

**HUM-900-PRO-CAS
ANT-916-CW-QW-RPS
Protocol A**

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol A - Module 4
ANT-916-CW-QW-RPS Antenna

Date: 01/28/2015
Lab: B
Tested By: Kenneth Lee

Low Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1805.94								N/A - Not in Restricted Band and done via Conducted
2708.91	36.82	V	74	-37.18	Peak	2	180	
2708.91	25.08	V	54	-28.92	Avg	2	180	
3611.88	45.24	V	74	-28.76	Peak	1.75	200	
3611.88	40.8	V	54	-13.2	Avg	1.75	200	
4514.86	37.45	V	74	-36.55	Peak	1.5	170	
4514.86	24.51	V	54	-29.49	Avg	1.5	170	
5417.83	44.86	V	74	-29.14	Peak	1	270	
5417.83	32.32	V	54	-21.68	Avg	1	270	
6320.8								N/A - Not in Restricted Band and done via Conducted
7223.77								No Emissions Detected
8126.74								No Emissions Detected
9029.71								No Emissions Detected

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Low Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1805.94								N/A - Not in Restricted Band and done via Conducted
2708.91	40.26	V	74	-33.74	Peak	2	90	
2708.91	30.8	V	54	-23.2	Avg	2	90	
3611.88	49.51	V	74	-24.49	Peak	3.25	340	
3611.88	45.59	V	54	-8.41	Avg	3.25	340	
4514.86	40.22	V	74	-33.78	Peak	1.75	75	
4514.86	27.98	V	54	-26.02	Avg	1.75	75	
5417.83	49.69	V	74	-24.31	Peak	1.25	45	
5417.83	33.39	V	54	-20.61	Avg	1.25	45	
6320.8								N/A - Not in Restricted Band and done via Conducted
7223.77								No Emissions Detected
8126.74								No Emissions Detected
9029.71								No Emissions Detected

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Low Channel
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1805.94								N/A - Not in Restricted Band and done via Conducted
2708.91	41.13	V	74	-32.87	Peak	1.25	130	
2708.91	30.58	V	54	-23.42	Avg	1.25	130	
3611.88	49.87	V	74	-24.13	Peak	2.25	0	
3611.88	46.24	V	54	-7.76	Avg	2.25	0	
4514.86	42.85	V	74	-31.15	Peak	1.75	55	
4514.86	30.68	V	54	-23.32	Avg	1.75	55	
5417.83	50.87	V	74	-23.13	Peak	2.5	180	
5417.83	43.93	V	54	-10.07	Avg	2.5	180	
6320.8								N/A - Not in Restricted Band and done via Conducted
7223.77								No Emissions Detected
8126.74								No Emissions Detected
9029.71								No Emissions Detected

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Low Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1805.94								N/A - Not in Restricted Band and done via Conducted
2708.91	43.42	H	74	-30.58	Peak	1.25	160	
2708.91	37.58	H	54	-16.42	Avg	1.25	160	
3611.88	52.23	H	74	-21.77	Peak	1	45	
3611.88	49.08	H	54	-4.92	Avg	1	45	
4514.86	41.78	H	74	-32.22	Peak	1	15	
4514.86	28.76	H	54	-25.24	Avg	1	15	
5417.83	49.27	H	74	-24.73	Peak	1.5	60	
5417.83	40.17	H	54	-13.83	Avg	1.5	60	
6320.8								N/A - Not in Restricted Band and done via Conducted
7223.77								No Emissions Detected
8126.74								No Emissions Detected
9029.71								No Emissions Detected

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**Low Channel
Transmit Mode - Y-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1805.94								N/A - Not in Restricted Band and done via Conducted
2708.91	41.46	H	74	-32.54	Peak	1.75	20	
2708.91	33.63	H	54	-20.37	Avg	1.75	20	
3611.88	46	H	74	-28	Peak	1	270	
3611.88	39.89	H	54	-14.11	Avg	1	270	
4514.86	43.87	H	74	-30.13	Peak	2	190	
4514.86	32.86	H	54	-21.14	Avg	2	190	
5417.83	52.47	H	74	-21.53	Peak	2.25	220	
5417.83	46.3	H	54	-7.7	Avg	2.25	220	
6320.8								N/A - Not in Restricted Band and done via Conducted
7223.77								No Emissions Detected
8126.74								No Emissions Detected
9029.71								No Emissions Detected

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Low Channel
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1805.94								N/A - Not in Restricted Band and done via Conducted
2708.91	42.7	H	74	-31.3	Peak	1.5	160	
2708.91	36.49	H	54	-17.51	Avg	1.5	160	
3611.88	52.28	H	74	-21.72	Peak	1	180	
3611.88	49.54	H	54	-4.46	Avg	1	180	
4514.86	41.98	H	74	-32.02	Peak	1	170	
4514.86	28.73	H	54	-25.27	Avg	1	170	
5417.83	49.88	H	74	-24.12	Peak	1	345	
5417.83	40.99	H	54	-13.01	Avg	1	345	
6320.8								N/A - Not in Restricted Band and done via Conducted
7223.77								No Emissions Detected
8126.74								No Emissions Detected
9029.71								No Emissions Detected

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Middle Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1830								N/A - Not in Restricted Band and done via Conducted
2745	37.55	V	74	-36.45	Peak	2.5	180	
2745	24.93	V	54	-29.07	Avg	2.5	180	
3660	44.58	V	74	-29.42	Peak	1.75	200	
3660	39.99	V	54	-14.01	Avg	1.75	200	
4575	39.06	V	74	-34.94	Peak	1	90	
4575	24.48	V	54	-29.52	Avg	1	90	
5490	49.86	V	74	-24.14	Peak	1.75	180	
5490	43.67	V	54	-10.33	Avg	1.75	180	
6405								N/A - Not in Restricted Band and done via Conducted
7320								No Emissions Detected
8235								No Emissions Detected
9150								No Emissions Detected

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Middle Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1830								N/A - Not in Restricted Band and done via Conducted
2745	40.82	V	74	-33.18	Peak	1.5	125	
2745	25.87	V	54	-28.13	Avg	1.5	125	
3660	49.2	V	74	-24.8	Peak	1.75	0	
3660	45.65	V	54	-8.35	Avg	1.75	0	
4575	46.37	V	74	-27.63	Peak	2.25	90	
4575	39.56	V	54	-14.44	Avg	2.25	90	
5490	50.45	V	74	-23.55	Peak	1	45	
5490	40.49	V	54	-13.51	Avg	1	45	
6405								N/A - Not in Restricted Band and done via Conducted
7320								No Emissions Detected
8235								No Emissions Detected
9150								No Emissions Detected

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**Middle Channel
Transmit Mode - Z-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1830								N/A - Not in Restricted Band and done via Conducted
2745	39.61	V	74	-34.39	Peak	1.75	190	
2745	28.34	V	54	-25.66	Avg	1.75	190	
3660	44.84	V	74	-29.16	Peak	1	220	
3660	37.83	V	54	-16.17	Avg	1	220	
4575	45.72	V	74	-28.28	Peak	2.25	160	
4575	38.67	V	54	-15.33	Avg	2.25	160	
5490	50.78	V	74	-23.22	Peak	1.5	180	
5490	42.89	V	54	-11.11	Avg	1.5	180	
6405								N/A - Not in Restricted Band and done via Conducted
7320								No Emissions Detected
8235								No Emissions Detected
9150								No Emissions Detected

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Middle Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1830								N/A - Not in Restricted Band and done via Conducted
2745	40.56	H	74	-33.44	Peak	3	45	
2745	29.12	H	54	-24.88	Avg	3	45	
3660	45.24	H	74	-28.76	Peak	1	190	
3660	39.86	H	54	-14.14	Avg	1	190	
4575	42.33	H	74	-31.67	Peak	2.5	125	
4575	36.51	H	54	-17.49	Avg	2.5	125	
5490	49.16	H	74	-24.84	Peak	1.25	45	
5490	38.46	H	54	-15.54	Avg	1.25	45	
6405								N/A - Not in Restricted Band and done via Conducted
7320								No Emissions Detected
8235								No Emissions Detected
9150								No Emissions Detected

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Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1830								N/A - Not in Restricted Band and done via Conducted
2745	38.48	H	74	-35.52	Peak	1	100	
2745	24.85	H	54	-29.15	Avg	1	100	
3660	47.51	H	74	-26.49	Peak	1.75	180	
3660	40.22	H	54	-13.78	Avg	1.75	180	
4575	46.65	H	74	-27.35	Peak	2.25	200	
4575	39.47	H	54	-14.53	Avg	2.25	200	
5490	51.45	H	74	-22.55	Peak	2	90	
5490	42.28	H	54	-11.72	Avg	2	90	
6405								N/A - Not in Restricted Band and done via Conducted
7320								No Emissions Detected
8235								No Emissions Detected
9150								No Emissions Detected

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Linx Technologies
Hummingbird MCA Module
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**Middle Channel
Transmit Mode - Z-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1830								N/A - Not in Restricted Band and done via Conducted
2745	39.33	H	74	-34.67	Peak	1	200	
2745	28.45	H	54	-25.55	Avg	1	200	
3660	50.13	H	74	-23.87	Peak	1	90	
3660	44.54	H	54	-9.46	Avg	1	90	
4575	44.51	H	74	-29.49	Peak	1.75	160	
4575	36.27	H	54	-17.73	Avg	1.75	160	
5490	51.63	H	74	-22.37	Peak	1	200	
5490	42.76	H	54	-11.24	Avg	1	200	
6405								N/A - Not in Restricted Band and done via Conducted
7320								No Emissions Detected
8235								No Emissions Detected
9150								No Emissions Detected

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Date: 01/28/2015
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**High Channel
Transmit Mode - X-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1853.3								N/A - Not in Restricted Band and done via Conducted
2779.9	38.44	V	74	-35.56	Peak	1.5	180	
2779.9	25.13	V	54	-28.87	Avg	1.5	180	
3706.6	47.69	V	74	-26.31	Peak	1	90	
3706.6	38.16	V	54	-15.84	Avg	1	90	
4633.25	44.27	V	74	-29.73	Peak	1.5	225	
4633.25	39.04	V	54	-14.96	Avg	1.5	225	
5559.9	49.96	V	74	-24.04	Peak	2.25	135	
5559.9	40.08	V	54	-13.92	Avg	2.25	135	
6486.55								N/A - Not in Restricted Band and done via Conducted
7413.2								No Emissions Detected
8339.85								No Emissions Detected
9266.5								No Emissions Detected

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ANT-916-CW-QW-RPS Antenna

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**High Channel
Transmit Mode - Y-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1853.3								N/A - Not in Restricted Band and done via Conducted
2779.9	37.09	V	74	-36.91	Peak	3	135	
2779.9	24.16	V	54	-29.84	Avg	3	135	
3706.6	41.99	V	74	-32.01	Peak	1.75	180	
3706.6	30.45	V	54	-23.55	Avg	1.75	180	
4633.25	45.45	V	74	-28.55	Peak	2.25	260	
4633.25	32.58	V	54	-21.42	Avg	2.25	260	
5559.9	52.06	V	74	-21.94	Peak	1	90	
5559.9	44.26	V	54	-9.74	Avg	1	90	
6486.55								N/A - Not in Restricted Band and done via Conducted
7413.2								No Emissions Detected
8339.85								No Emissions Detected
9266.5								No Emissions Detected

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**High Channel
Transmit Mode - Z-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1853.3								N/A - Not in Restricted Band and done via Conducted
2779.9	38.46	V	74	-35.54	Peak	1.75	125	
2779.9	26.2	V	54	-27.8	Avg	1.75	125	
3706.6	46.64	V	74	-27.36	Peak	1	90	
3706.6	41.06	V	54	-12.94	Avg	1	90	
4633.25	44.42	V	74	-29.58	Peak	1.75	90	
4633.25	37.12	V	54	-16.88	Avg	1.75	90	
5559.9	51.03	V	74	-22.97	Peak	1.25	135	
5559.9	40.77	V	54	-13.23	Avg	1.25	135	
6486.55								N/A - Not in Restricted Band and done via Conducted
7413.2								No Emissions Detected
8339.85								No Emissions Detected
9266.5								No Emissions Detected

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**High Channel
Transmit Mode - X-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1853.3								N/A - Not in Restricted Band and done via Conducted
2779.9	40.7	H	74	-33.3	Peak	1.25	45	
2779.9	28.37	H	54	-25.63	Avg	1.25	45	
3706.6	50.22	H	74	-23.78	Peak	2.25	45	
3706.6	43.5	H	54	-10.5	Avg	2.25	45	
4633.25	44.86	H	74	-29.14	Peak	2	135	
4633.25	37.22	H	54	-16.78	Avg	2	135	
5559.9	49.92	H	74	-24.08	Peak	1	180	
5559.9	38.56	H	54	-15.44	Avg	1	180	
6486.55								N/A - Not in Restricted Band and done via Conducted
7413.2								No Emissions Detected
8339.85								No Emissions Detected
9266.5								No Emissions Detected

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**High Channel
Transmit Mode - Y-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1853.3								N/A - Not in Restricted Band and done via Conducted
2779.9	41.28	H	74	-32.72	Peak	2	90	
2779.9	29.64	H	54	-24.36	Avg	2	90	
3706.6	43.58	H	74	-30.42	Peak	2.5	15	
3706.6	36.07	H	54	-17.93	Avg	2.5	15	
4633.25	40.97	H	74	-33.03	Peak	1.75	90	
4633.25	31.05	H	54	-22.95	Avg	1.75	90	
5559.9	50.46	H	74	-23.54	Peak	1.75	345	
5559.9	42.11	H	54	-11.89	Avg	1.75	345	
6486.55								N/A - Not in Restricted Band and done via Conducted
7413.2								No Emissions Detected
8339.85								No Emissions Detected
9266.5								No Emissions Detected

