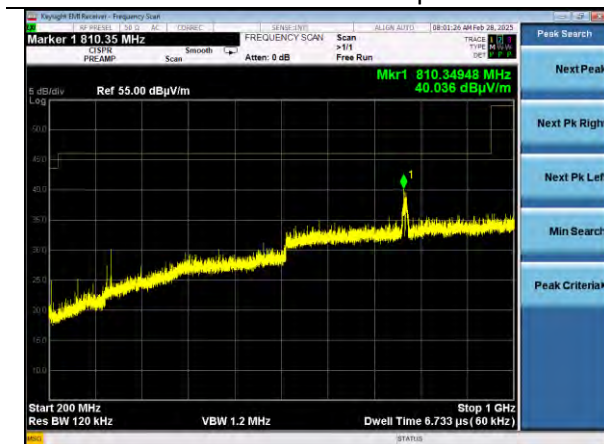
Worst Case Plots



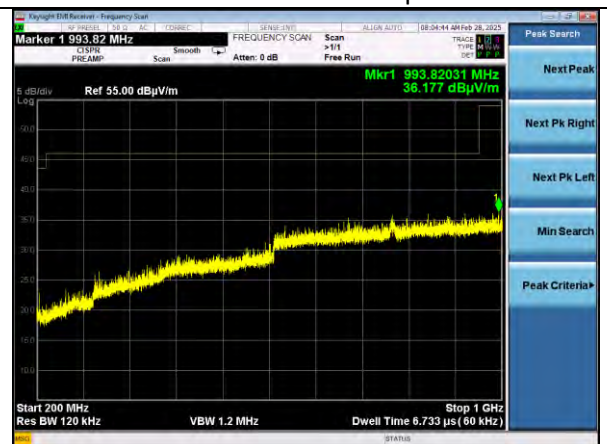
30-200 MHz Horizontal
Ch 6 802.11b 1 Mbps



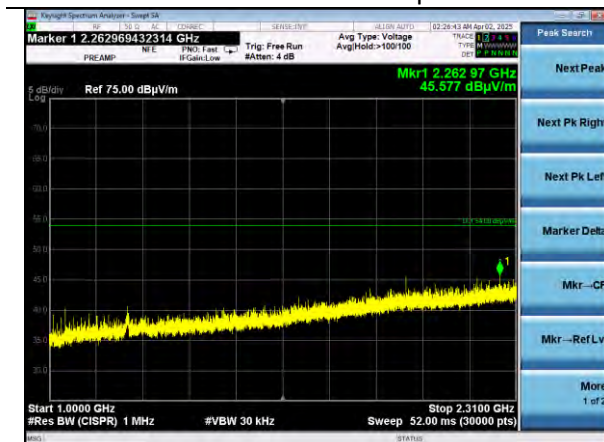
30-200 MHz Vertical
Ch 6 802.11b 1 Mbps



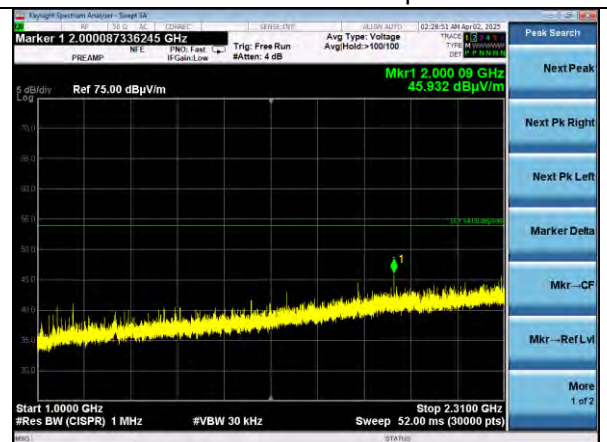
200-1000 MHz Horizontal
Ch 6 802.11b 1 Mbps



