



## Conducted Emissions, FCC Part 15

Manufacturer:	Boundary Devices	Project Number:	B30933
Customer Representative:	Pejman Kalkhoran	Test Area:	10M #1
Model:	Nitrogen6X	S/N:	Proto 1
Standard Referenced:	FCC Part 15, Class A	Date:	September 26, 2013
Temperature:	23°C	Humidity:	31%
Input Voltage:	120Vac/60Hz	Pressure:	830 mb
Configuration of Unit:	Video playback mode		
Test Engineer:	Mike Tidquist		

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Type	Frequency (MHz)	Level (dBuV)	Transducer (dB)	Gain / Loss (dB)	Final (dBuV)	Test Point	Margin: FCC Class A AV (dB)	Margin: FCC Class A QP (dB)
AV	0.192	23.4	-0.8	16.1	38.8	Line 1	27.23	-
QP	0.192	35.5	-0.8	16.1	50.8	Line 1	-	28.19
AV	0.254	16.9	-0.5	16.1	32.5	Line 1	33.49	-
QP	0.254	28.6	-0.5	16.1	44.1	Line 1	-	34.86
AV	0.351	12.8	-0.3	16.1	28.5	Line 1	37.50	-
QP	0.351	29.0	-0.3	16.1	44.8	Line 1	-	34.22
AV	0.381	13.8	-0.3	16.1	29.5	Line 1	36.47	-
QP	0.381	29.6	-0.3	16.1	45.4	Line 1	-	33.65
AV	3.879	11.8	-0.2	16.2	27.8	Line 1	32.16	-
QP	3.879	20.1	-0.2	16.2	36.1	Line 1	-	36.91
AV	16.674	6.3	0.2	15.7	22.3	Line 1	37.72	-
QP	16.674	13.7	0.2	15.7	29.6	Line 1	-	43.42
AV	0.191	24.2	-0.8	16.1	39.6	Neutral	26.44	-
QP	0.191	36.2	-0.8	16.1	51.5	Neutral	-	27.53
AV	0.280	14.8	-0.5	16.1	30.4	Neutral	35.56	-
QP	0.280	29.2	-0.5	16.1	44.9	Neutral	-	34.15
AV	0.351	13.5	-0.3	16.1	29.3	Neutral	36.75	-
QP	0.351	31.4	-0.3	16.1	47.2	Neutral	-	31.83
AV	0.386	14.7	-0.3	16.1	30.4	Neutral	35.56	-
QP	0.386	29.1	-0.3	16.1	44.9	Neutral	-	34.11
AV	3.929	9.7	-0.2	16.2	25.7	Neutral	34.31	-
QP	3.929	17.5	-0.2	16.2	33.5	Neutral	-	39.54
AV	17.000	9.2	0.2	15.7	25.1	Neutral	34.90	-
QP	17.000	17.4	0.2	15.7	33.3	Neutral	-	39.71

The highest emission measured was at **0.191 MHz**, which was **26.44 dB** below the limit.

- “Type” refers to the type of measurement performed. The type of measurement made is based on the requirements of the particular standard:
  - PK = Peak Measurement: RBW is 9 kHz, VBW is 3 MHz
  - QP = Quasi-Peak Measurement: RBW is 9 kHz, VBW is 3 MHz, and QP Detection is ENABLED
  - AV = Video Average Measurement: RBW is 9 kHz, VBW is 10 Hz
- The “Final” emissions level is attained by taking the “Level” and adding the “Transducer” factor and the “Gain/Loss” factor. (Sample Calculation:  $40.2 \text{ dBuV} + 1.6 \text{ dB} + 16.3 \text{ dB} = 58.1 \text{ dBuV}$ . **Important Note:** This is a sample calculation only for the purpose of demonstration, and does not reflect data in this report.)
- The “TestPoint” indicates which AC or DC input power line or which I/O cable the measurement was made on.
- The “Margin” is with reference to the emissions limit. A positive number indicates that the emission measurement is below the limit. A negative number indicates that the emission measurement exceeds the limit.
- The PRESCAN is a peak measurement and is performed with the RBW set to 9 kHz, and the VBW set to 3 MHz



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Model:	Nitrogen6X	S/N:	Proto 1
Standard Referenced:	FCC Part 15, Class A	Date:	September 26, 2013