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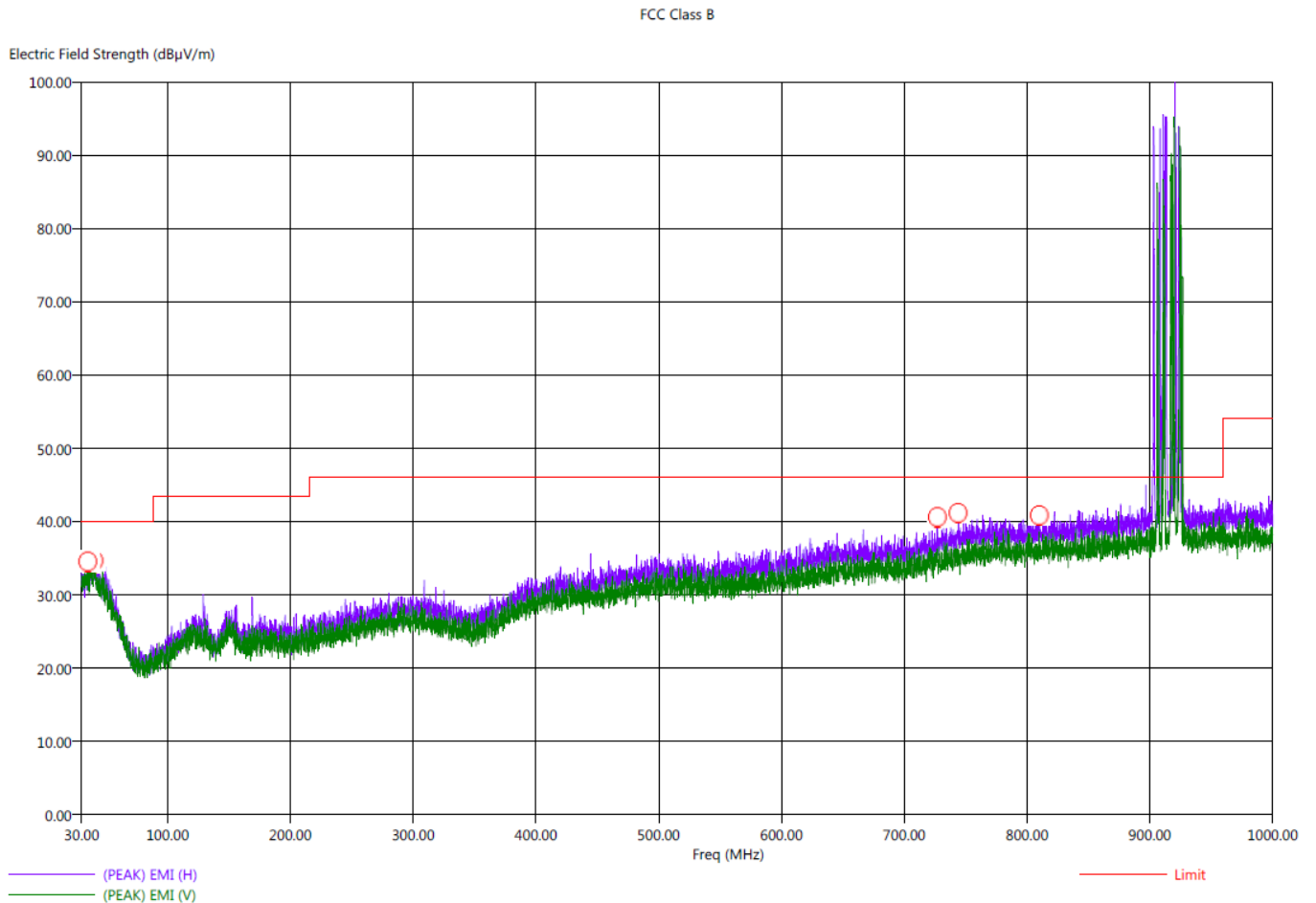
Date: 01/28/2015
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**High Channel
Transmit Mode - Z-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1853.3								N/A - Not in Restricted Band and done via Conducted
2779.9	43.67	H	74	-30.33	Peak	1	90	
2779.9	30.55	H	54	-23.45	Avg	1	90	
3706.6	50.97	H	74	-23.03	Peak	1.25	125	
3706.6	41.78	H	54	-12.22	Avg	1.25	125	
4633.25	45.19	H	74	-28.81	Peak	1	100	
4633.25	33.86	H	54	-20.14	Avg	1	100	
5559.9	51.37	H	74	-22.63	Peak	1	145	
5559.9	38.22	H	54	-15.78	Avg	1	145	
6486.55								N/A - Not in Restricted Band and done via Conducted
7413.2								No Emissions Detected
8339.85								No Emissions Detected
9266.5								No Emissions Detected

Title: Pre-Scan - FCC Class B
File: Agilent - Radiated Pre-Scan 30-1000Mhz - FCC Class B_Module_4_Protocol_A_ANT-916-CW-QW-RPS_X-Axis_02-05-2015.set
Operator: Kenneth Lee
EUT Type: Hummingbird MCA
EUT Condition: Continuously Transmitting - Frequency Hopping - Protocol A - Module 4 - X-Axis - Worst Case
Comments: Customer: Linx Technologies
M/N: HUM-900-PRO-CAS
Note: Antenna - ANT-916-CW-QW-RPS

2/5/2015 9:00:40 AM
Sequence: Preliminary Scan

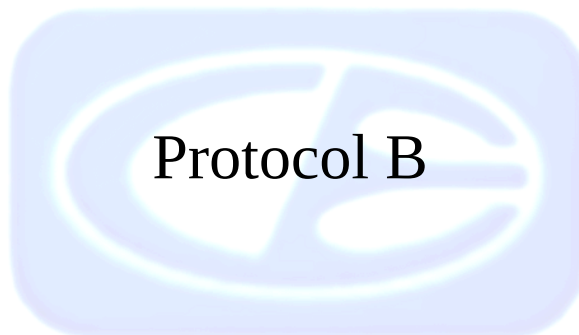


Title: Radiated Final - 30-1000 MHz - FCC Class B
File: Agilent - Radiated Final Scan 30-1000Mhz - FCC Class B_Module_4_Protocol_A_ANT-916-CW-QW-RPS_X-Axis_02-05-2015.set
Operator: Kenneth Lee
EUT Type: Hummingbird MCA
EUT Condition: Continuously Transmitting - Frequency Hopping - Protocol A - Module 4 - X-Axis - Worst Case
Comments: Customer: Linx Technologies
M/N: HUM-900-PRO-CAS
Note: Antenna - ANT-916-CW-QW-RPS

2/5/2015 9:39:39 AM
Sequence: Final Measurements

Final Scan - FCC Class B

Freq (MHz)	Pol	(PEAK) EMI (dBµV/m)	(QP) EMI (dBµV/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dBµV/m)	Transducer (dB)	Cable (dB)	Twr Ht (cm)	Ttbl Agl (deg)
35.10	V	35.15	30.84	-4.85	-9.16	40.00	23.75	0.40	223.55	171.00
39.50	H	35.44	31.34	-4.56	-8.66	40.00	24.17	0.43	142.59	359.00
40.10	V	35.82	31.28	-4.18	-8.72	40.00	24.18	0.43	127.25	96.75
727.00	H	39.50	35.33	-6.50	-10.67	46.00	24.92	2.32	111.37	98.50
743.80	H	40.03	36.02	-5.97	-9.98	46.00	25.64	2.35	385.70	84.25
810.00	H	41.08	36.79	-4.92	-9.21	46.00	26.00	2.40	304.02	105.75



FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-QW-RPS Antenna

Date: 01/29/2015
Lab: B
Tested By: Kenneth Lee

Low Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1805.94								N/A - Not in Restricted Band and done via Conducted
2708.91	40.28	V	74	-33.72	Peak	1.75	110	
2708.91	28.9	V	54	-25.1	Avg	1.75	110	
3611.88	51.16	V	74	-22.84	Peak	2.5	0	
3611.88	46.97	V	54	-7.03	Avg	2.5	0	
4514.86	42.82	V	74	-31.18	Peak	2.25	345	
4514.86	29.16	V	54	-24.84	Avg	2.25	345	
5417.83	51.52	V	74	-22.48	Peak	1	270	
5417.83	42.64	V	54	-11.36	Avg	1	270	
6320.8								N/A - Not in Restricted Band and done via Conducted
7223.77								No Emissions Detected
8126.74								No Emissions Detected
9029.71								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-QW-RPS Antenna

Date: 01/29/2015
Lab: B
Tested By: Kenneth Lee

Low Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1805.94								N/A - Not in Restricted Band and done via Conducted
2708.91	39.48	V	74	-34.52	Peak	2	180	
2708.91	28.3	V	54	-25.7	Avg	2	180	
3611.88	51.22	V	74	-22.78	Peak	2.25	15	
3611.88	47.17	V	54	-6.83	Avg	2.25	15	
4514.86	42.14	V	74	-31.86	Peak	1.75	0	
4514.86	28.07	V	54	-25.93	Avg	1.75	0	
5417.83	51.34	V	74	-22.66	Peak	1.25	190	
5417.83	43.55	V	54	-10.45	Avg	1.25	190	
6320.8								N/A - Not in Restricted Band and done via Conducted
7223.77								No Emissions Detected
8126.74								No Emissions Detected
9029.71								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-QW-RPS Antenna

Date: 01/29/2015
Lab: B
Tested By: Kenneth Lee

Low Channel
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1805.94								N/A - Not in Restricted Band and done via Conducted
2708.91	41.86	V	74	-32.14	Peak	1	240	
2708.91	31.69	V	54	-22.31	Avg	1	240	
3611.88	52.14	V	74	-21.86	Peak	1.25	200	
3611.88	48.35	V	54	-5.65	Avg	1.25	200	
4514.86	44.25	V	74	-29.75	Peak	1.25	90	
4514.86	31.6	V	54	-22.4	Avg	1.25	90	
5417.83	53.78	V	74	-20.22	Peak	1.5	90	
5417.83	47.36	V	54	-6.64	Avg	1.5	90	
6320.8								N/A - Not in Restricted Band and done via Conducted
7223.77								No Emissions Detected
8126.74								No Emissions Detected
9029.71								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-QW-RPS Antenna

Date: 01/29/2015
Lab: B
Tested By: Kenneth Lee

Low Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1805.94								N/A - Not in Restricted Band and done via Conducted
2708.91	42.7	H	74	-31.3	Peak	1.5	220	
2708.91	35.58	H	54	-18.42	Avg	1.5	220	
3611.88	53.12	H	74	-20.88	Peak	1.1	180	
3611.88	49.29	H	54	-4.71	Avg	1.1	180	
4514.86	42.23	H	74	-31.77	Peak	1.25	160	
4514.86	28.01	H	54	-25.99	Avg	1.25	160	
5417.83	52.86	H	74	-21.14	Peak	1	180	
5417.83	43.58	H	54	-10.42	Avg	1	180	
6320.8								N/A - Not in Restricted Band and done via Conducted
7223.77								No Emissions Detected
8126.74								No Emissions Detected
9029.71								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-QW-RPS Antenna

Date: 01/29/2015
Lab: B
Tested By: Kenneth Lee

**Low Channel
Transmit Mode - Y-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1805.94								N/A - Not in Restricted Band and done via Conducted
2708.91	41.33	H	74	-32.67	Peak	2	45	
2708.91	33.36	H	54	-20.64	Avg	2	45	
3611.88	47.53	H	74	-26.47	Peak	2.25	350	
3611.88	41.01	H	54	-12.99	Avg	2.25	350	
4514.86	42.61	H	74	-31.39	Peak	2.25	0	
4514.86	27.6	H	54	-26.4	Avg	2.25	0	
5417.83	48.07	H	74	-25.93	Peak	340	1.75	
5417.83	35.77	H	54	-18.23	Avg	340	1.75	
6320.8								N/A - Not in Restricted Band and done via Conducted
7223.77								No Emissions Detected
8126.74								No Emissions Detected
9029.71								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-QW-RPS Antenna

Date: 01/29/2015
Lab: B
Tested By: Kenneth Lee

Low Channel
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1805.94								N/A - Not in Restricted Band and done via Conducted
2708.91	41.8	H	74	-32.2	Peak	2.25	180	
2708.91	32.33	H	54	-21.67	Avg	2.25	180	
3611.88	51.94	H	74	-22.06	Peak	1.25	180	
3611.88	48.04	H	54	-5.96	Avg	1.25	180	
4514.86	41.42	H	74	-32.58	Peak	1.25	250	
4514.86	28.95	H	54	-25.05	Avg	1.25	250	
5417.83	49.79	H	74	-24.21	Peak	1.1	160	
5417.83	39.56	H	54	-14.44	Avg	1.1	160	
6320.8								N/A - Not in Restricted Band and done via Conducted
7223.77								No Emissions Detected
8126.74								No Emissions Detected
9029.71								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-QW-RPS Antenna

Date: 01/29/2015
Lab: B
Tested By: Kenneth Lee

**Middle Channel
Transmit Mode - X-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1830								N/A - Not in Restricted Band and done via Conducted
2745	43.35	V	74	-30.65	Peak	2	190	
2745	35.77	V	54	-18.23	Avg	2	190	
3660	53.92	V	74	-20.08	Peak	2	180	
3660	51.38	V	54	-2.62	Avg	2	180	
4575	42.75	V	74	-31.25	Peak			
4575	29.09	V	54	-24.91	Avg			
5490	51.99	V	74	-22.01	Peak	1.5	180	
5490	42.67	V	54	-11.33	Avg	1.5	180	
6405								N/A - Not in Restricted Band and done via Conducted
7320								No Emissions Detected
8235								No Emissions Detected
9150								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-QW-RPS Antenna

Date: 01/29/2015
Lab: B
Tested By: Kenneth Lee

Middle Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1830								N/A - Not in Restricted Band and done via Conducted
2745	41.35	V	74	-32.65	Peak	1.75	45	
2745	31.63	V	54	-22.37	Avg	1.75	45	
3660	49.81	V	74	-24.19	Peak	2	240	
3660	45.29	V	54	-8.71	Avg	2	240	
4575	43.28	V	74	-30.72	Peak	1.75	180	
4575	29.87	V	54	-24.13	Avg	1.75	180	
5490	49.4	V	74	-24.6	Peak	1.5	350	
5490	37.46	V	54	-16.54	Avg	1.5	350	
6405								N/A - Not in Restricted Band and done via Conducted
7320								No Emissions Detected
8235								No Emissions Detected
9150								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-QW-RPS Antenna

Date: 01/29/2015
Lab: B
Tested By: Kenneth Lee

Middle Channel
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1830								N/A - Not in Restricted Band and done via Conducted
2745	40.72	V	74	-33.28	Peak	1.75	45	
2745	30.39	V	54	-23.61	Avg	1.75	45	
3660	48.83	V	74	-25.17	Peak	2.75	180	
3660	43.43	V	54	-10.57	Avg	2.75	180	
4575	42.79	V	74	-31.21	Peak	2.5	120	
4575	29.7	V	54	-24.3	Avg	2.5	120	
5490	51.52	V	74	-22.48	Peak	1.1	60	
5490	43.36	V	54	-10.64	Avg	1.1	60	
6405								N/A - Not in Restricted Band and done via Conducted
7320								No Emissions Detected
8235								No Emissions Detected
9150								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-QW-RPS Antenna