200-1000 MHz Vertical
Ch 6 802.11b 1 Mbps

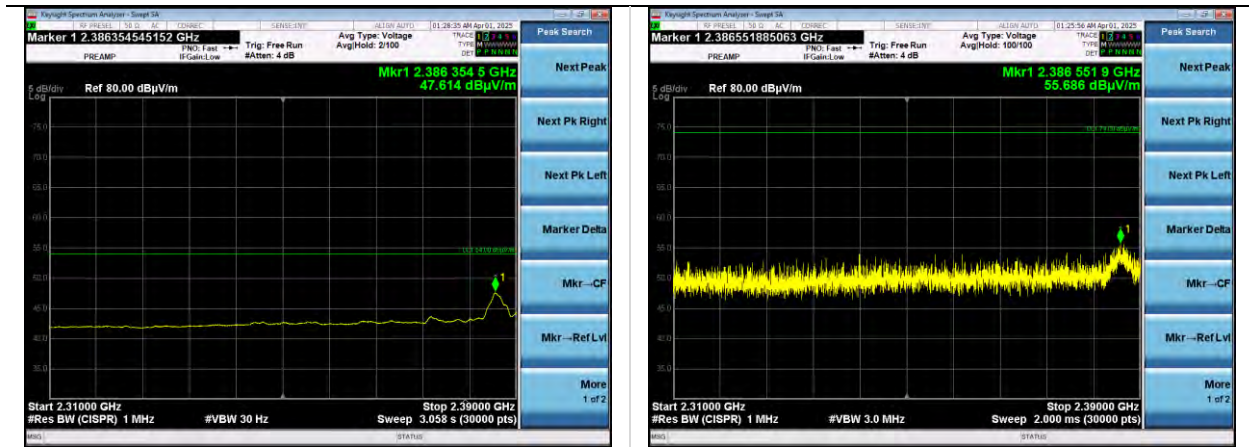


1000-2310 MHz Horizontal
Ch 6 802.11b 1 Mbps



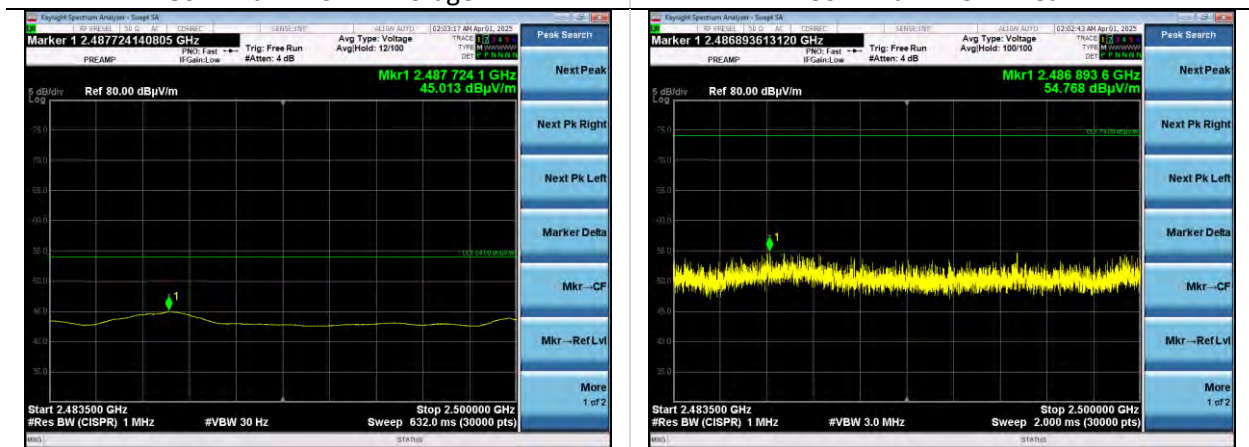
1000-2310 MHz Vertical
Ch 6 802.11b 1 Mbps

Company: DEKA Research		Name: BD Neo Infusion Pump
Report: TR3871A		Model: BD Neo PCU: 9200
Job: C-3871	Page 37 of 44	BD Neo Pump Module: 9210
		Serial: 03010574, 03010575, 03010576, 03010615