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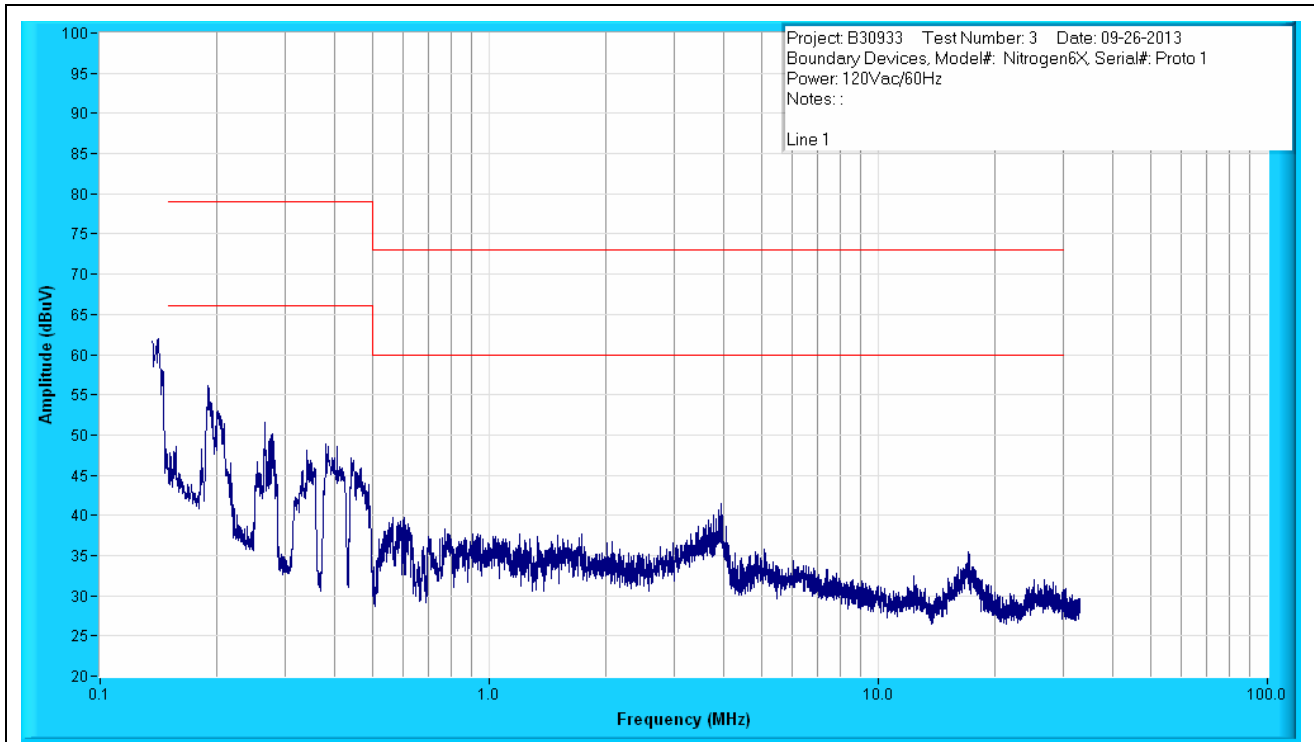


Figure B1: Conducted Emissions Prescan, Line 1, 0.150MHz to 30MHz, Peak Measurements



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Standard Referenced:	FCC Part 15, Class A	Date:	September 26, 2013