Date: 01/29/2015
Lab: B
Tested By: Kenneth Lee

Middle Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1830								N/A - Not in Restricted Band and done via Conducted
2745	44.2	H	74	-29.8	Peak	1.5	190	
2745	36.57	H	54	-17.43	Avg	1.5	190	
3660	52.07	H	74	-21.93	Peak	1.1	180	
3660	48.27	H	54	-5.73	Avg	1.1	180	
4575	44.09	H	74	-29.91	Peak	1.75	170	
4575	31.1	H	54	-22.9	Avg	1.75	170	
5490	48.93	H	74	-25.07	Peak	2	220	
5490	38.4	H	54	-15.6	Avg	2	220	
6405								N/A - Not in Restricted Band and done via Conducted
7320								No Emissions Detected
8235								No Emissions Detected
9150								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-QW-RPS Antenna

Date: 01/29/2015
Lab: B
Tested By: Kenneth Lee

**Middle Channel
Transmit Mode - Y-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1830								N/A - Not in Restricted Band and done via Conducted
2745	42.73	H	74	-31.27	Peak	1.5	45	
2745	33.15	H	54	-20.85	Avg	1.5	45	
3660	44.93	H	74	-29.07	Peak	1.25	180	
3660	33.24	H	54	-20.76	Avg	1.25	180	
4575	53.7	H	74	-20.3	Peak	1.25	200	
4575	45.92	H	54	-8.08	Avg	1.25	200	
5490	49.68	H	74	-24.32	Peak	1.25	200	
5490	36.56	H	54	-17.44	Avg	1.25	200	
6405								N/A - Not in Restricted Band and done via Conducted
7320								No Emissions Detected
8235								No Emissions Detected
9150								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-QW-RPS Antenna

Date: 01/29/2015
Lab: B
Tested By: Kenneth Lee

Middle Channel
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1830								N/A - Not in Restricted Band and done via Conducted
2745	42.08	H	74	-31.92	Peak	1.5	345	
2745	32.86	H	54	-21.14	Avg	1.5	345	
3660	50.15	H	74	-23.85	Peak	1.5	320	
3660	45.45	H	54	-8.55	Avg	1.5	320	
4575	43.71	H	74	-30.29	Peak	1.75	260	
4575	29.52	H	54	-24.48	Avg	1.75	260	
5490	50.19	H	74	-23.81	Peak	1.5	240	
5490	39.47	H	54	-14.53	Avg	1.5	240	
6405								N/A - Not in Restricted Band and done via Conducted
7320								No Emissions Detected
8235								No Emissions Detected
9150								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-QW-RPS Antenna

Date: 01/29/2015
Lab: B
Tested By: Kenneth Lee

**High Channel
Transmit Mode - X-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1852.55								N/A - Not in Restricted Band and done via Conducted
2778.83	44.22	V	74	-29.78	Peak	1.25	190	
2778.83	38.16	V	54	-15.84	Avg	1.25	190	
3705.1	53.78	V	74	-20.22	Peak	1.25	180	
3705.1	50.53	V	54	-3.47	Avg	1.25	180	
4631.4	42.51	V	74	-31.49	Peak	1.5	180	
4631.4	30.52	V	54	-23.48	Avg	1.5	180	
5557.66	50.81	V	74	-23.19	Peak	1.25	180	
5557.66	40.74	V	54	-13.26	Avg	1.25	180	
6483.9								N/A - Not in Restricted Band and done via Conducted
6483.9								
7410.2								No Emissions Detected
7410.2								
8336.5								No Emissions Detected
8336.5								
9262.8								No Emissions Detected
9262.8								

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-QW-RPS Antenna

Date: 01/29/2015
Lab: B
Tested By: Kenneth Lee

**High Channel
Transmit Mode - Y-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1852.55								N/A - Not in Restricted Band and done via Conducted
2778.83	43.54	V	74	-30.46	Peak	1	15	
2778.83	36.12	V	54	-17.88	Avg	1	15	
3705.1	46.92	V	74	-27.08	Peak	1	30	
3705.1	40.26	V	54	-13.74	Avg	1	30	
4631.4	42.49	V	74	-31.51	Peak	1	340	
4631.4	28.64	V	54	-25.36	Avg	1	340	
5557.66	50.82	V	74	-23.18	Peak	1.25	170	
5557.66	40.17	V	54	-13.83	Avg	1.25	170	
6483.9								N/A - Not in Restricted Band and done via Conducted
6483.9								
7410.2								No Emissions Detected
7410.2								
8336.5								No Emissions Detected
8336.5								
9262.8								No Emissions Detected
9262.8								

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-QW-RPS Antenna

Date: 01/29/2015
Lab: B
Tested By: Kenneth Lee

**High Channel
Transmit Mode - Z-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1852.55								N/A - Not in Restricted Band and done via Conducted
2778.83	43.45	V	74	-30.55	Peak	1.5	200	
2778.83	36.54	V	54	-17.46	Avg	1.5	200	
3705.1	49.91	V	74	-24.09	Peak	1	190	
3705.1	44.95	V	54	-9.05	Avg	1	190	
4631.4	44.53	V	74	-29.47	Peak	1.75	320	
4631.4	33.35	V	54	-20.65	Avg	1.75	320	
5557.66	51.51	V	74	-22.49	Peak	1	120	
5557.66	42.04	V	54	-11.96	Avg	1	120	
6483.9								N/A - Not in Restricted Band and done via Conducted
6483.9								
7410.2								No Emissions Detected
7410.2								
8336.5								No Emissions Detected
8336.5								
9262.8								No Emissions Detected
9262.8								

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-QW-RPS Antenna

Date: 01/29/2015
Lab: B
Tested By: Kenneth Lee

**High Channel
Transmit Mode - X-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1852.55								N/A - Not in Restricted Band and done via Conducted
2778.83	44.35	H	74	-29.65	Peak	1	200	
2778.83	38.26	H	54	-15.74	Avg	1	200	
3705.1	51.7	H	74	-22.3	Peak	1	45	
3705.1	47.63	H	54	-6.37	Avg	1	45	
4631.4	44.28	H	74	-29.72	Peak	1.1	15	
4631.4	32.11	H	54	-21.89	Avg	1.1	15	
5557.66	51.69	H	74	-22.31	Peak	1.75	45	
5557.66	42.46	H	54	-11.54	Avg	1.75	45	
6483.9								N/A - Not in Restricted Band and done via Conducted
6483.9								
7410.2								No Emissions Detected
7410.2								
8336.5								No Emissions Detected
8336.5								
9262.8								No Emissions Detected
9262.8								

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-QW-RPS Antenna

Date: 01/29/2015
Lab: B
Tested By: Kenneth Lee

**High Channel
Transmit Mode - Y-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1852.55								N/A - Not in Restricted Band and done via Conducted
2778.83	41.14	H	74	-32.86	Peak	2	45	
2778.83	32.34	H	54	-21.66	Avg	2	45	
3705.1	46.33	H	74	-27.67	Peak	1.25	90	
3705.1	39.57	H	54	-14.43	Avg	1.25	90	
4631.4	43.61	H	74	-30.39	Peak	1.5	350	
4631.4	32.11	H	54	-21.89	Avg	1.5	350	
5557.66	50.21	H	74	-23.79	Peak	1.75	270	
5557.66	39.54	H	54	-14.46	Avg	1.75	270	
6483.9								N/A - Not in Restricted Band and done via Conducted
6483.9								
7410.2								No Emissions Detected
7410.2								
8336.5								No Emissions Detected
8336.5								
9262.8								No Emissions Detected
9262.8								

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-QW-RPS Antenna

Date: 01/29/2015
Lab: B
Tested By: Kenneth Lee

**High Channel
Transmit Mode - Z-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1852.55								N/A - Not in Restricted Band and done via Conducted
2778.83	44.74	H	74	-29.26	Peak	1.1	180	
2778.83	39.13	H	54	-14.87	Avg	1.1	180	
3705.1	51.51	H	74	-22.49	Peak	1	180	
3705.1	47.74	H	54	-6.26	Avg	1	180	
4631.4	42.6	H	74	-31.4	Peak	1.25	90	
4631.4	29.95	H	54	-24.05	Avg	1.25	90	
5557.66	52.17	H	74	-21.83	Peak	1	170	
5557.66	43.78	H	54	-10.22	Avg	1	170	
6483.9								N/A - Not in Restricted Band and done via Conducted
6483.9								
7410.2								No Emissions Detected
7410.2								
8336.5								No Emissions Detected
8336.5								
9262.8								No Emissions Detected
9262.8								

FCC 15.247 and FCC Class B

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-QW-RPS Antenna

Dates: 01/29/2015 and 02/05/2015
Labs: B and D
Tested By: Kenneth Lee

Non Harmonic Emissions from the Tx and Digital Portion - 10 kHz to 30 MHz
Non Harmonic Emissions from the Tx and Digital Portion - 1 GHz to 9.3 GHz

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
								No Emissions Found for the
								Digital Portion
								from 10 kHz to 30 MHz
								for both Vertical and Horizontal
								Polarizations
								No Non Harmonic Emissions Found
								for the Tx Mode
								from 10 kHz to 30 MHz
								for both Vertical and Horizontal
								Polarizations
								Investigated in the X-Axis, Y-Axis,
								and Z-Axis
								No Emissions Found for the
								Digital Portion
								from 1 GHz to 9.3 GHz
								for both Vertical and Horizontal
								Polarizations
								No Non Harmonic Emissions Found
								for the Tx Mode
								from 1 GHz to 9.3 GHz
								for both Vertical and Horizontal
								Polarizations
								Investigated in the X-Axis, Y-Axis,
								and Z-Axis



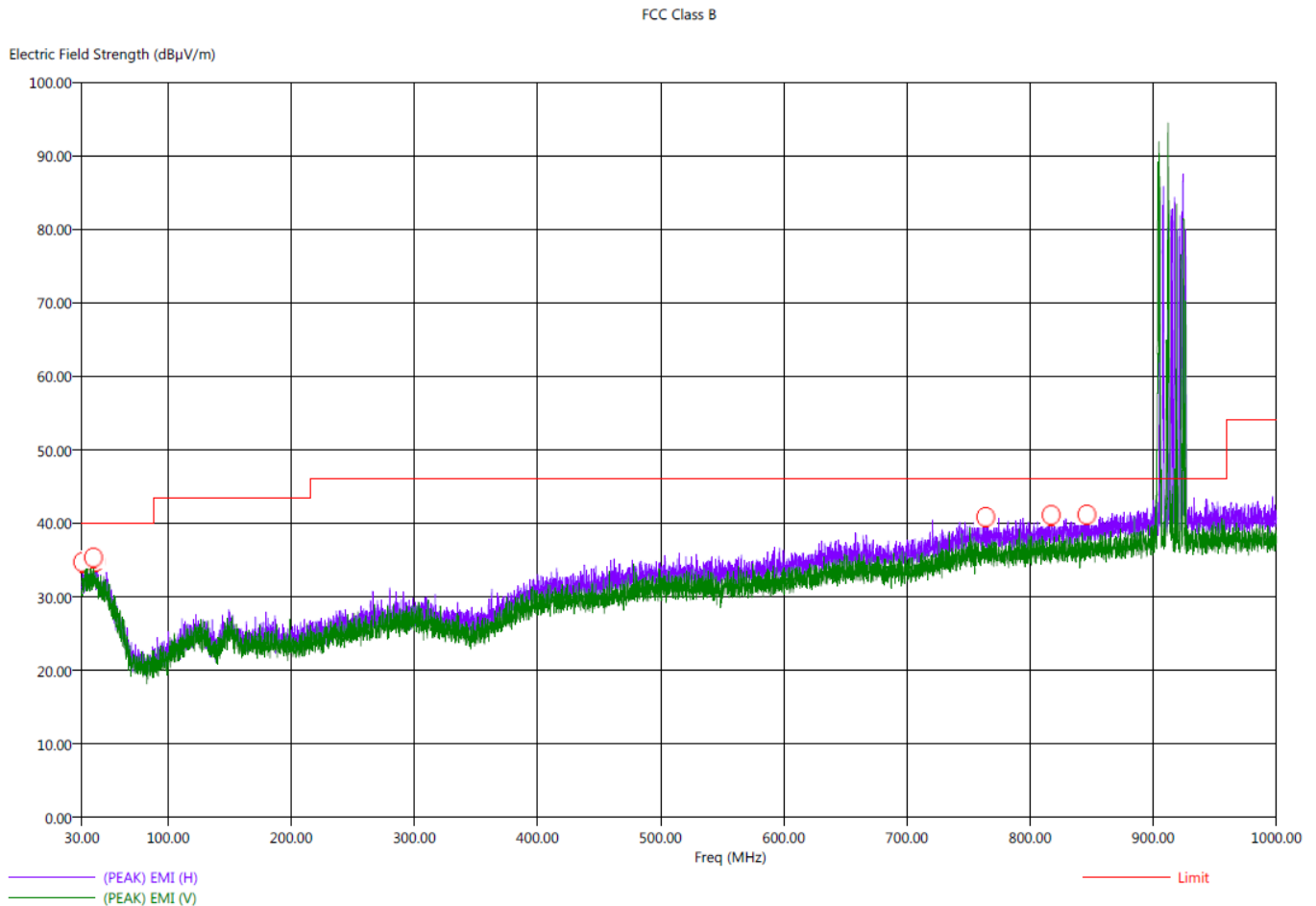
ANT-916-CW-QW-RPS Antenna

Tested By: Kenneth Lee

[illegible]

Title: Pre-Scan - FCC Class B
File: Agilent - Radiated Pre-Scan 30-1000Mhz - FCC Class B_Module_4_Protocol_B_ANT-916-CW-QW-RPS_X-Axis_02-05-2015.set
Operator: Kenneth Lee
EUT Type: Hummingbird MCA
EUT Condition: Continuously Transmitting - Frequency Hopping - Protocol B - Module 4 - X-Axis - Worst Case
Comments: Customer: Linx Technologies
M/N: HUM-900-PRO-CAS
Note: Antenna - ANT-916-CW-QW-RPS

