

APPENDIX E***DATA SHEETS***

HUM-900-PRO-UFL
ANT-PW-QW-UFL
Protocol A

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-UFL
Configuration: Protocol A
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	40.78	V	74	-33.22	Peak	2.25	120	
2708.91	33.04	V	54	-20.96	Avg	2.25	120	
3611.88	44.02	V	74	-29.98	Peak	1.5	250	
3611.88	35.37	V	54	-18.63	Avg	1.5	250	
4514.86	43.27	V	74	-30.73	Peak	1.1	135	
4514.86	33.44	V	54	-20.56	Avg	1.1	135	
5417.83	49.34	V	74	-24.66	Peak	2.75	180	
5417.83	42.01	V	54	-11.99	Avg	2.75	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-UFL
 Configuration: Protocol A
 ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
 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	41.56	V	74	-32.44	Peak	2.25	245	
2708.91	34.15	V	54	-19.85	Avg	2.25	245	
3611.88	45.64	V	74	-28.36	Peak	1	345	
3611.88	39.33	V	54	-14.67	Avg	1	345	
4514.86	45.91	V	74	-28.09	Peak	1	200	
4514.86	37.88	V	54	-16.12	Avg	1	200	
5417.83	48	V	74	-26	Peak	1.5	210	
5417.83	38.05	V	54	-15.95	Avg	1.5	210	
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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Linx Technologies
 Hummingbird MCA Module
 Model: HUM-900-PRO-UFL
 Configuration: Protocol A
 ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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 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	39.3	V	74	-34.7	Peak	1	190	
2708.91	28.48	V	54	-25.52	Avg	1	190	
3611.88	45.05	V	74	-28.95	Peak	1	125	
3611.88	38.32	V	54	-15.68	Avg	1	125	
4514.86	45.53	V	74	-28.47	Peak	1	65	
4514.86	39.29	V	54	-14.71	Avg	1	65	
5417.83	47.46	V	74	-26.54	Peak	3	135	
5417.83	36.74	V	54	-17.26	Avg	3	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
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ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	38.91	H	74	-35.09	Peak	1.1	135	
2708.91	26.57	H	54	-27.43	Avg	1.1	135	
3611.88	45.39	H	74	-28.61	Peak	1.25	270	
3611.88	38.94	H	54	-15.06	Avg	1.25	270	
4514.86	45.27	H	74	-28.73	Peak	1	335	
4514.86	38.29	H	54	-15.71	Avg	1	335	
5417.83	48.87	H	74	-25.13	Peak	1	235	
5417.83	40.06	H	54	-13.94	Avg	1	235	
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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Linx Technologies
Hummingbird MCA Module
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ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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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	40.71	H	74	-33.29	Peak	1.25	160	
2708.91	31.24	H	54	-22.76	Avg	1.25	160	
3611.88	44.97	H	74	-29.03	Peak	1.35	350	
3611.88	37.74	H	54	-16.26	Avg	1.35	350	
4514.86	45.01	H	74	-28.99	Peak	1	210	
4514.86	38.12	H	54	-15.88	Avg	1	210	
5417.83	47.61	H	74	-26.39	Peak	2.75	325	
5417.83	35.85	H	54	-18.15	Avg	2.75	325	
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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Linx Technologies
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Date: 02/09/2015
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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	39.65	H	74	-34.35	Peak	1	160	
2708.91	29.51	H	54	-24.49	Avg	1	160	
3611.88	44.87	H	74	-29.13	Peak	1	45	
3611.88	37.32	H	54	-16.68	Avg	1	45	
4514.86	45.58	H	74	-28.42	Peak	1	180	
4514.86	39.29	H	54	-14.71	Avg	1	180	
5417.83	49.4	H	74	-24.6	Peak	1	210	
5417.83	40.45	H	54	-13.55	Avg	1	210	
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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Linx Technologies
 Hummingbird MCA Module
 Model: HUM-900-PRO-UFL
 Configuration: Protocol A
 ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
 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	40.43	V	74	-33.57	Peak	1.15	45	
2745	27.4	V	54	-26.6	Avg	1.15	45	
3660	44.24	V	74	-29.76	Peak	1.25	160	
3660	35.52	V	54	-18.48	Avg	1.25	160	
4575	46.82	V	74	-27.18	Peak	1.1	290	
4575	40.95	V	54	-13.05	Avg	1.1	290	
5490	48.87	V	74	-25.13	Peak	1.75	180	
5490	40.5	V	54	-13.5	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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Linx Technologies
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Date: 02/09/2015
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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	39.49	V	74	-34.51	Peak	1.1	210	
2745	28.35	V	54	-25.65	Avg	1.1	210	
3660	46.32	V	74	-27.68	Peak	1.15	45	
3660	38.87	V	54	-15.13	Avg	1.15	45	
4575	46.5	V	74	-27.5	Peak	1.1	220	
4575	41.15	V	54	-12.85	Avg	1.1	220	
5490	48.9	V	74	-25.1	Peak	1.75	170	
5490	38.07	V	54	-15.93	Avg	1.75	170	
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	40.69	V	74	-33.31	Peak	1.75	180	
2745	29.95	V	54	-24.05	Avg	1.75	180	
3660	45.37	V	74	-28.63	Peak	1	110	
3660	38.7	V	54	-15.3	Avg	1	110	
4575	45.48	V	74	-28.52	Peak	1	195	
4575	37.69	V	54	-16.31	Avg	1	195	
5490	47.45	V	74	-26.55	Peak	1.1	135	
5490	35.1	V	54	-18.9	Avg	1.1	135	
6405								N/A - Not in Restricted Band and done via Conducted
7320								No Emissions Detected
7320								
8235								No Emissions Detected
8235								
9150								No Emissions Detected
9150								