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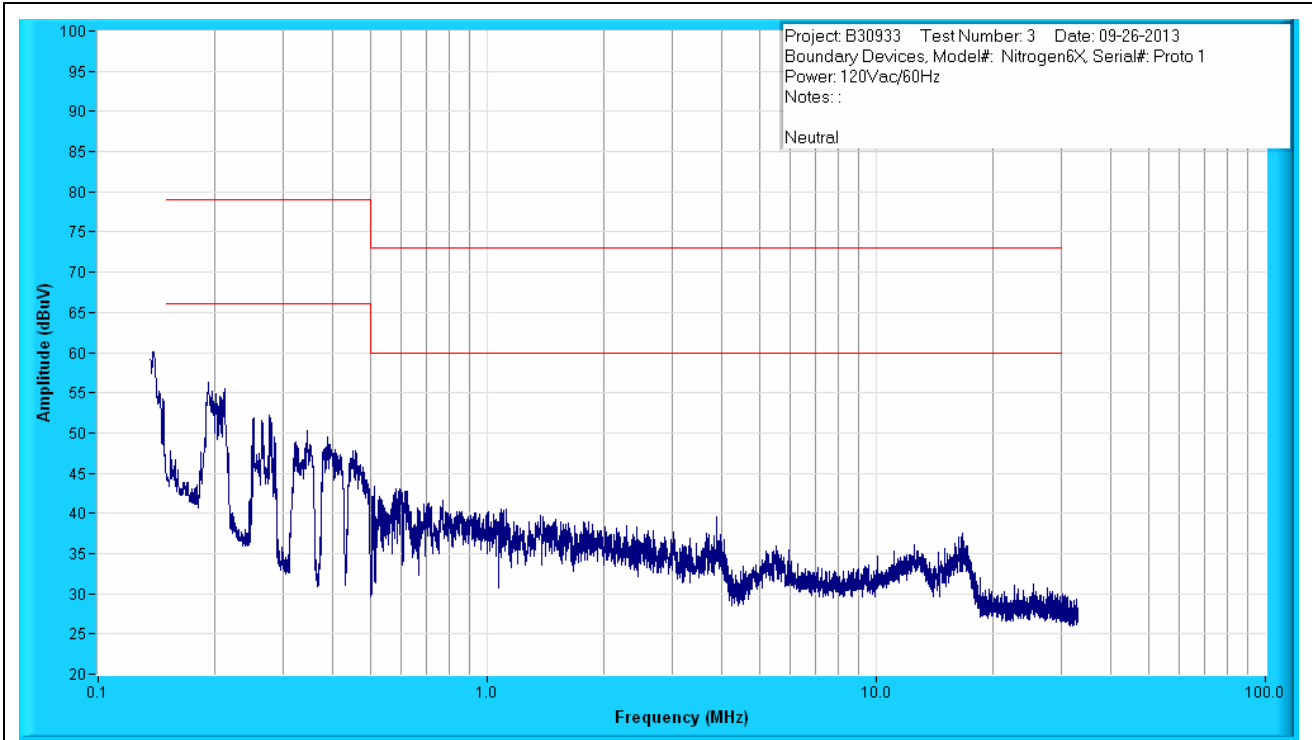


Figure B2: Conducted Emissions Prescan, Neutral, 0.150MHz to 30MHz, Peak Measurements



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Model:	<u>Nitrogen6X</u>	S/N:	<u>Proto 1</u>
Standard Referenced:	<u>FCC Part 15, Class A</u>	Date:	<u>September 26, 2013</u>

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Figure B3: Conducted Emissions Test Setup – Front Side



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## Conducted Emissions, FCC Part 15

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Manufacturer: Boundary Devices  
Customer Representative: Pejman Kalkhoran  
Model: Nitrogen6X  
Standard Referenced: FCC Part 15, Class A

Project Number: B30933  
Test Area: 10M #1  
S/N: Proto 1  
Date: September 26, 2013