2/5/2015 2:12:53 PM
Sequence: Preliminary Scan

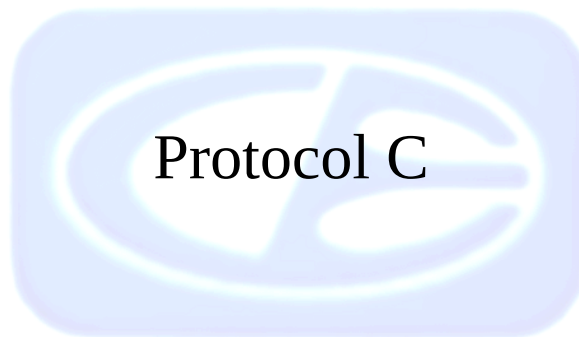


Title: Radiated Final - 30-1000 MHz - FCC Class B
File: Agilent - Radiated Final Scan 30-1000Mhz - FCC Class B_Module 4_Protocol B_ANT-916-CW-QW-RPS_X-Axis_02-05-2015.set
Operator: Kenneth Lee
EUT Type: Hummingbird MCA
EUT Condition: Continuously Transmitting - Frequency Hopping - Protocol B - Module 4 - X-Axis - Worst Case
Comments: Customer: Linx Technologies
M/N: HUM-900-PRO-CAS
Note: Antenna - ANT-916-CW-QW-RPS

2/5/2015 2:54:16 PM
Sequence: Final Measurements

Final Scan - FCC Class B

Freq (MHz)	Pol	(PEAK) EMI (dBµV/m)	(QP) EMI (dBµV/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dBµV/m)	Transducer (dB)	Cable (dB)	Twr Ht (cm)	Ttbl Agl (deg)
30.70	H	35.05	30.56	-4.95	-9.44	40.00	23.46	0.36	287.91	25.75
39.50	V	34.93	31.39	-5.07	-8.61	40.00	24.18	0.43	353.64	127.75
41.00	H	35.48	31.18	-4.52	-8.82	40.00	23.99	0.43	400.50	41.75
764.00	H	40.91	36.58	-5.09	-9.42	46.00	25.90	2.36	223.61	152.75
817.20	H	41.10	36.95	-4.90	-9.05	46.00	26.07	2.42	399.91	115.00
846.20	H	42.44	37.28	-3.56	-8.72	46.00	26.37	2.51	320.32	127.50



FCC 15.247

Linx Technologies
 Hummingbird MCA Module
 Model: HUM-900-RC-CAS
 Configuration: Protocol C - Module 4
 ANT-916-CW-QW-RPS

Date: 02/02/2015
 Lab: B
 Tested By: Kenneth Lee

Low Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1805.5								N/A - Not in Restricted Band and done via Conducted
2708.25	38.67	V	74	-35.33	Peak	2	160	
2708.25	25.51	V	54	-28.49	Avg	2	160	
3611	49.24	V	74	-24.76	Peak	1.75	180	
3611	32.75	V	54	-21.25	Avg	1.75	180	
4513.75	42.54	V	74	-31.46	Peak	1	190	
4513.75	28.26	V	54	-25.74	Avg	1	190	
5416.5	46.24	V	74	-27.76	Peak	1	160	
5416.5	33.12	V	54	-20.88	Avg	1	160	
6319.25								N/A - Not in Restricted Band and done via Conducted
7222								No Emissions Detected
8124.75								No Emissions Detected
9027.5								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-RC-CAS
Configuration: Protocol C - Module 4
ANT-916-CW-QW-RPS

Date: 02/02/2015
Lab: B
Tested By: Kenneth Lee

Low Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1805.5								N/A - Not in Restricted Band and done via Conducted
2708.25	40.27	V	74	-33.73	Peak	1.1	10	
2708.25	26.95	V	54	-27.05	Avg	1.1	10	
3611	44.85	V	74	-29.15	Peak	3.25	0	
3611	30.19	V	54	-23.81	Avg	3.25	0	
4513.75	42.59	V	74	-31.41	Peak	1.75	260	
4513.75	28.41	V	54	-25.59	Avg	1.75	260	
5416.5	46.46	V	74	-27.54	Peak	2	250	
5416.5	33.28	V	54	-20.72	Avg	2	250	
6319.25								N/A - Not in Restricted Band and done via Conducted
7222								No Emissions Detected
8124.75								No Emissions Detected
9027.5								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-RC-CAS
Configuration: Protocol C - Module 4
ANT-916-CW-QW-RPS

Date: 02/02/2015
Lab: B
Tested By: Kenneth Lee

Low Channel
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1805.5								N/A - Not in Restricted Band and done via Conducted
2708.25	40.4	V	74	-33.6	Peak	1	250	
2708.25	26.52	V	54	-27.48	Avg	1	250	
3611	47.64	V	74	-26.36	Peak	1	190	
3611	31.76	V	54	-22.24	Avg	1	190	
4513.75	42.87	V	74	-31.13	Peak	1	45	
4513.75	28.62	V	54	-25.38	Avg	1	45	
5416.5	49.39	V	74	-24.61	Peak	1.25	45	
5416.5	37.52	V	54	-16.48	Avg	1.25	45	
6319.25								N/A - Not in Restricted Band and done via Conducted
7222								No Emissions Detected
8124.75								No Emissions Detected
9027.5								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-RC-CAS
Configuration: Protocol C - Module 4
ANT-916-CW-QW-RPS

Date: 02/02/2015
Lab: B
Tested By: Kenneth Lee

Low Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1805.5								N/A - Not in Restricted Band and done via Conducted
2708.25	43.41	H	74	-30.59	Peak	1	160	
2708.25	28.77	H	54	-25.23	Avg	1	160	
3611	48.28	H	74	-25.72	Peak	1	200	
3611	31.94	H	54	-22.06	Avg	1	200	
4513.75	41.29	H	74	-32.71	Peak	1.1	180	
4513.75	27.58	H	54	-26.42	Avg	1.1	180	
5416.5	47.42	H	74	-26.58	Peak	1.75	45	
5416.5	33.44	H	54	-20.56	Avg	1.75	45	
6319.25								N/A - Not in Restricted Band and done via Conducted
7222								No Emissions Detected
8124.75								No Emissions Detected
9027.5								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-RC-CAS
Configuration: Protocol C - Module 4
ANT-916-CW-QW-RPS

Date: 02/02/2015
Lab: B
Tested By: Kenneth Lee

Low Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1805.5								N/A - Not in Restricted Band and done via Conducted
2708.25	38.89	H	74	-35.11	Peak	1.75	15	
2708.25	25.11	H	54	-28.89	Avg	1.75	15	
3611	41.75	H	74	-32.25	Peak	1.5	350	
3611	27.63	H	54	-26.37	Avg	1.5	350	
4513.75	41.67	H	74	-32.33	Peak	3	325	
4513.75	27.59	H	54	-26.41	Avg	3	325	
5416.5	46.2	H	74	-27.8	Peak	1	0	
5416.5	32.21	H	54	-21.79	Avg	1	0	
6319.25								N/A - Not in Restricted Band and done via Conducted
7222								No Emissions Detected
8124.75								No Emissions Detected
9027.5								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-RC-CAS
Configuration: Protocol C - Module 4
ANT-916-CW-QW-RPS

Date: 02/02/2015
Lab: B
Tested By: Kenneth Lee

Low Channel
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1805.5								N/A - Not in Restricted Band and done via Conducted
2708.25	41.43	H	74	-32.57	Peak	1.5	150	
2708.25	26.49	H	54	-27.51	Avg	1.5	150	
3611	46.77	H	74	-27.23	Peak	1.5	150	
3611	31.48	H	54	-22.52	Avg	1.5	150	
4513.75	40.38	H	74	-33.62	Peak	1	180	
4513.75	27.57	H	54	-26.43	Avg	1	180	
5416.5	48.46	H	74	-25.54	Peak	1	180	
5416.5	33.63	H	54	-20.37	Avg	1	180	
6319.25								N/A - Not in Restricted Band and done via Conducted
7222								No Emissions Detected
8124.75								No Emissions Detected
9027.5								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-RC-CAS
Configuration: Protocol C - Module 4
ANT-916-CW-QW-RPS

Date: 02/02/2015
Lab: B
Tested By: Kenneth Lee

Middle Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1817.5								N/A - Not in Restricted Band and done via Conducted
2726.25	43.02	V	74	-30.98	Peak	1.5	160	
2726.25	28.47	V	54	-25.53	Avg	1.5	160	
3635	50.09	V	74	-23.91	Peak	1.75	180	
3635	33.43	V	54	-20.57	Avg	1.75	180	
4543.75	42.17	V	74	-31.83	Peak	1.5	160	
4543.75	28.13	V	54	-25.87	Avg	1.5	160	
5452.49	48.5	V	74	-25.5	Peak	1.25	180	
5452.49	34.81	V	54	-19.19	Avg	1.25	180	
6361.24								N/A - Not in Restricted Band and done via Conducted
7269.99								No Emissions Detected
8178.74								No Emissions Detected
9087.49								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-RC-CAS
Configuration: Protocol C - Module 4
ANT-916-CW-QW-RPS

Date: 02/02/2015
Lab: B
Tested By: Kenneth Lee

Middle Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1817.5								N/A - Not in Restricted Band and done via Conducted
2726.25	41.43	V	74	-32.57	Peak	1.1	0	
2726.25	27.4	V	54	-26.6	Avg	1.1	0	
3635	45.53	V	74	-28.47	Peak	2.25	335	
3635	30.95	V	54	-23.05	Avg	2.25	335	
4543.75	42.73	V	74	-31.27	Peak	1.75	180	
4543.75	28.27	V	54	-25.73	Avg	1.75	180	
5452.49	47.71	V	74	-26.29	Peak	1.5	270	
5452.49	32.55	V	54	-21.45	Avg	1.5	270	
6361.24								N/A - Not in Restricted Band and done via Conducted
7269.99								No Emissions Detected
8178.74								No Emissions Detected
9087.49								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-RC-CAS
Configuration: Protocol C - Module 4
ANT-916-CW-QW-RPS

Date: 02/02/2015
Lab: B
Tested By: Kenneth Lee

Middle Channel
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1817.5								N/A - Not in Restricted Band and done via Conducted
2726.25	41.38	V	74	-32.62	Peak	1.5	180	
2726.25	27.18	V	54	-26.82	Avg	1.5	180	
3635	47.04	V	74	-26.96	Peak	1.25	160	
3635	32	V	54	-22	Avg	1.25	160	
4543.75	42.36	V	74	-31.64	Peak	1	180	
4543.75	28.39	V	54	-25.61	Avg	1	180	
5452.49	49.57	V	74	-24.43	Peak	1.25	160	
5452.49	37.33	V	54	-16.67	Avg	1.25	160	
6361.24								N/A - Not in Restricted Band and done via Conducted
7269.99								No Emissions Detected
8178.74								No Emissions Detected
9087.49								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-RC-CAS
Configuration: Protocol C - Module 4
ANT-916-CW-QW-RPS

Date: 02/02/2015
Lab: B
Tested By: Kenneth Lee

Middle Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1817.5								N/A - Not in Restricted Band and done via Conducted
2726.25	42.17	H	74	-31.83	Peak	2	160	
2726.25	28.1	H	54	-25.9	Avg	2	160	
3635	46.38	H	74	-27.62	Peak	1.75	140	
3635	30.99	H	54	-23.01	Avg	1.75	140	
4543.75	42.59	H	74	-31.41	Peak	1.1	160	
4543.75	28.03	H	54	-25.97	Avg	1.1	160	
5452.49	48.95	H	74	-25.05	Peak	1	200	
5452.49	35.21	H	54	-18.79	Avg	1	200	
6361.24								N/A - Not in Restricted Band and done via Conducted
7269.99								No Emissions Detected
8178.74								No Emissions Detected
9087.49								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-RC-CAS
Configuration: Protocol C - Module 4
ANT-916-CW-QW-RPS

Date: 02/02/2015
Lab: B
Tested By: Kenneth Lee

Middle Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1817.5								N/A - Not in Restricted Band and done via Conducted
2726.25	40.3	H	74	-33.7	Peak	1	45	
2726.25	26.64	H	54	-27.36	Avg	1	45	
3635	44.14	H	74	-29.86	Peak	1.25	225	
3635	29.95	H	54	-24.05	Avg	1.25	225	
4543.75	42.38	H	74	-31.62	Peak	1.5	250	
4543.75	28.45	H	54	-25.55	Avg	1.5	250	
5452.49	49	H	74	-25	Peak	1	220	
5452.49	36.89	H	54	-17.11	Avg	1	220	
6361.24								N/A - Not in Restricted Band and done via Conducted
7269.99								No Emissions Detected
8178.74								No Emissions Detected
9087.49								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-RC-CAS
Configuration: Protocol C - Module 4
ANT-916-CW-QW-RPS

Date: 02/02/2015
Lab: B
Tested By: Kenneth Lee

Middle Channel
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1817.5								N/A - Not in Restricted Band and done via Conducted
2726.25	42.86	H	74	-31.14	Peak	1.1	180	
2726.25	28.46	H	54	-25.54	Avg	1.1	180	
3635	49.07	H	74	-24.93	Peak	1	160	
3635	32.52	H	54	-21.48	Avg	1	160	
4543.75	42.6	H	74	-31.4	Peak	1.25	15	
4543.75	29.08	H	54	-24.92	Avg	1.25	15	
5452.49	47.64	H	74	-26.36	Peak	1.25	160	
5452.49	34.23	H	54	-19.77	Avg	1.25	160	
6361.24								N/A - Not in Restricted Band and done via Conducted
7269.99								No Emissions Detected
8178.74								No Emissions Detected
9087.49								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-RC-CAS
Configuration: Protocol C - Module 4
ANT-916-CW-QW-RPS

Date: 02/02/2015
Lab: B
Tested By: Kenneth Lee

**High Channel
Transmit Mode - X-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1829.49								N/A - Not in Restricted Band and done via Conducted
2744.24	43.18	V	74	-30.82	Peak	2	180	
2744.24	29.05	V	54	-24.95	Avg	2	180	
3658.99	50.36	V	74	-23.64	Peak	1.5	150	
3658.99	33.35	V	54	-20.65	Avg	1.5	150	
4573.74	43.12	V	74	-30.88	Peak	2.25	45	
4573.74	28.82	V	54	-25.18	Avg	2.25	45	
5488.48	48.65	V	74	-25.35	Peak	1.5	90	
5488.48	34.69	V	54	-19.31	Avg	1.5	90	
6403.23								N/A - Not in Restricted Band and done via Conducted
7317.98								No Emissions Detected
8232.72								No Emissions Detected
9147.47								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-RC-CAS
Configuration: Protocol C - Module 4
ANT-916-CW-QW-RPS