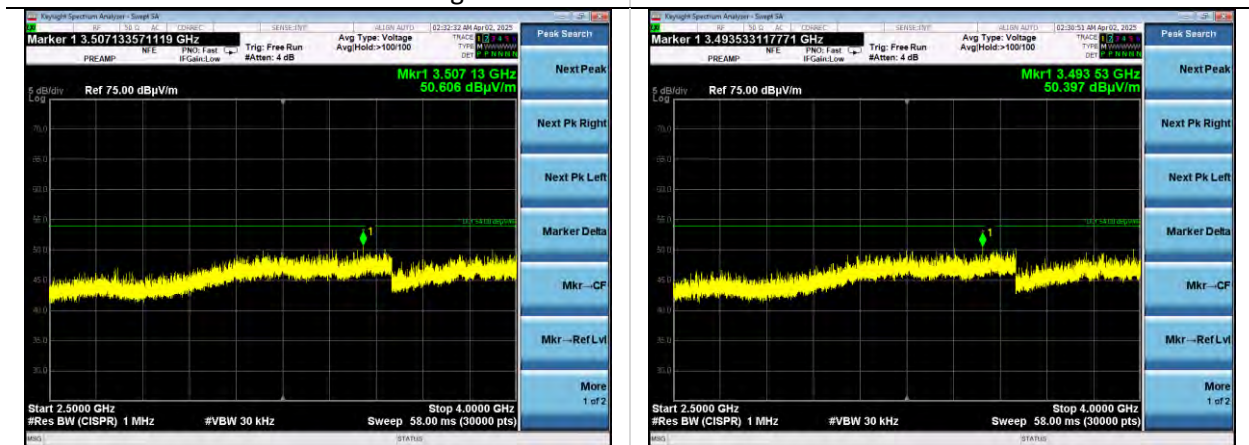
2310-2390 MHz
802.11b 1M Ch 1 Average

2310-2390 MHz
802.11b 1M Ch 1 Peak



2483.5-2500 MHz
802.11b 1M Ch 11 Average

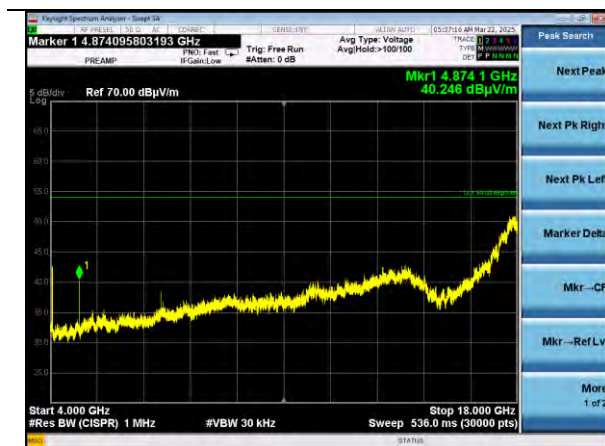
2483.5-2500 MHz
802.11b 1M Ch 11 Peak



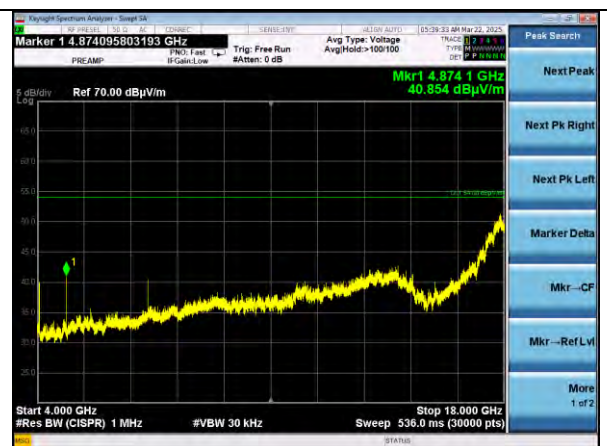
2500-4000 MHz Horizontal
Ch 6 802.11b 1 Mbps

2500-4000 MHz Vertical
Ch 6 802.11b 1 Mbps

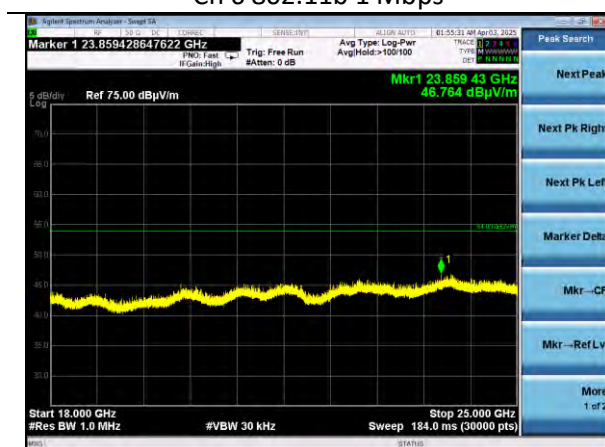
Company: DEKA Research	Page 38 of 44	Name: BD Neo Infusion Pump
Report: TR3871A		Model: BD Neo PCU: 9200 BD Neo Pump Module: 9210
Job: C-3871		Serial: 03010574, 03010575, 03010576, 03010615