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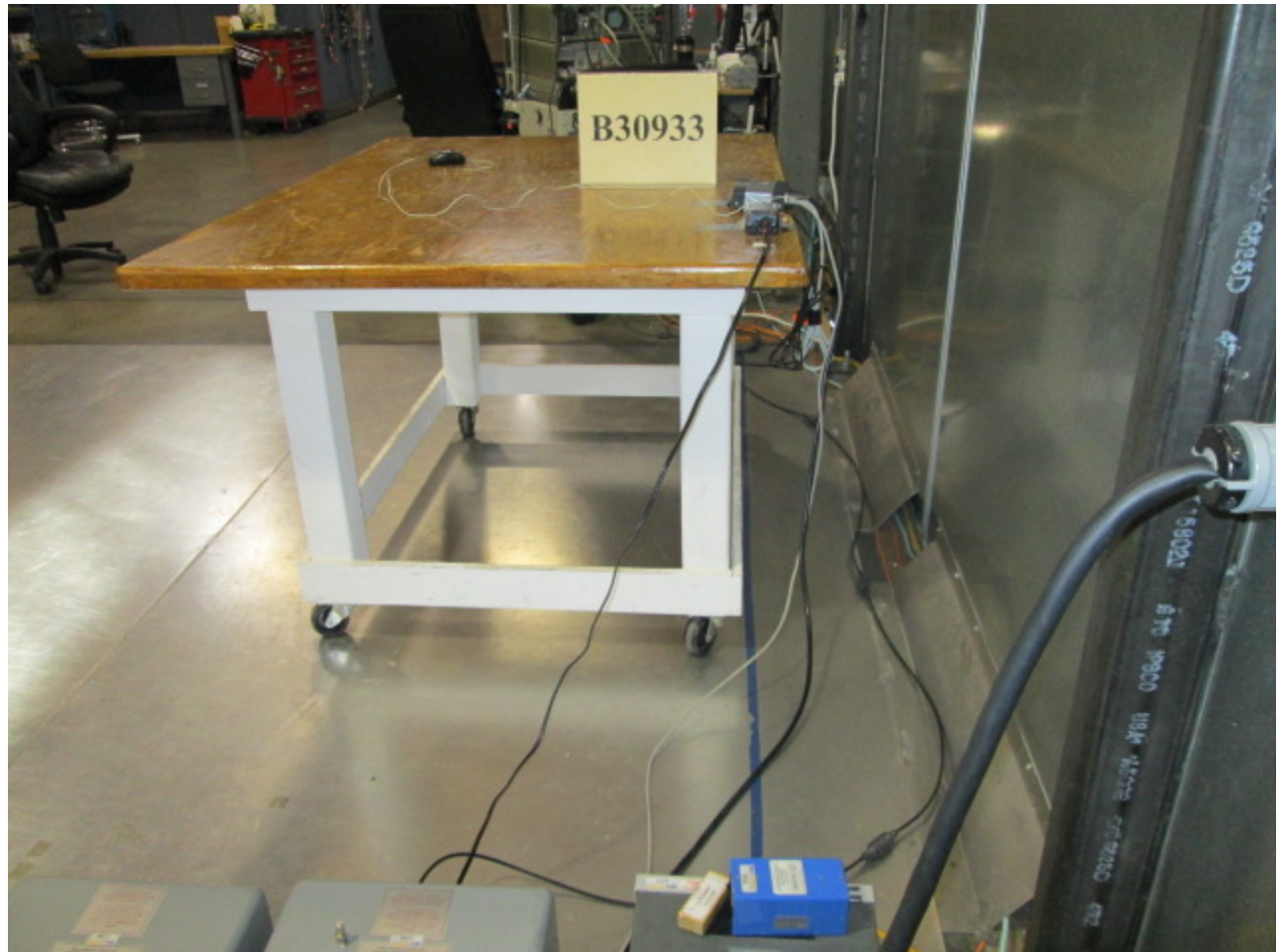


Figure B4: Conducted Emissions Test Setup – Right Side





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## Conducted Emissions, FCC Part 15

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Manufacturer: Boundary Devices  
Customer Representative: Pejman Kalkhoran  
Model: Nitrogen6X  
Standard Referenced: FCC Part 15, Class A

Project Number: B30933  
Test Area: 10M #1  
S/N: Proto 1  
Date: September 26, 2013