Date: 02/02/2015
Lab: B
Tested By: Kenneth Lee

**High Channel
Transmit Mode - Y-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1829.49								N/A - Not in Restricted Band and done via Conducted
2744.24	40.17	V	74	-33.83	Peak	1.5	180	
2744.24	26.73	V	54	-27.27	Avg	1.5	180	
3658.99	45.19	V	74	-28.81	Peak	1.75	180	
3658.99	30.59	V	54	-23.41	Avg	1.75	180	
4573.74	42.85	V	74	-31.15	Peak	1.75	160	
4573.74	28.49	V	54	-25.51	Avg	1.75	160	
5488.48	48.21	V	74	-25.79	Peak	1.5	180	
5488.48	34.41	V	54	-19.59	Avg	1.5	180	
6403.23								N/A - Not in Restricted Band and done via Conducted
7317.98								No Emissions Detected
8232.72								No Emissions Detected
9147.47								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-RC-CAS
Configuration: Protocol C - Module 4
ANT-916-CW-QW-RPS

Date: 02/02/2015
Lab: B
Tested By: Kenneth Lee

**High Channel
Transmit Mode - Z-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1829.49								N/A - Not in Restricted Band and done via Conducted
2744.24	41.93	V	74	-32.07	Peak	1.75	200	
2744.24	27.9	V	54	-26.1	Avg	1.75	200	
3658.99	46.94	V	74	-27.06	Peak	1.1	180	
3658.99	31.77	V	54	-22.23	Avg	1.1	180	
4573.74	42.66	V	74	-31.34	Peak	1.75	210	
4573.74	28.5	V	54	-25.5	Avg	1.75	210	
5488.48	48.3	V	74	-25.7	Peak	2.25	180	
5488.48	34.72	V	54	-19.28	Avg	2.25	180	
6403.23								N/A - Not in Restricted Band and done via Conducted
7317.98								No Emissions Detected
8232.72								No Emissions Detected
9147.47								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-RC-CAS
Configuration: Protocol C - Module 4
ANT-916-CW-QW-RPS

Date: 02/02/2015
Lab: B
Tested By: Kenneth Lee

**High Channel
Transmit Mode - X-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1829.49								N/A - Not in Restricted Band and done via Conducted
2744.24	44.21	H	74	-29.79	Peak	1.15	170	
2744.24	29.6	H	54	-24.4	Avg	1.15	170	
3658.99	48.17	H	74	-25.83	Peak	1.1	200	
3658.99	32.16	H	54	-21.84	Avg	1.1	200	
4573.74	42.62	H	74	-31.38	Peak	1.25	220	
4573.74	29.13	H	54	-24.87	Avg	1.25	220	
5488.48	48.61	H	74	-25.39	Peak	1	190	
5488.48	35.67	H	54	-18.33	Avg	1	190	
6403.23								N/A - Not in Restricted Band and done via Conducted
7317.98								No Emissions Detected
8232.72								No Emissions Detected
9147.47								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-RC-CAS
Configuration: Protocol C - Module 4
ANT-916-CW-QW-RPS

Date: 02/02/2015
Lab: B
Tested By: Kenneth Lee

**High Channel
Transmit Mode - Y-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1829.49								N/A - Not in Restricted Band and done via Conducted
2744.24	42.37	H	74	-31.63	Peak	1.25	10	
2744.24	27.69	H	54	-26.31	Avg	1.25	10	
3658.99	44.08	H	74	-29.92	Peak	1.35	45	
3658.99	29.57	H	54	-24.43	Avg	1.35	45	
4573.74	44.24	H	74	-29.76	Peak	1.25	210	
4573.74	30.24	H	54	-23.76	Avg	1.25	210	
5488.48	50.15	H	74	-23.85	Peak	1.1	170	
5488.48	35.07	H	54	-18.93	Avg	1.1	170	
6403.23								N/A - Not in Restricted Band and done via Conducted
7317.98								No Emissions Detected
8232.72								No Emissions Detected
9147.47								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-RC-CAS
Configuration: Protocol C - Module 4
ANT-916-CW-QW-RPS

Date: 02/02/2015
Lab: B
Tested By: Kenneth Lee

**High Channel
Transmit Mode - Z-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1829.49								N/A - Not in Restricted Band and done via Conducted
2744.24	44.09	H	74	-29.91	Peak	1.1	170	
2744.24	28.93	H	54	-25.07	Avg	1.1	170	
3658.99	49.03	H	74	-24.97	Peak	1	180	
3658.99	32.45	H	54	-21.55	Avg	1	180	
4573.74	43.83	H	74	-30.17	Peak	1.25	340	
4573.74	29.59	H	54	-24.41	Avg	1.25	340	
5488.48	48.52	H	74	-25.48	Peak	1	180	
5488.48	34.53	H	54	-19.47	Avg	1	180	
6403.23								N/A - Not in Restricted Band and done via Conducted
7317.98								No Emissions Detected
8232.72								No Emissions Detected
9147.47								No Emissions Detected

FCC 15.247 and FCC Class B

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-RC-CAS
Configuration: Protocol C - Module 4
ANT-916-CW-QW-RPS Antenna

Dates: 02/02/2015 and 02/05/2015
Labs: B and D
Tested By: Kenneth Lee

Non Harmonic Emissions from the Tx and Digital Portion - 10 kHz to 30 MHz
Non Harmonic Emissions from the Tx and Digital Portion - 1 GHz to 9.3 GHz

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
								No Emissions Found for the
								Digital Portion
								from 10 kHz to 30 MHz
								for both Vertical and Horizontal
								Polarizations
								No Non Harmonic Emissions Found
								for the Tx Mode
								from 10 kHz to 30 MHz
								for both Vertical and Horizontal
								Polarizations
								Investigated in the X-Axis, Y-Axis,
								and Z-Axis
								No Emissions Found for the
								Digital Portion
								from 1 GHz to 9.3 GHz
								for both Vertical and Horizontal
								Polarizations
								No Non Harmonic Emissions Found
								for the Tx Mode
								from 1 GHz to 9.3 GHz
								for both Vertical and Horizontal
								Polarizations
								Investigated in the X-Axis, Y-Axis,
								and Z-Axis

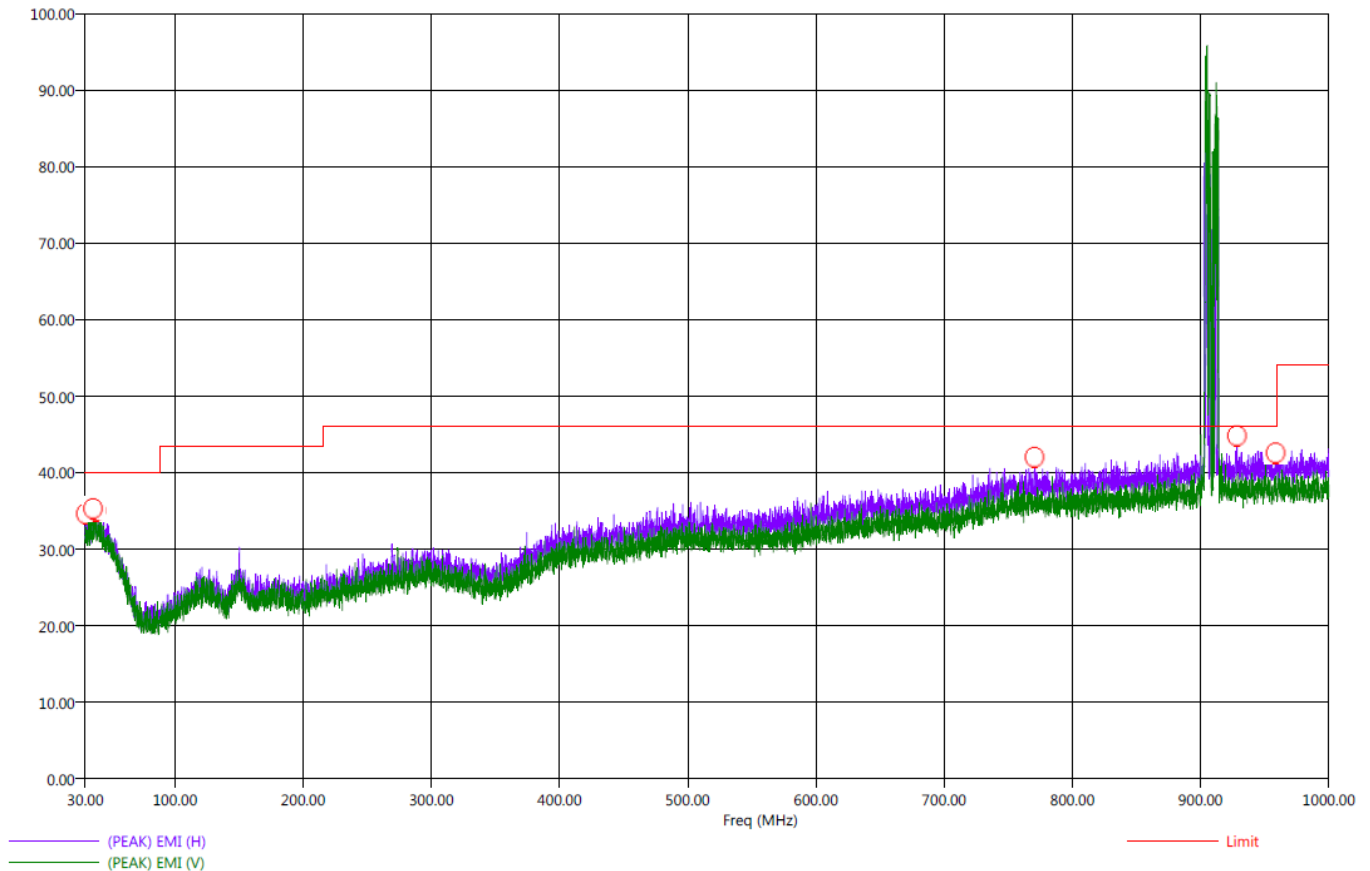


Tested By: Kenneth Lee

[illegible]

Title: Pre-Scan - FCC Class B
File: Agilent - Radiated Pre-Scan 30-1000Mhz - FCC Class B_Module_4_Protocol_C_ANT-916-CW-QW-RPS_Z-Axis_02-05-2015.set
Operator: Kenneth Lee
EUT Type: Hummingbird MCA
EUT Condition: Continuously Transmitting - Frequency Hopping - Protocol C - Module 4 - Z-Axis - Worst Case
Comments: Customer: Linx Technologies
M/N: HUM-900-RC-CAS
Note: Antenna - ANT-916-CW-QW-RPS

2/5/2015 3:49:42 PM
Sequence: Preliminary Scan

FCC Class BElectric Field Strength (dB μ V/m)

Title: Radiated Final - 30-1000 MHz - FCC Class B
File: Agilent - Radiated Final Scan 30-1000Mhz - FCC Class B_Module_4_Protocol_C_ANT-916-CW-QW-RPS_Z-Axis_02-05-2015.set
Operator: Kenneth Lee
EUT Type: Hummingbird MCA
EUT Condition: Continuously Transmitting - Frequency Hopping - Protocol C - Module 4 - Z-Axis - Worst Case
Comments: Customer: Linx Technologies
M/N: HUM-900-RC-CAS
Note: Antenna - ANT-916-CW-QW-RPS

2/5/2015 4:01:46 PM
Sequence: Final Measurements

Final Scan - FCC Class B

Freq (MHz)	Pol	(PEAK) EMI (dBµV/m)	(QP) EMI (dBµV/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dBµV/m)	Transducer (dB)	Cable (dB)	Twr Ht (cm)	Ttbl Agl (deg)
30.60	H	34.84	30.60	-5.16	-9.40	40.00	23.45	0.36	223.37	329.25
36.20	V	35.11	31.05	-4.89	-8.95	40.00	23.81	0.40	207.07	110.00
38.50	V	35.66	31.29	-4.34	-8.71	40.00	24.01	0.42	223.73	165.75
770.60	H	42.60	36.66	-3.40	-9.34	46.00	25.90	2.36	191.67	97.50
928.50	H	42.83	38.88	-3.17	-7.12	46.00	27.40	2.68	367.97	245.25
958.60	H	43.47	39.18	-2.53	-6.82	46.00	27.66	2.75	319.85	300.00

ANT-916-CW-HW
Protocol A

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol A - Module 4
ANT-916-CW-HW Antenna

Date: 01/31/2015
Lab: B
Tested By: Kyle Fujimoto

Low Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1805.94								N/A - Not in Restricted Band and done via Conducted
2708.91	39.44	V	74	-34.56	Peak	1.25	45	
2708.91	26.22	V	54	-27.78	Avg	1.25	45	
3611.88	45.71	V	74	-28.29	Peak	1.25	90	
3611.88	39.24	V	54	-14.76	Avg	1.25	90	
4514.86	41.22	V	74	-32.78	Peak	1.35	145	
4514.86	29.33	V	54	-24.67	Avg	1.35	145	
5417.83	49.16	V	74	-24.84	Peak	1.25	315	
5417.83	38.59	V	54	-15.41	Avg	1.25	315	
6320.8	48.91	V	54	-5.09	Avg	1.35	325	N/A - Not in Restricted Band and done via Conducted
7223.77								No Emissions Detected
8126.74								No Emissions Detected
9029.71								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol A - Module 4
ANT-916-CW-HW Antenna

Date: 01/31/2015
Lab: B
Tested By: Kyle Fujimoto

Low Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1805.94								N/A - Not in Restricted Band and done via Conducted
2708.91	40.62	V	74	-33.38	Peak	1.25	155	
2708.91	29.97	V	54	-24.03	Avg	1.25	155	
3611.88	46.07	V	74	-27.93	Peak	1.35	165	
3611.88	41.86	V	54	-12.14	Avg	1.35	165	
4514.86	42.59	V	74	-31.41	Peak	1.25	175	
4514.86	28.23	V	54	-25.77	Avg	1.25	175	
5417.83	50.85	V	74	-23.15	Peak	1.35	135	
5417.83	43.86	V	54	-10.14	Avg	1.35	135	
6320.8								N/A - Not in Restricted Band and done via Conducted
7223.77								No Emissions Detected
8126.74								No Emissions Detected
9029.71								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol A - Module 4
ANT-916-CW-HW Antenna