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Linx Technologies
Hummingbird MCA Module
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Date: 02/09/2015
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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	40.65	H	74	-33.35	Peak	1.5	230	
2745	30.12	H	54	-23.88	Avg	1.5	230	
3660	44.85	H	74	-29.15	Peak	1	180	
3660	35.06	H	54	-18.94	Avg	1	180	
4575	47.32	H	74	-26.68	Peak	1	160	
4575	41.41	H	54	-12.59	Avg	1	160	
5490	48.67	H	74	-25.33	Peak	1	270	
5490	39.89	H	54	-14.11	Avg	1	270	
6405								N/A - Not in Restricted Band and done via Conducted
7320								No Emissions Detected
7320								
8235								No Emissions Detected
8235								
9150								No Emissions Detected
9150								

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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	40.7	H	74	-33.3	Peak	1	260	
2745	30.98	H	54	-23.02	Avg	1	260	
3660	43.39	H	74	-30.61	Peak	1.1	345	
3660	34.82	H	54	-19.18	Avg	1.1	345	
4575	45.6	H	74	-28.4	Peak	1	235	
4575	38.72	H	54	-15.28	Avg	1	235	
5490	47.97	H	74	-26.03	Peak	1.15	0	
5490	35.94	H	54	-18.06	Avg	1.15	0	
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-UFL
 Configuration: Protocol A
 ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
 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	40.31	H	74	-33.69	Peak	1.1	90	
2745	28.88	H	54	-25.12	Avg	1.1	90	
3660	46.65	H	74	-27.35	Peak	2	270	
3660	41.62	H	54	-12.38	Avg	2	270	
4575	47.78	H	74	-26.22	Peak	1.25	235	
4575	41.16	H	54	-12.84	Avg	1.25	235	
5490	49.95	H	74	-24.05	Peak	1	180	
5490	42.1	H	54	-11.9	Avg	1	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-UFL
Configuration: Protocol A
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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
1853.3								N/A - Not in Restricted Band and done via Conducted
2779.9	41.08	V	74	-32.92	Peak	1	180	
2779.9	27.35	V	54	-26.65	Avg	1	180	
3706.6	45.64	V	74	-28.36	Peak	1.25	160	
3706.6	36.1	V	54	-17.9	Avg	1.25	160	
4633.25	47.22	V	74	-26.78	Peak	1.25	230	
4633.25	41.64	V	54	-12.36	Avg	1.25	230	
5559.9	49.67	V	74	-24.33	Peak	1	230	
5559.9	41.06	V	54	-12.94	Avg	1	230	
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-UFL
 Configuration: Protocol A
 ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
 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
1853.3								N/A - Not in Restricted Band and done via Conducted
2779.9	40.06	V	74	-33.94	Peak	1	90	
2779.9	28.98	V	54	-25.02	Avg	1	90	
3706.6	46.78	V	74	-27.22	Peak	1	45	
3706.6	39.15	V	54	-14.85	Avg	1	45	
4633.25	46.87	V	74	-27.13	Peak	1	45	
4633.25	41.15	V	54	-12.85	Avg	1	45	
5559.9	49.37	V	74	-24.63	Peak	1.35	235	
5559.9	39.44	V	54	-14.56	Avg	1.35	235	
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-UFL
Configuration: Protocol A
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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
1853.3								N/A - Not in Restricted Band and done via Conducted
2779.9	41.14	V	74	-32.86	Peak	2.25	15	
2779.9	30.78	V	54	-23.22	Avg	2.25	15	
3706.6	46.65	V	74	-27.35	Peak	1.25	235	
3706.6	39.55	V	54	-14.45	Avg	1.25	235	
4633.25	46.87	V	74	-27.13	Peak	1.25	45	
4633.25	39.86	V	54	-14.14	Avg	1.25	45	
5559.9	48.34	V	74	-25.66	Peak	1	180	
5559.9	36.36	V	54	-17.64	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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Linx Technologies
 Hummingbird MCA Module
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 ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
 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
1853.3								N/A - Not in Restricted Band and done via Conducted
2779.9	39.88	H	74	-34.12	Peak	1.35	180	
2779.9	27.76	H	54	-26.24	Avg	1.35	180	
3706.6	45.65	H	74	-28.35	Peak	1	90	
3706.6	35.78	H	54	-18.22	Avg	1	90	
4633.25	48.29	H	74	-25.71	Peak	1	300	
4633.25	42.75	H	54	-11.25	Avg	1	300	
5559.9	49.14	H	74	-24.86	Peak	1.75	235	
5559.9	40.8	H	54	-13.2	Avg	1.75	235	
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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Linx Technologies
 Hummingbird MCA Module
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 Configuration: Protocol A
 ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
 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
1853.3								N/A - Not in Restricted Band and done via Conducted
2779.9	41.4	H	74	-32.6	Peak	1	195	
2779.9	31.78	H	54	-22.22	Avg	1	195	
3706.6	43.77	H	74	-30.23	Peak	2	135	
3706.6	34.68	H	54	-19.32	Avg	2	135	
4633.25	45.9	H	74	-28.1	Peak	2	235	
4633.25	38.97	H	54	-15.03	Avg	2	235	
5559.9	48.15	H	74	-25.85	Peak	2.25	190	
5559.9	35.13	H	54	-18.87	Avg	2.25	190	
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: 02/09/2015
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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	41.45	H	74	-32.55	Peak	2	60	
2779.9	29.66	H	54	-24.34	Avg	2	60	
3706.6	46.98	H	74	-27.02	Peak	2.25	135	
3706.6	41.87	H	54	-12.13	Avg	2.25	135	
4633.25	48.37	H	74	-25.63	Peak	1.75	15	
4633.25	41.03	H	54	-12.97	Avg	1.75	15	
5559.9	50.65	H	74	-23.35	Peak	1	0	
5559.9	45.33	H	54	-8.67	Avg	1	0	
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 and FCC Class B