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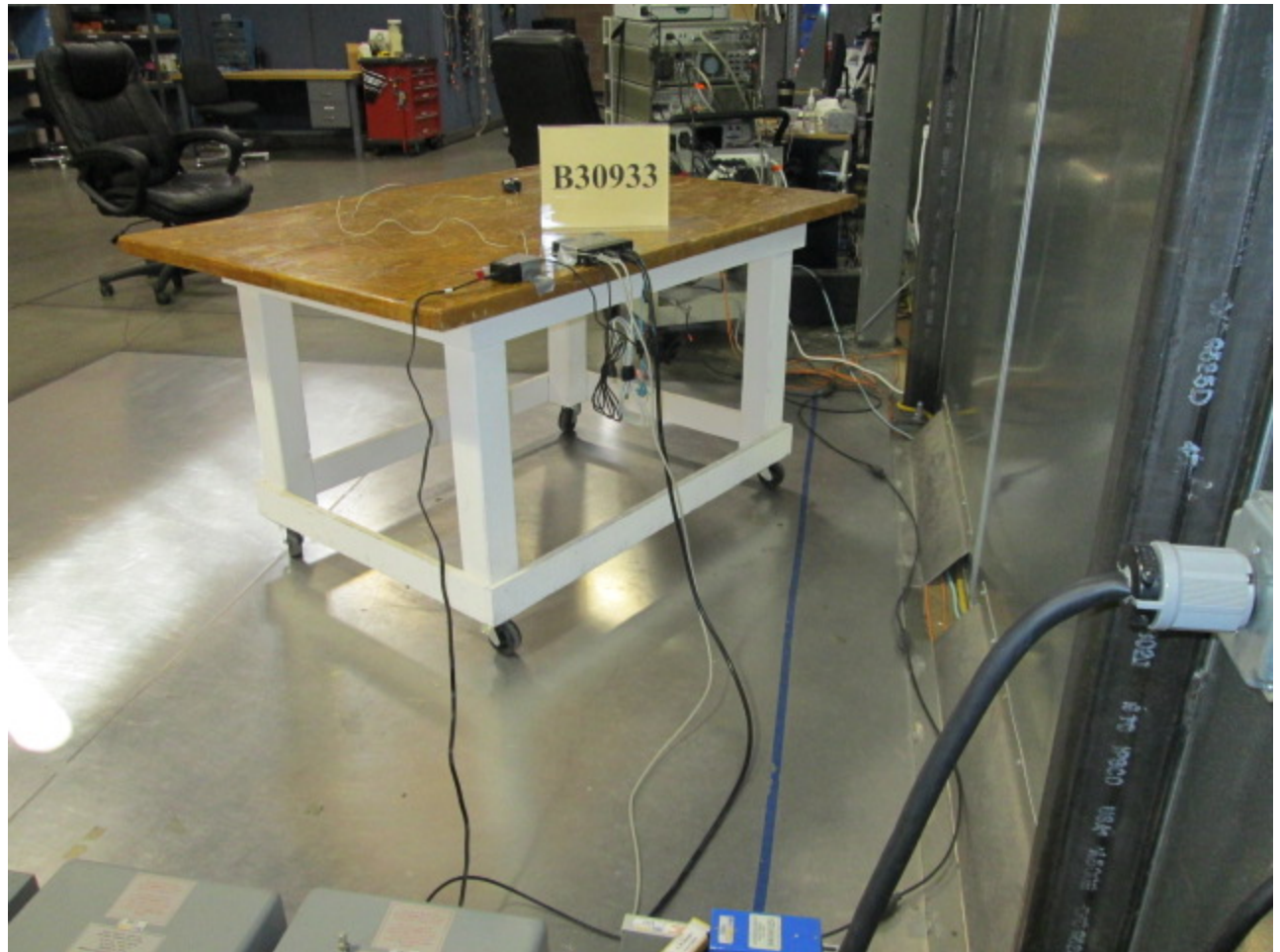


Figure B5: Conducted Emissions Test Setup – Back Side



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Customer Representative:	<u>Pejman Kalkhoran</u>	Test Area:	<u>10M #1</u>
Model:	<u>Nitrogen6X</u>	S/N:	<u>Proto 1</u>
Standard Referenced:	<u>FCC Part 15, Class A</u>	Date:	<u>September 26, 2013</u>

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Figure B6: Conducted Emissions Test Setup – Left Side






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Model:	<u>Nitrogen6X</u>	S/N:	<u>Proto 1</u>
Standard Referenced:	<u>FCC Part 15, Class A</u>	Date:	<u>September 26, 2013</u>

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**Test Equipment List**

ID Number	Manufacturer	Model #	Serial #	Description	Cal Date	Cal Due
1017	Pacific Power	TMX 140	0256	4 kVA, 50 Hz Power Source	NA	NA
1195	Solar	9252-50-R-24-BNC	042013	LISN	04/10/2013	04/10/2014
1200	Agilent Technology	11947A	3107A03807	Transient Limiter, 9 kHz to 200 MHz	01/21/2013	01/21/2014
1211	Solar	8131-24	863974	24kHz, 100 dB, High Pass Filter		
1223	Hewlett Packard	85650A	3303A01859	Quasi-Peak Adaptor	03/12/2013	03/12/2014
1332	Com-Power	CGC-510	311636	Conducted Comb Generator	NA	NA
1335	Hewlett Packard	85662A	2542A10937	Spectrum Analyzer Display	03/12/2013	03/12/2014
1336	Hewlett Packard	8566B	2532A02062	Spectrum Analyzer RF Section	03/12/2013	03/12/2014
1338	Hewlett Packard	85685A	3506A01551	RF Preselector	03/12/2013	03/12/2014
1405	EXTECH Instruments	445715	N/A	Hygro-Thermometer	08/06/2013	08/06/2014