Date: 01/31/2015
Lab: B
Tested By: Kyle Fujimoto

Low Channel
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1805.94								N/A - Not in Restricted Band and done via Conducted
2708.91	41.79	V	74	-32.21	Peak	1.25	225	
2708.91	34.83	V	54	-19.17	Avg	1.25	225	
3611.88	46.35	V	74	-27.65	Peak	1.35	145	
3611.88	38.21	V	54	-15.79	Avg	1.35	145	
4514.86	43.21	V	74	-30.79	Peak	1.25	135	
4514.86	28.45	V	54	-25.55	Avg	1.25	135	
5417.83	52.01	V	74	-21.99	Peak	1.25	155	
5417.83	45.68	V	54	-8.32	Avg	1.25	155	
6320.8								N/A - Not in Restricted Band and done via Conducted
7223.77								No Emissions Detected
8126.74								No Emissions Detected
9029.71								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol A - Module 4
ANT-916-CW-HW Antenna

Date: 01/31/2015
Lab: B
Tested By: Kyle Fujimoto

Low Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1805.94								N/A - Not in Restricted Band and done via Conducted
2708.91	43.81	H	74	-30.19	Peak	1.25	225	
2708.91	35.27	H	54	-18.73	Avg	1.25	225	
3611.88	49.51	H	74	-24.49	Peak	1.25	45	
3611.88	44.79	H	54	-9.21	Avg	1.25	45	
4514.86	43.72	H	74	-30.28	Peak	1.15	165	
4514.86	28.23	H	54	-25.77	Avg	1.15	165	
5417.83	52.06	H	74	-21.94	Peak	1.25	180	
5417.83	46.88	H	54	-7.12	Avg	1.25	180	
6320.8								N/A - Not in Restricted Band and done via Conducted
7223.77								No Emissions Detected
8126.74								No Emissions Detected
9029.71								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol A - Module 4
ANT-916-CW-HW Antenna

Date: 01/31/2015
Lab: B
Tested By: Kyle Fujimoto

Low Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1805.94								N/A - Not in Restricted Band and done via Conducted
2708.91	39.88	H	74	-34.12	Peak	1.25	135	
2708.91	28.35	H	54	-25.65	Avg	1.25	135	
3611.88	43.69	H	74	-30.31	Peak	1.35	185	
3611.88	36.96	H	54	-17.04	Avg	1.35	185	
4514.86	42.94	H	74	-31.06	Peak	1.25	175	
4514.86	29.29	H	54	-24.71	Avg	1.25	175	
5417.83	51.63	H	74	-22.37	Peak	1.25	185	
5417.83	45.18	H	54	-8.82	Avg	1.25	185	
6320.8								N/A - Not in Restricted Band and done via Conducted
7223.77								No Emissions Detected
8126.74								No Emissions Detected
9029.71								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol A - Module 4
ANT-916-CW-HW Antenna

Date: 01/31/2015
Lab: B
Tested By: Kyle Fujimoto

Low Channel
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1805.94								N/A - Not in Restricted Band and done via Conducted
2708.91	41.85	H	74	-32.15	Peak	1.25	315	
2708.91	32.88	H	54	-21.12	Avg	1.25	315	
3611.88	51.31	H	74	-22.69	Peak	1.25	45	
3611.88	47.02	H	54	-6.98	Avg	1.25	45	
4514.86	42.94	H	74	-31.06	Peak	1.35	145	
4514.86	31.05	H	54	-22.95	Avg	1.35	145	
5417.83	53.42	H	74	-20.58	Peak	1.25	155	
5417.83	49.22	H	54	-4.78	Avg	1.25	155	
6320.8								N/A - Not in Restricted Band and done via Conducted
7223.77								No Emissions Detected
8126.74								No Emissions Detected
9029.71								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol A - Module 4
ANT-916-CW-HW Antenna

Date: 01/31/2015
Lab: B
Tested By: Kyle Fujimoto

Middle Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1830								N/A - Not in Restricted Band and done via Conducted
2745	42.48	V	74	-31.52	Peak	1.25	135	
2745	34.64	V	54	-19.36	Avg	1.25	135	
3660	45.11	V	74	-28.89	Peak	1.25	145	
3660	39.38	V	54	-14.62	Avg	1.25	145	
4575	43.72	V	74	-30.28	Peak	1.15	135	
4575	28.21	V	54	-25.79	Avg	1.15	135	
5490	52.05	V	74	-21.95	Peak	1.25	155	
5490	43.57	V	54	-10.43	Avg	1.25	155	
6405								N/A - Not in Restricted Band and done via Conducted
7320								No Emissions Detected
8235								No Emissions Detected
9150								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol A - Module 4
ANT-916-CW-HW Antenna

Date: 01/31/2015
Lab: B
Tested By: Kyle Fujimoto

Middle Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1830								N/A - Not in Restricted Band and done via Conducted
2745	40.39	V	74	-33.61	Peak	1.25	165	
2745	26.85	V	54	-27.15	Avg	1.25	165	
3660	44.41	V	74	-29.59	Peak	1.25	315	
3660	37.19	V	54	-16.81	Avg	1.25	315	
4575	43.95	V	74	-30.05	Peak	1.35	125	
4575	32.13	V	54	-21.87	Avg	1.35	125	
5490	50.43	V	74	-23.57	Peak	1.25	155	
5490	43.33	V	54	-10.67	Avg	1.25	155	
6405								N/A - Not in Restricted Band and done via Conducted
7320								No Emissions Detected
8235								No Emissions Detected
9150								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol A - Module 4
ANT-916-CW-HW Antenna

Date: 01/31/2015
Lab: B
Tested By: Kyle Fujimoto

Middle Channel
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1830								N/A - Not in Restricted Band and done via Conducted
2745	42.69	V	74	-31.31	Peak	1.25	0	
2745	33.58	V	54	-20.42	Avg	1.25	0	
3660	44.89	V	74	-29.11	Peak	1.25	270	
3660	34.72	V	54	-19.28	Avg	1.25	270	
4575	44.44	V	74	-29.56	Peak	1.25	135	
4575	30.98	V	54	-23.02	Avg	1.25	135	
5490	49.84	V	74	-24.16	Peak	1.35	125	
5490	41.69	V	54	-12.31	Avg	1.35	125	
6405								N/A - Not in Restricted Band and done via Conducted
7320								No Emissions Detected
8235								No Emissions Detected
9150								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol A - Module 4
ANT-916-CW-HW Antenna

Date: 01/31/2015
Lab: B
Tested By: Kyle Fujimoto

**Middle Channel
Transmit Mode - X-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1830								N/A - Not in Restricted Band and done via Conducted
2745	45.36	H	74	-28.64	Peak	1.25	0	
2745	39.74	H	54	-14.26	Avg	1.25	0	
3660	47.52	H	74	-26.48	Peak	1.25	45	
3660	43.01	H	54	-10.99	Avg	1.25	45	
4575	44.12	H	74	-29.88	Peak	1.25	135	
4575	29.47	H	54	-24.53	Avg	1.25	135	
5490	51.66	H	74	-22.34	Peak	1.25	180	
5490	44.23	H	54	-9.77	Avg	1.25	180	
6405								N/A - Not in Restricted Band and done via Conducted
7320								No Emissions Detected
8235								No Emissions Detected
9150								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol A - Module 4
ANT-916-CW-HW Antenna

Date: 01/31/2015
Lab: B
Tested By: Kyle Fujimoto

Middle Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1830								N/A - Not in Restricted Band and done via Conducted
2745	40.91	H	74	-33.09	Peak	1.25	225	
2745	40.11	H	54	-13.89	Avg	1.25	225	
3660	45.25	H	74	-28.75	Peak	1.25	135	
3660	40.11	H	54	-13.89	Avg	1.25	135	
4575	43.61	H	74	-30.39	Peak	1.35	225	
4575	29.29	H	54	-24.71	Avg	1.35	225	
5490	52.19	H	74	-21.81	Peak	1.25	225	
5490	47.23	H	54	-6.77	Avg	1.25	225	
6405								N/A - Not in Restricted Band and done via Conducted
7320								No Emissions Detected
8235								No Emissions Detected
9150								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol A - Module 4
ANT-916-CW-HW Antenna

Date: 01/31/2015
Lab: B
Tested By: Kyle Fujimoto

Middle Channel
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1830								N/A - Not in Restricted Band and done via Conducted
2745	44.77	H	74	-29.23	Peak	1.25	135	
2745	37.94	H	54	-16.06	Avg	1.25	135	
3660	48.36	H	74	-25.64	Peak	1.25	45	
3660	43.06	H	54	-10.94	Avg	1.25	45	
4575	44.65	H	74	-29.35	Peak	1.35	45	
4575	33.37	H	54	-20.63	Avg	1.35	45	
5490	51.48	H	74	-22.52	Peak	1.25	165	
5490	37.69	H	54	-16.31	Avg	1.25	165	
6405								N/A - Not in Restricted Band and done via Conducted
7320								No Emissions Detected
8235								No Emissions Detected
9150								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol A - Module 4
ANT-916-CW-HW Antenna

Date: 01/31/2015
Lab: B
Tested By: Kyle Fujimoto

**High Channel
Transmit Mode - X-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1853.3								N/A - Not in Restricted Band and done via Conducted
2779.9	43.28	V	74	-30.72	Peak	1.25	225	
2779.9	36.71	V	54	-17.29	Avg	1.25	225	
3706.6	47.25	V	74	-26.75	Peak	1.25	135	
3706.6	34.92	V	54	-19.08	Avg	1.25	135	
4633.25	44.01	V	74	-29.99	Peak	1.25	145	
4633.25	29.13	V	54	-24.87	Avg	1.25	145	
5559.9	50.98	V	74	-23.02	Peak	1.35	155	
5559.9	42.85	V	54	-11.15	Avg	1.35	155	
6486.55								N/A - Not in Restricted Band and done via Conducted
7413.2								No Emissions Detected
8339.85								No Emissions Detected
9266.5								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol A - Module 4
ANT-916-CW-HW Antenna

Date: 01/31/2015
Lab: B
Tested By: Kyle Fujimoto

**High Channel
Transmit Mode - Y-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1853.3								N/A - Not in Restricted Band and done via Conducted
2779.9	40.98	V	74	-33.02	Peak	1.25	315	
2779.9	35.55	V	54	-18.45	Avg	1.25	315	
3706.6	45.38	V	74	-28.62	Peak	1.25	155	
3706.6	34.68	V	54	-19.32	Avg	1.25	155	
4633.25	44.55	V	74	-29.45	Peak	1.25	225	
4633.25	33.76	V	54	-20.24	Avg	1.25	225	
5559.9	49.13	V	74	-24.87	Peak	1.25	135	
5559.9	38.51	V	54	-15.49	Avg	1.25	135	
6486.55								N/A - Not in Restricted Band and done via Conducted
7413.2								No Emissions Detected
8339.85								No Emissions Detected
9266.5								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol A - Module 4
ANT-916-CW-HW Antenna

Date: 01/31/2015
Lab: B
Tested By: Kyle Fujimoto

**High Channel
Transmit Mode - Z-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1853.3								N/A - Not in Restricted Band and done via Conducted
2779.9	42.61	V	74	-31.39	Peak	1.25	180	
2779.9	36.15	V	54	-17.85	Avg	1.25	180	
3706.6	44.01	V	74	-29.99	Peak	1.35	225	
3706.6	38.19	V	54	-15.81	Avg	1.35	225	
4633.25	44.88	V	74	-29.12	Peak	1.25	180	
4633.25	35.28	V	54	-18.72	Avg	1.25	180	
5559.9	51.45	V	74	-22.55	Peak	1.35	180	
5559.9	43.05	V	54	-10.95	Avg	1.35	180	
6486.55								N/A - Not in Restricted Band and done via Conducted
7413.2								No Emissions Detected
8339.85								No Emissions Detected
9266.5								No Emissions Detected

FCC 15.247

Linx Technologies
 Hummingbird MCA Module
 Model: HUM-900-PRO-CAS
 Configuration: Protocol A - Module 4
 ANT-916-CW-HW Antenna

Date: 01/31/2015
 Lab: B
 Tested By: Kyle Fujimoto

**High Channel
Transmit Mode - X-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1853.3								N/A - Not in Restricted Band and done via Conducted
2779.9	43.97	H	74	-30.03	Peak	1.25	155	
2779.9	35.31	H	54	-18.69	Avg	1.25	155	
3706.6	47.37	H	74	-26.63	Peak	1.35	165	
3706.6	41.69	H	54	-12.31	Avg	1.35	165	
4633.25	46.41	H	74	-27.59	Peak	1.25	175	
4633.25	30.35	H	54	-23.65	Avg	1.25	175	
5559.9	49.48	H	74	-24.52	Peak	1.35	225	
5559.9	41.92	H	54	-12.08	Avg	1.35	225	
6486.55								N/A - Not in Restricted Band and done via Conducted
7413.2								No Emissions Detected
8339.85								No Emissions Detected
9266.5								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol A - Module 4
ANT-916-CW-HW Antenna

Date: 01/31/2015
Lab: B
Tested By: Kyle Fujimoto

**High Channel
Transmit Mode - Y-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1853.3								N/A - Not in Restricted Band and done via Conducted
2779.9	40.67	H	74	-33.33	Peak	1.25	155	
2779.9	29.78	H	54	-24.22	Avg	1.25	155	
3706.6	44.89	H	74	-29.11	Peak	1.35	180	
3706.6	37.58	H	54	-16.42	Avg	1.35	180	
4633.25	44.57	H	74	-29.43	Peak	1.25	135	
4633.25	31.51	H	54	-22.49	Avg	1.25	135	
5559.9	51.72	H	74	-22.28	Peak	1.35	145	
5559.9	46.33	H	54	-7.67	Avg	1.35	145	
6486.55								N/A - Not in Restricted Band and done via Conducted
7413.2								No Emissions Detected
8339.85								No Emissions Detected
9266.5								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol A - Module 4
ANT-916-CW-HW Antenna