Linx Technologies
 Hummingbird MCA Module
 Model: HUM-900-PRO-UFL
 Configuration: Protocol A
 ANT-916-PW-QW-UFL Antenna

Dates: 02/06/2015 and 02/09/2015

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

Title: Pre-Scan - FCC Class B

File: Agilent - Radiated Pre-Scan 30-1000MHz - FCC Class B_Module_1_Protocol_A_ANT-916-PW-QW-UFL_Y-Axis_02-06-2015.set

Operator: Kenneth Lee

EUT Type: Hummingbird MCA

EUT Condition: Continuously Transmitting - Frequency Hopping - Protocol A - Module 1 - Y-Axis - Worst Case

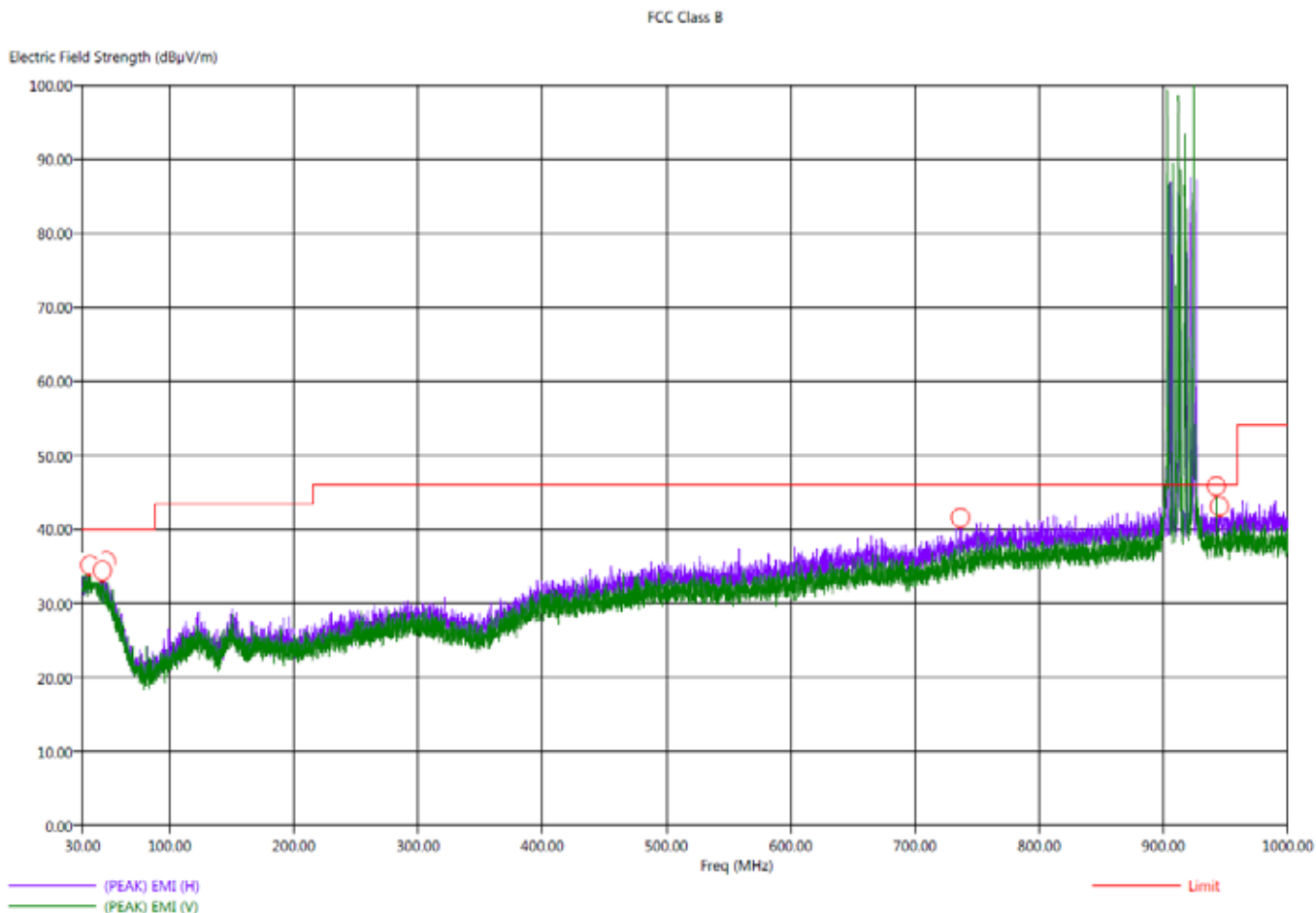
Comments: Customer: Linx Technologies

M/N: HUM-900-PRO-UFL

Note: Antenna - ANT-916-PW-QW-UFL

2/6/2015 8:06:02 AM

Sequence: Preliminary Scan



Title: Radiated Final - 30-1000 MHz - FCC Class B
 File: Agilent - Radiated Final Scan 30-1000MHz - FCC Class B_Module 1_Protocol A_ANT-916-PW-QW-UFL_Y-Axis_02-06-2015.set
 Operator: Kenneth Lee
 EUT Type: Hummingbird MCA
 EUT Condition: Continuously Transmitting - Frequency Hopping - Protocol A - Module 1 - Y-Axis - Worst Case
 Comments: Customer: Linx Technologies