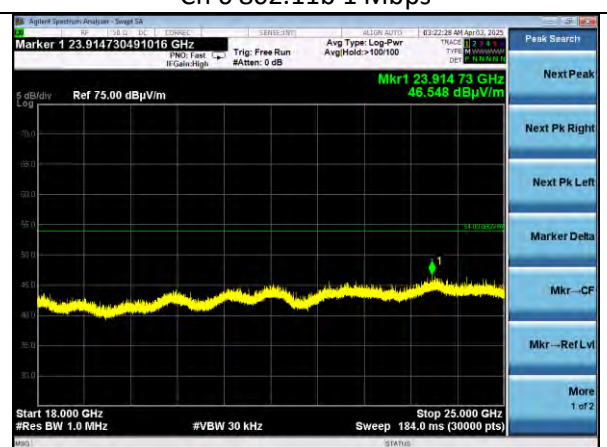
4-18 GHz Horizontal
 Ch 6 802.11b 1 Mbps



4-18 GHz Vertical
 Ch 6 802.11b 1 Mbps

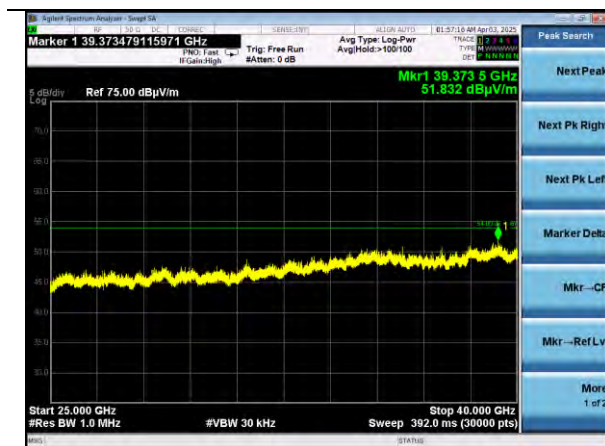


18-25 GHz Horizontal
 Ch 6 802.11b 1 Mbps

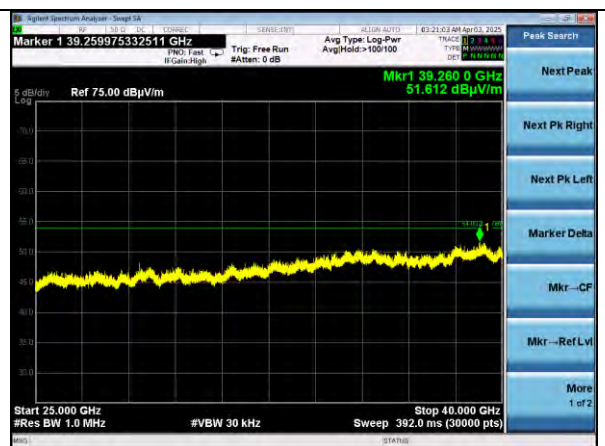


18-25 GHz Vertical
 Ch 6 802.11b 1 Mbps

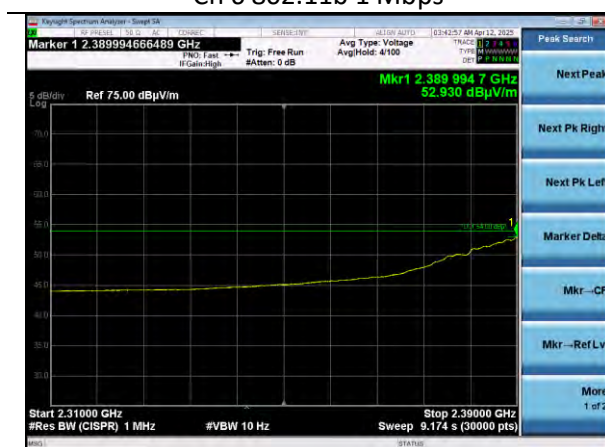
Company: DEKA Research	Page 39 of 44	Name: BD Neo Infusion Pump
Report: TR3871A		Model: BD Neo PCU: 9200 BD Neo Pump Module: 9210
Job: C-3871		Serial: 03010574, 03010575, 03010576, 03010615



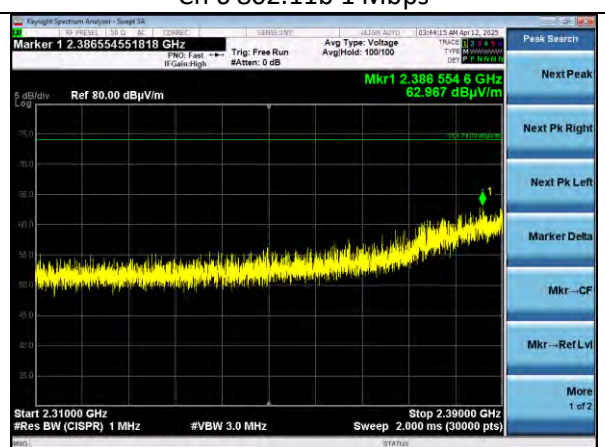
25-40 GHz Horizontal
Ch 6 802.11b 1 Mbps