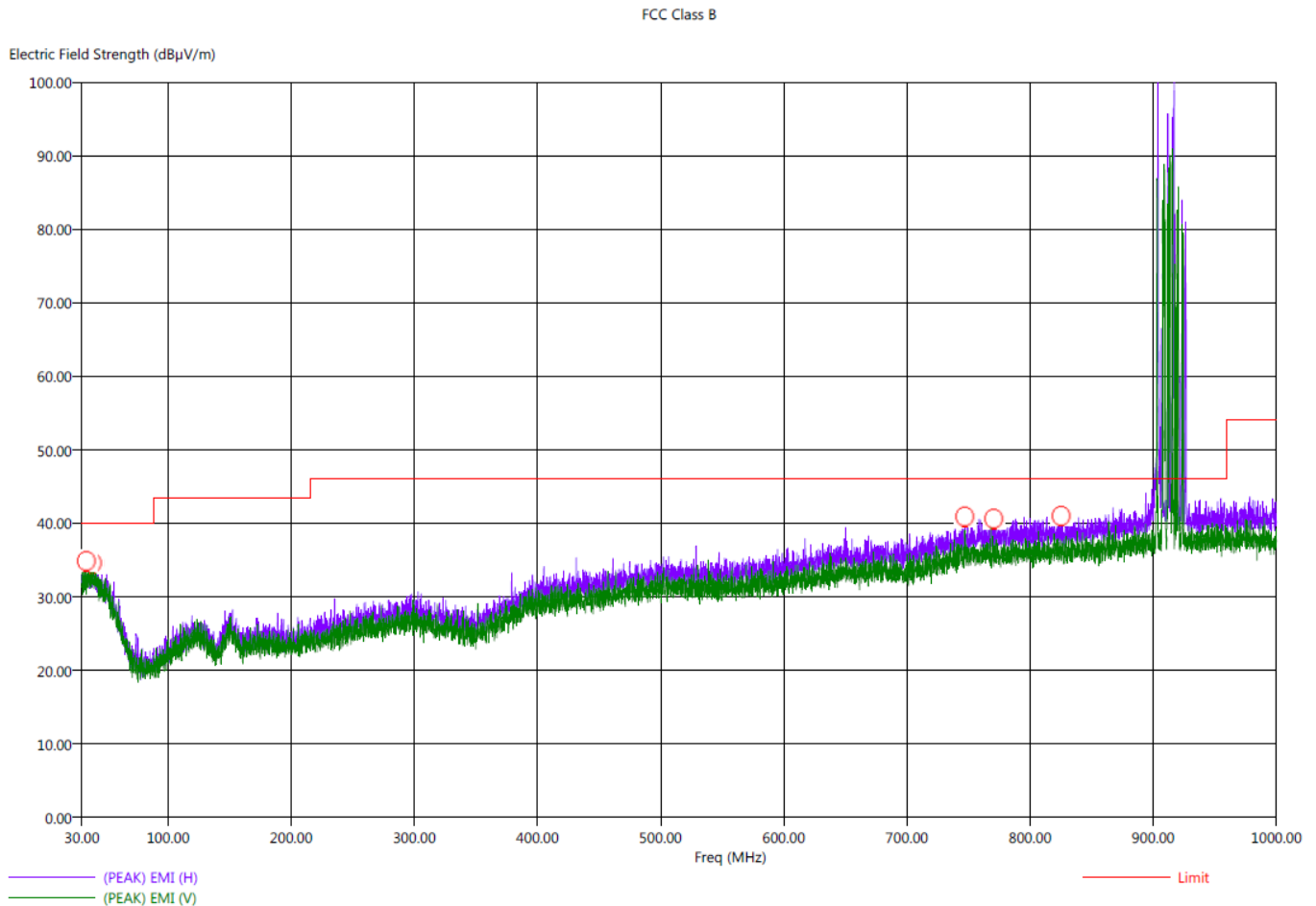
Date: 01/31/2015
Lab: B
Tested By: Kyle Fujimoto

**High Channel
Transmit Mode - Z-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1853.3								N/A - Not in Restricted Band and done via Conducted
2779.9	43.29	H	74	-30.71	Peak	1.25	135	
2779.9	36.73	H	54	-17.27	Avg	1.25	135	
3706.6	47.06	H	74	-26.94	Peak	1.35	125	
3706.6	41.41	H	54	-12.59	Avg	1.35	125	
4633.25	44.57	H	74	-29.43	Peak	1.25	165	
4633.25	30.48	H	54	-23.52	Avg	1.25	165	
5559.9	51.18	H	74	-22.82	Peak	1.35	175	
5559.9	43.02	H	54	-10.98	Avg	1.35	175	
6486.55								N/A - Not in Restricted Band and done via Conducted
7413.2								No Emissions Detected
8339.85								No Emissions Detected
9266.5								No Emissions Detected

Title: Pre-Scan - FCC Class B
File: Agilent - Radiated Pre-Scan 30-1000Mhz - FCC Class B_Module_4_Protocol_A_ANT-916-CW-HW_X-Axis_02-05-2015.set
Operator: Kenneth Lee
EUT Type: Hummingbird MCA
EUT Condition: Continuously Transmitting - Frequency Hopping - Protocol A - Module 4 - X-Axis - Worst Case
Comments: Customer: Linx Technologies
M/N: HUM-900-PRO-CAS
Note: Antenna - ANT-916-CW-HW

2/5/2015 10:01:43 AM
Sequence: Preliminary Scan

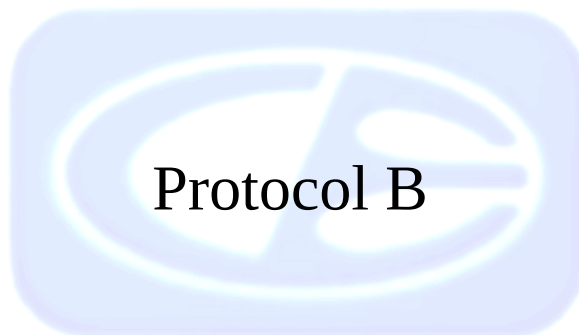


Title: Radiated Final - 30-1000 MHz - FCC Class B
File: Agilent - Radiated Final Scan 30-1000Mhz - FCC Class B_Module_4_Protocol_A_ANT-916-CW-HW_X-Axis_02-05-2015.set
Operator: Kenneth Lee
EUT Type: Hummingbird MCA
EUT Condition: Continuously Transmitting - Frequency Hopping - Protocol A - Module 4 - X-Axis - Worst Case
Comments: Customer: Linx Technologies
M/N: HUM-900-PRO-CAS
Note: Antenna - ANT-916-CW-HW

2/5/2015 10:36:56 AM
Sequence: Final Measurements

Final Scan - FCC Class B

Freq (MHz)	Pol	(PEAK) EMI (dBμV/m)	(QP) EMI (dBμV/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dBμV/m)	Transducer (dB)	Cable (dB)	Twr Ht (cm)	Ttbl Agl (deg)
33.60	V	35.00	30.79	-5.00	-9.21	40.00	23.63	0.38	175.49	202.00
38.60	H	35.32	31.29	-4.68	-8.71	40.00	24.08	0.42	335.67	359.50
40.00	H	36.27	31.35	-3.73	-8.65	40.00	24.17	0.43	191.79	83.25
747.10	H	40.80	36.24	-5.20	-9.76	46.00	25.76	2.35	336.08	297.75
770.50	H	40.67	36.54	-5.33	-9.46	46.00	25.90	2.36	221.94	128.50
825.30	H	41.56	37.10	-4.44	-8.90	46.00	26.15	2.45	143.37	203.50



FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-HW Antenna

Date: 02/02/2015
Lab: B
Tested By: Kyle Fujimoto

Low Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1805.94								N/A - Not in Restricted Band and done via Conducted
2708.91	41.61	V	74	-32.39	Peak	1.25	155	
2708.91	33.44	V	54	-20.56	Avg	1.25	155	
3611.88	46.05	V	74	-27.95	Peak	1.25	145	
3611.88	38.15	V	54	-15.85	Avg	1.25	145	
4514.86	42.78	V	74	-31.22	Peak	1.35	155	
4514.86	27.31	V	54	-26.69	Avg	1.35	155	
5417.83	52.49	V	74	-21.51	Peak	1.25	180	
5417.83	43.99	V	54	-10.01	Avg	1.25	180	
6320.8								N/A - Not in Restricted Band and done via Conducted
7223.77								No Emissions Detected
8126.74								No Emissions Detected
9029.71								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-HW Antenna

Date: 02/02/2015
Lab: B
Tested By: Kyle Fujimoto

Low Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1805.94								N/A - Not in Restricted Band and done via Conducted
2708.91	40.01	V	74	-33.99	Peak	1.25	155	
2708.91	28.33	V	54	-25.67	Avg	1.25	155	
3611.88	44.75	V	74	-29.25	Peak	1.35	165	
3611.88	36.04	V	54	-17.96	Avg	1.35	165	
4514.86	43.46	V	74	-30.54	Peak	1.25	155	
4514.86	29.28	V	54	-24.72	Avg	1.25	155	
5417.83	51.31	V	74	-22.69	Peak	1.35	180	
5417.83	43.27	V	54	-10.73	Avg	1.35	180	
6320.8								N/A - Not in Restricted Band and done via Conducted
7223.77								No Emissions Detected
8126.74								No Emissions Detected
9029.71								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-HW Antenna

Date: 02/02/2015
Lab: B
Tested By: Kyle Fujimoto

Low Channel
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1805.94								N/A - Not in Restricted Band and done via Conducted
2708.91	42.52	V	74	-31.48	Peak	1.25	180	
2708.91	35.07	V	54	-18.93	Avg	1.25	180	
3611.88	46.91	V	74	-27.09	Peak	1.35	175	
3611.88	38.09	V	54	-15.91	Avg	1.35	175	
4514.86	43.21	V	74	-30.79	Peak	1.25	185	
4514.86	28.73	V	54	-25.27	Avg	1.25	185	
5417.83	50.87	V	74	-23.13	Peak	1.35	315	
5417.83	38.16	V	54	-15.84	Avg	1.35	315	
6320.8								N/A - Not in Restricted Band and done via Conducted
7223.77								No Emissions Detected
8126.74								No Emissions Detected
9029.71								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-HW Antenna

Date: 02/02/2015
Lab: B
Tested By: Kyle Fujimoto

Low Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1805.94								N/A - Not in Restricted Band and done via Conducted
2708.91	43.38	H	74	-30.62	Peak	1.25	155	
2708.91	35.69	H	54	-18.31	Avg	1.25	155	
3611.88	48.55	H	74	-25.45	Peak	1.35	225	
3611.88	42.91	H	54	-11.09	Avg	1.35	225	
4514.86	41.29	H	74	-32.71	Peak	1.25	165	
4514.86	28.61	H	54	-25.39	Avg	1.25	165	
5417.83	52.64	H	74	-21.36	Peak	1.35	175	
5417.83	45.16	H	54	-8.84	Avg	1.35	175	
6320.8								N/A - Not in Restricted Band and done via Conducted
7223.77								No Emissions Detected
8126.74								No Emissions Detected
9029.71								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-HW Antenna

Date: 02/02/2015
Lab: B
Tested By: Kyle Fujimoto

Low Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1805.94								N/A - Not in Restricted Band and done via Conducted
2708.91	41.46	H	74	-32.54	Peak	1.25	155	
2708.91	29.68	H	54	-24.32	Avg	1.25	155	
3611.88	44.16	H	74	-29.84	Peak	1.15	125	
3611.88	34.89	H	54	-19.11	Avg	1.15	125	
4514.86	43.21	H	74	-30.79	Peak	1.25	155	
4514.86	31.08	H	54	-22.92	Avg	1.25	155	
5417.83	52.51	H	74	-21.49	Peak	1.35	225	
5417.83	45.43	H	54	-8.57	Avg	1.35	225	
6320.8								N/A - Not in Restricted Band and done via Conducted
7223.77								No Emissions Detected
8126.74								No Emissions Detected
9029.71								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-HW Antenna

Date: 02/02/2015
Lab: B
Tested By: Kyle Fujimoto

Low Channel
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1805.94								N/A - Not in Restricted Band and done via Conducted
2708.91	43.73	H	74	-30.27	Peak	1.25	155	
2708.91	38.62	H	54	-15.38	Avg	1.25	155	
3611.88	50.31	H	74	-23.69	Peak	1.25	315	
3611.88	45.76	H	54	-8.24	Avg	1.25	315	
4514.86	43.79	H	74	-30.21	Peak	1.25	315	
4514.86	31.95	H	54	-22.05	Avg	1.25	315	
5417.83	52.92	H	74	-21.08	Peak	1.25	135	
5417.83	45.41	H	54	-8.59	Avg	1.25	135	
6320.8								N/A - Not in Restricted Band and done via Conducted
7223.77								No Emissions Detected
8126.74								No Emissions Detected
9029.71								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-HW Antenna

Date: 02/02/2015
Lab: B
Tested By: Kyle Fujimoto

Middle Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1830								N/A - Not in Restricted Band and done via Conducted
2745	43.08	V	74	-30.92	Peak	1.25	155	
2745	29.55	V	54	-24.45	Avg	1.25	155	
3660	46.94	V	74	-27.06	Peak	1.25	145	
3660	39.93	V	54	-14.07	Avg	1.25	145	
4575	43.31	V	74	-30.69	Peak	1.35	155	
4575	28.06	V	54	-25.94	Avg	1.35	155	
5490	50.03	V	74	-23.97	Peak	1.25	155	
5490	39.07	V	54	-14.93	Avg	1.25	155	
6405								N/A - Not in Restricted Band and done via Conducted
7320								No Emissions Detected
8235								No Emissions Detected
9150								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-HW Antenna

Date: 02/02/2015
Lab: B
Tested By: Kyle Fujimoto

Middle Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1830								N/A - Not in Restricted Band and done via Conducted
2745	41.35	V	74	-32.65	Peak	1.25	155	
2745	25.93	V	54	-28.07	Avg	1.25	155	
3660	46.21	V	74	-27.79	Peak	1.25	90	
3660	38.99	V	54	-15.01	Avg	1.25	90	
4575	43.72	V	74	-30.28	Peak	1.25	135	
4575	28.32	V	54	-25.68	Avg	1.25	135	
5490	48.77	V	74	-25.23	Peak	1.25	125	
5490	34.41	V	54	-19.59	Avg	1.25	125	
6405								N/A - Not in Restricted Band and done via Conducted
7320								No Emissions Detected
8235								No Emissions Detected
9150								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-HW Antenna

Date: 02/02/2015
Lab: B
Tested By: Kyle Fujimoto

Middle Channel
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1830								N/A - Not in Restricted Band and done via Conducted
2745	43.41	V	74	-30.59	Peak	1.25	155	
2745	36.28	V	54	-17.72	Avg	1.25	155	
3660	44.51	V	74	-29.49	Peak	1.25	180	
3660	36.06	V	54	-17.94	Avg	1.25	180	
4575	43.89	V	74	-30.11	Peak	1.25	165	
4575	29.41	V	54	-24.59	Avg	1.25	165	
5490	51.82	V	74	-22.18	Peak	1.35	175	
5490	42.97	V	54	-11.03	Avg	1.35	175	
6405								N/A - Not in Restricted Band and done via Conducted
7320								No Emissions Detected
8235								No Emissions Detected
9150								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-HW Antenna

Date: 02/02/2015
Lab: B
Tested By: Kyle Fujimoto

Middle Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1830								N/A - Not in Restricted Band and done via Conducted
2745	43.85	H	74	-30.15	Peak	1.25	180	
2745	36.71	H	54	-17.29	Avg	1.25	180	
3660	46.61	H	74	-27.39	Peak	1.35	175	
3660	40.69	H	54	-13.31	Avg	1.35	175	
4575	42.65	H	74	-31.35	Peak	1.25	185	
4575	28.36	H	54	-25.64	Avg	1.25	185	
5490	52.41	H	74	-21.59	Peak	1.35	165	
5490	44.63	H	54	-9.37	Avg	1.35	165	
6405								N/A - Not in Restricted Band and done via Conducted
7320								No Emissions Detected
8235								No Emissions Detected
9150								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-HW Antenna

Date: 02/02/2015
Lab: B
Tested By: Kyle Fujimoto

Middle Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1830								N/A - Not in Restricted Band and done via Conducted
2745	41.24	H	74	-32.76	Peak	1.25	155	
2745	25.59	H	54	-28.41	Avg	1.25	155	
3660	45.71	H	74	-28.29	Peak	1.35	165	
3660	35.51	H	54	-18.49	Avg	1.35	165	
4575	44.31	H	74	-29.69	Peak	1.25	175	
4575	30.72	H	54	-23.28	Avg	1.25	175	
5490	51.66	H	74	-22.34	Peak	1.35	185	
5490	43.34	H	54	-10.66	Avg	1.35	185	
6405								N/A - Not in Restricted Band and done via Conducted
7320								No Emissions Detected
8235								No Emissions Detected
9150								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-HW Antenna

Date: 02/02/2015
Lab: B
Tested By: Kyle Fujimoto

Middle Channel
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1830								N/A - Not in Restricted Band and done via Conducted
2745	43.74	H	74	-30.26	Peak	1.25	155	
2745	36.97	H	54	-17.03	Avg	1.25	155	
3660	49.27	H	74	-24.73	Peak	1.35	45	
3660	43.91	H	54	-10.09	Avg	1.35	45	
4575	44.04	H	74	-29.96	Peak	1.25	155	
4575	29.28	H	54	-24.72	Avg	1.25	155	
5490	50.55	H	74	-23.45	Peak	1.15	165	
5490	39.95	H	54	-14.05	Avg	1.15	165	
6405								N/A - Not in Restricted Band and done via Conducted
7320								No Emissions Detected
8235								No Emissions Detected
9150								No Emissions Detected

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-HW Antenna

Date: 02/02/2015
Lab: B
Tested By: Kyle Fujimoto

**High Channel
Transmit Mode - X-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1852.55								N/A - Not in Restricted Band and done via Conducted
2778.83	43.68	V	74	-30.32	Peak	1.25	155	
2778.83	36.22	V	54	-17.78	Avg	1.25	155	
3705.11	45.24	V	74	-28.76	Peak	1.35	165	
3705.1	36.64	V	54	-17.36	Avg	1.35	165	
4631.39	43.74	V	74	-30.26	Peak	1.25	175	
4631.39	28.32	V	54	-25.68	Avg	1.25	175	
5557.66	51.49	V	74	-22.51	Peak	1.35	185	
5557.66	43.07	V	54	-10.93	Avg	1.35	185	
6483.94								N/A - Not in Restricted Band and done via Conducted
6483.94								
7410.22								No Emissions Detected
7410.22								
8336.49								No Emissions Detected
8336.49								
9262.7								No Emissions Detected
9262.7								

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-HW Antenna

Date: 02/02/2015
Lab: B
Tested By: Kyle Fujimoto

**High Channel
Transmit Mode - Y-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1852.55								N/A - Not in Restricted Band and done via Conducted
2778.83	41.71	V	74	-32.29	Peak	1.25	155	
2778.83	30.16	V	54	-23.84	Avg	1.25	155	
3705.11	46.79	V	74	-27.21	Peak	1.25	165	
3705.1	39.64	V	54	-14.36	Avg	1.25	165	
4631.39	42.48	V	74	-31.52	Peak	1.35	175	
4631.39	28.34	V	54	-25.66	Avg	1.35	175	
5557.66	48.58	V	74	-25.42	Peak	1.25	185	
5557.66	36.08	V	54	-17.92	Avg	1.25	185	
6483.94								N/A - Not in Restricted Band and done via Conducted
6483.94								
7410.22								No Emissions Detected
7410.22								
8336.49								No Emissions Detected
8336.49								
9262.7								No Emissions Detected
9262.7								

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-HW Antenna

Date: 02/02/2015
Lab: B
Tested By: Kyle Fujimoto

**High Channel
Transmit Mode - Z-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1852.55								N/A - Not in Restricted Band and done via Conducted
2778.83	43.51	V	74	-30.49	Peak	1.25	155	
2778.83	35.56	V	54	-18.44	Avg	1.25	155	
3705.11	45.27	V	74	-28.73	Peak	1.25	165	
3705.1	32.78	V	54	-21.22	Avg	1.25	165	
4631.39	44.73	V	74	-29.27	Peak	1.25	155	
4631.39	34.08	V	54	-19.92	Avg	1.25	155	
5557.66	50.43	V	74	-23.57	Peak	1.35	165	
5557.66	40.63	V	54	-13.37	Avg	1.35	165	
6483.94								N/A - Not in Restricted Band and done via Conducted
6483.94								
7410.22								No Emissions Detected
7410.22								
8336.49								No Emissions Detected
8336.49								
9262.7								No Emissions Detected
9262.7								

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-HW Antenna

Date: 02/02/2015
Lab: B
Tested By: Kyle Fujimoto

**High Channel
Transmit Mode - X-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1852.55								N/A - Not in Restricted Band and done via Conducted
2778.83	43.63	H	74	-30.37	Peak	1.25	155	
2778.83	36.55	H	54	-17.45	Avg	1.25	155	
3705.11	47.31	H	74	-26.69	Peak	1.25	165	
3705.1	38.48	H	54	-15.52	Avg	1.25	165	
4631.39	43.77	H	74	-30.23	Peak	1.35	175	
4631.39	29.81	H	54	-24.19	Avg	1.35	175	
5557.66	49.11	H	74	-24.89	Peak	1.25	185	
5557.66	32.74	H	54	-21.26	Avg	1.25	185	
6483.94								N/A - Not in Restricted Band and done via Conducted
6483.94								
7410.22								No Emissions Detected
7410.22								
8336.49								No Emissions Detected
8336.49								
9262.7								No Emissions Detected
9262.7								

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-HW Antenna

Date: 02/02/2015
Lab: B
Tested By: Kyle Fujimoto

**High Channel
Transmit Mode - Y-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1852.55								N/A - Not in Restricted Band and done via Conducted
2778.83	41.53	H	74	-32.47	Peak	1.25	155	
2778.83	32.08	H	54	-21.92	Avg	1.25	155	
3705.11	44.78	H	74	-29.22	Peak	1.35	145	
3705.1	34.56	H	54	-19.44	Avg	1.35	145	
4631.39	43.89	H	74	-30.11	Peak	1.25	155	
4631.39	28.74	H	54	-25.26	Avg	1.25	155	
5557.66	53.49	H	74	-20.51	Peak	1.25	255	
5557.66	45.98	H	54	-8.02	Avg	1.25	255	
6483.94								N/A - Not in Restricted Band and done via Conducted
6483.94								
7410.22								No Emissions Detected
7410.22								
8336.49								No Emissions Detected
8336.49								
9262.7								No Emissions Detected
9262.7								

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-CAS
Configuration: Protocol B - Module 4
ANT-916-CW-HW Antenna

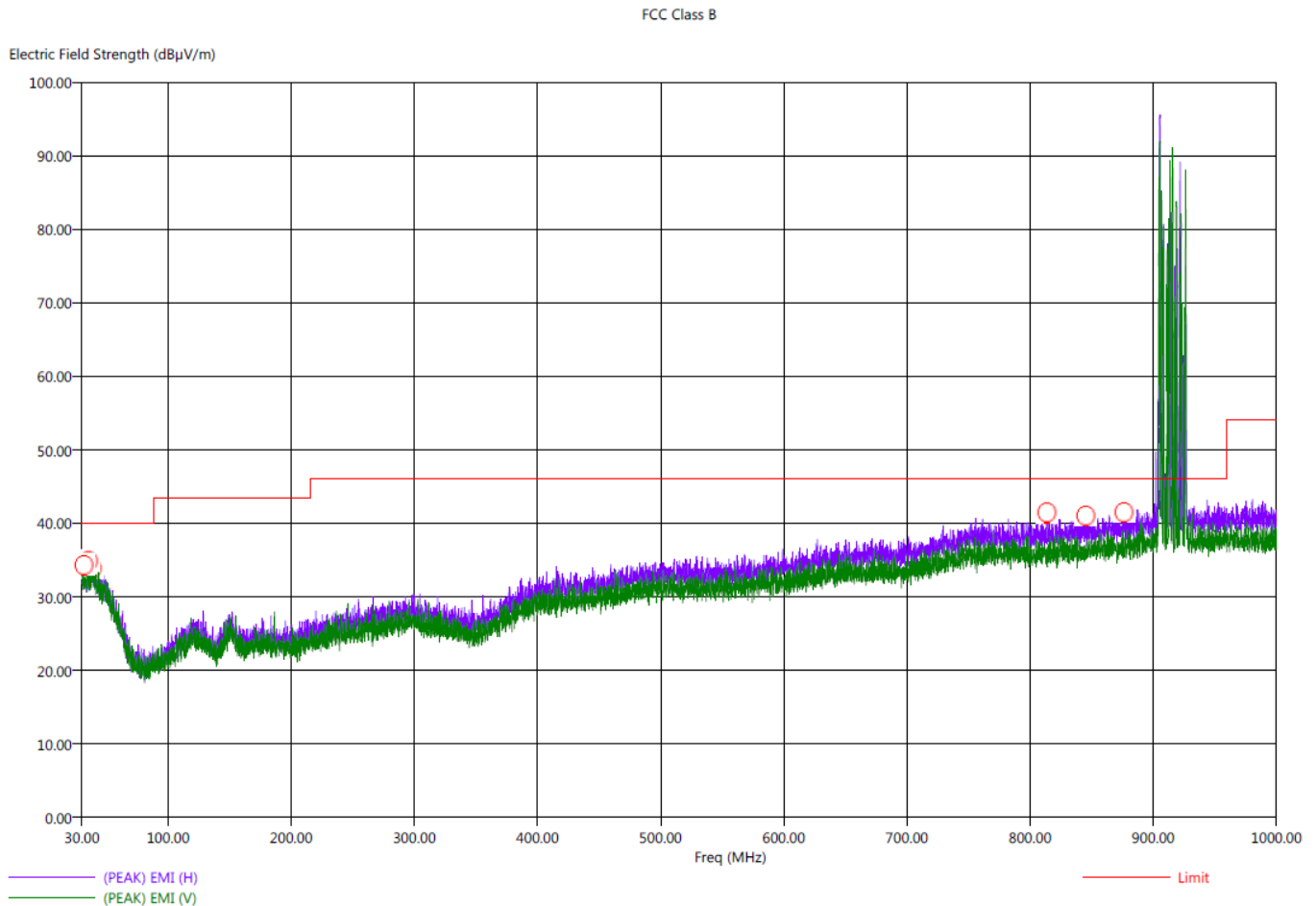
Date: 02/02/2015
Lab: B
Tested By: Kyle Fujimoto

**High Channel
Transmit Mode - Z-Axis**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1852.55								N/A - Not in Restricted Band and done via Conducted
2778.83	42.67	H	74	-31.33	Peak	1.25	225	
2778.83	33.16	H	54	-20.84	Avg	1.25	225	
3705.11	46.58	H	74	-27.42	Peak	1.35	135	
3705.1	36.44	H	54	-17.56	Avg	1.35	135	
4631.39	44.06	H	74	-29.94	Peak	1.25	175	
4631.39	30.54	H	54	-23.46	Avg	1.25	175	
5557.66	51.06	H	74	-22.94	Peak	1.25	185	
5557.66	38.74	H	54	-15.26	Avg	1.25	185	
6483.94								N/A - Not in Restricted Band and done via Conducted
6483.94								
7410.22								No Emissions Detected
7410.22								
8336.49								No Emissions Detected
8336.49								
9262.7								No Emissions Detected
9262.7								

Title: Pre-Scan - FCC Class B
File: Agilent - Radiated Pre-Scan 30-1000Mhz - FCC Class B_Module_4_Protocol_B_ANT-916-CW-HW_Z-Axis_02-05-2015.set
Operator: Kenneth Lee
EUT Type: Hummingbird MCA
EUT Condition: Continuously Transmitting - Frequency Hopping - Protocol B - Module 4 - Z-Axis - Worst Case
Comments: Customer: Linx Technologies
M/N: HUM-900-PRO-CAS
Note: Antenna - ANT-916-CW-HW

2/5/2015 1:02:42 PM
Sequence: Preliminary Scan



Title: Radiated Final - 30-1000 MHz - FCC Class B
File: Agilent - Radiated Final Scan 30-1000Mhz - FCC Class B_Module 4_Protocol B_ANT-916-CW-HW_Z-Axis_02-05-2015.set
Operator: Kenneth Lee
EUT Type: Hummingbird MCA
EUT Condition: Continuously Transmitting - Frequency Hopping - Protocol B - Module 4 - Z-Axis - Worst Case
Comments: Customer: Linx Technologies
M/N: HUM-900-PRO-CAS
Note: Antenna - ANT-916-CW-HW

2/5/2015 1:14:58 PM
Sequence: Final Measurements

Final Scan - FCC Class B

Freq (MHz)	Pol	(PEAK) EMI (dB μ V/m)	(QP) EMI (dB μ V/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dB μ V/m)	Transducer (dB)	Cable (dB)	Twr Ht (cm)	Ttbl Agl (deg)
31.70	V	34.75	30.64	-5.25	-9.36	40.00	23.51	0.37	352.20	157.50
35.50	H	35.99	31.00	-4.01	-9.00	40.00	23.79	0.40	223.73	71.25
38.50	H	35.24	31.28	-4.76	-8.72	40.00	24.09	0.42	191.37	322.25
813.70	H	41.17	36.91	-4.83	-9.09	46.00	26.04	2.41	159.67	211.75
845.30	H	41.02	37.26	-4.98	-8.74	46.00	26.36	2.51	191.55	156.75
876.40	H	42.39	37.90	-3.61	-8.10	46.00	26.72	2.58	368.38	171.00