25-40 GHz Vertical
Ch 6 802.11b 1 Mbps



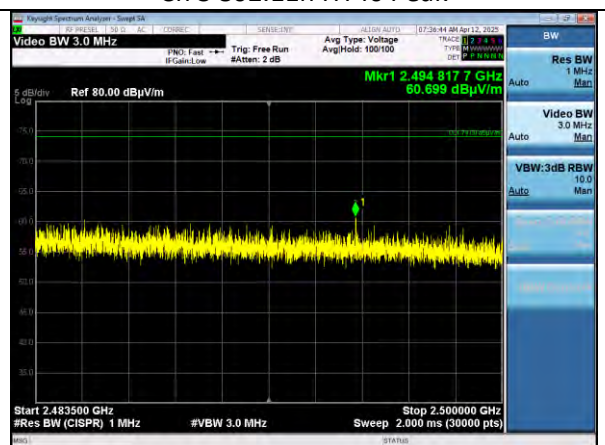
2310-2390 MHz
Ch 3 802.11n HT40 Average



2310-2390 MHz
Ch 3 802.11n HT40 Peak



2483.5-2500 MHz
Ch 9 802.11n HT40 Average



2483.5-2500 MHz
Ch 9 802.11n HT40 Peak

Company: DEKA Research	Page 40 of 44	Name: BD Neo Infusion Pump
Report: TR3871A		Model: BD Neo PCU: 9200 BD Neo Pump Module: 9210
Job: C-3871		Serial: 03010574, 03010575, 03010576, 03010615

5.3 AC Mains Conducted Emissions

A line impedance stabilization network (LISN) or artificial mains network (AMN) allows the emissions of the power supply conductors to be measured while isolating the EUT from the supply mains.

Description of Measurement

The AMN, cable, and other necessary measurement system correction factors are loaded onto the EMI receiver when the measurements are performed. The data is gathered and reported as the corrected values.

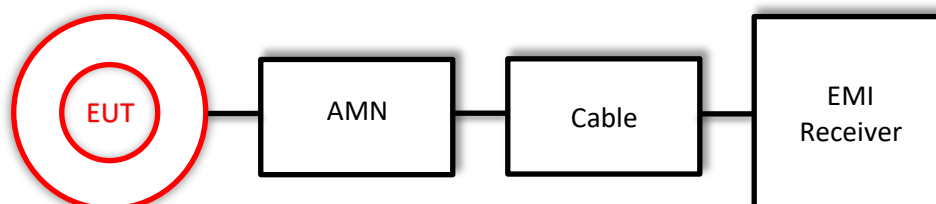
Maximum emissions are determined with a peak max hold trace then measurements at a selection of the highest points are made with quasi-peak and average detectors. Results are recorded and compared to limit for each line. (e.g. line and neutral)

Example Calculations

Measurement (dBμV) + Cable factor (dB) + Other (dB) = Corrected Reading (dBμV)

Margin (dB) = Limit (dBμV) - Corrected Reading (dBμV)

Block Diagram



5.3.1 AC Mains Conducted Emissions

Operator	Anthony Smith	QA	Dylan Rosenfeldt
Temperature	21.7, 21.2°C	R.H. %	30.0, 35.9%
Test Date	4/17/2025, 4/23/2025	Location	Conducted Bench
Requirement	FCC 15.207	Method	ANSI C63.10

Limits:

Frequency (MHz)	Quasi-Peak Limit (dBμV)	Average Limit (dBμV)
0.15-0.5	66.0-56.0*	56.0-46.0*
0.5-5	56.0	46.0
5-30	60.0	50.0

*Decreases with the logarithm of the frequency.

Test Parameters

Frequency	150 kHz - 30 MHz	Distance	80cm EUT to LISN
Detector(s)	Peak, QP, Avg	Table height	80cm
RBW	9 kHz	VBW	62 kHz

Instrumentation

Asset #	Description	Manufacturer	Model #	Serial #	Date	Due Date	Status
EE 960088	Analyzer - EMI Receiver	Agilent	N9038A	MY51210138	12/10/2024	12/10/2025	Active Calibration
EE 960089	LISN	COM-POWER	LI-215A	191943	3/31/2025	3/31/2026	Active Calibration
LSC-203	Cable	Micro-Coax	UFB311A-0-1440-70U70U	64639 224071-005	1/29/2025	1/29/2026	Active Verification

EUT Parameters

Input Power	120VAC 60Hz	Mode	Transmit
Channel	6 (2437 MHz)		
Notes	See TR3871C for details on RFID antenna terminated.		

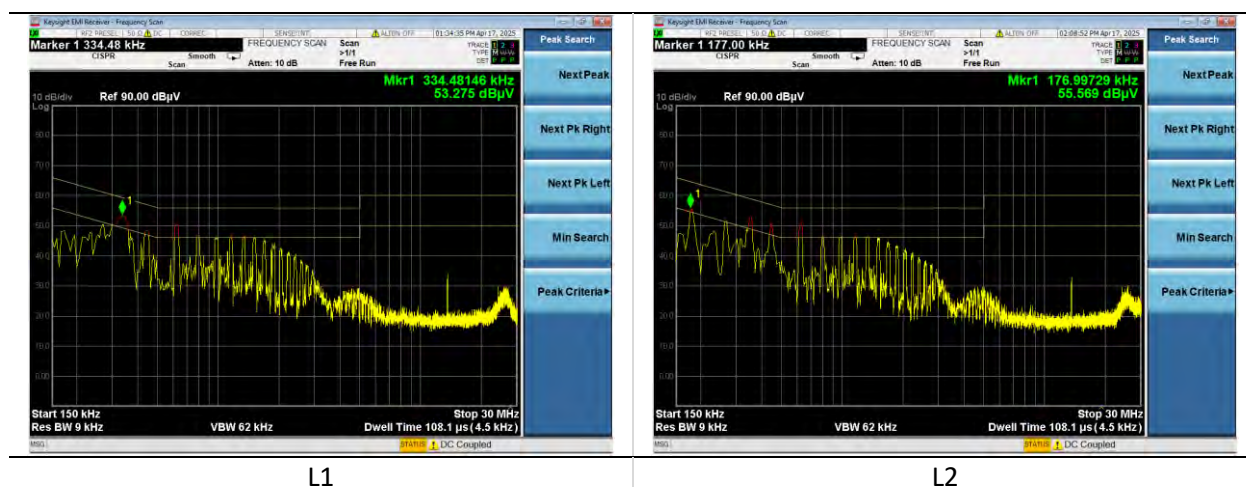
Company: DEKA Research	Page 42 of 44	Name: BD Neo Infusion Pump
Report: TR3871A		Model: BD Neo PCU: 9200 BD Neo Pump Module: 9210
Job: C-3871		Serial: 03010574, 03010575, 03010576, 03010615

Table

WLAN 2.4G Transmit Channel 6 802.11b 1Mbps

Line	Frequency (MHz)	Peak Reading (dBμV)	Quasi-Peak Reading (dBμV)	Average Reading (dBμV)	Quasi-Peak Limit (dBμV)	Average Limit (dBμV)	Quasi-Peak Margin (dB)
L1	13.697	49.2	41.8	22.8	60.0	50.0	18.2
L1	0.173	58.0	55.2	35.1	64.8	54.8	9.6
L1	0.339	56.8	52.2	37.3	59.2	49.2	7.0
L2	0.168	59.0	56.7	38.3	65.1	55.1	8.4
L2	0.254	53.4	51.6	46.8	61.6	51.6	10.0
L2	0.420	51.7	49.1	43.6	57.5	47.5	8.4

Plots



6 REVISION HISTORY

Version	Date	Notes	Person
0	5/21/2025	Initial Draft	Anthony Smith
0.1	6/9/2025	Revised Draft	Anthony Smith
0.2	6/12/2025	Revisions to Client Information	Anthony Smith
0.3	6/17/2025	Further Revisions	Anthony Smith
1.0	6/24/2025	Client requested release prior to TCB review	Anthony Smith
1.1	7/24/2025	Typo Fixed	Anthony Smith
1.2	9/4/2025	Client info updated	Anthony Smith
1.3	11/19/2025	References updated	Anthony Smith

END OF REPORT

Company: DEKA Research	Page 44 of 44	Name: BD Neo Infusion Pump
Report: TR3871A		Model: BD Neo PCU: 9200 BD Neo Pump Module: 9210
Job: C-3871		Serial: 03010574, 03010575, 03010576, 03010615