 M/N: HUM-900-PRO-UFL
 Note: Antenna - ANT-916-PW-QW-UFL

2/6/2015 8:16:54 AM
 Sequence: Final Measurements

Final Scan - FCC Class B

Freq (MHz)	Pol	(PEAK) EMI (dBuV/m)	(QP) EMI (dBuV/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dBuV/m)	Transducer (dB)	Cable (dB)	Twr Ht (cm)	Ttbl Aql (deg)
36.00	H	35.69	31.26	-4.31	-8.74	40.00	23.76	0.40	143.19	257.75
46.00	V	34.19	30.05	-5.81	-9.95	40.00	22.47	0.48	336.32	118.00
49.10	H	33.72	29.79	-6.28	-10.21	40.00	22.16	0.50	240.08	120.50
736.60	H	40.13	36.02	-5.87	-9.98	46.00	25.31	2.33	271.61	97.00
942.70	V	43.80	39.56	-2.20	-6.44	46.00	27.60	2.70	127.55	107.50
945.00	H	43.27	39.34	-2.73	-6.66	46.00	27.64	2.70	287.97	251.25



FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-UFL
Configuration: Protocol B
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	41.39	V	74	-32.61	Peak	1.75	135	
2708.91	32.73	V	54	-21.27	Avg	1.75	135	
3611.88	44.29	V	74	-29.71	Peak	2.75	340	
3611.88	35.44	V	54	-18.56	Avg	2.75	340	
4514.86	44.62	V	74	-29.38	Peak	3	260	
4514.86	34.04	V	54	-19.96	Avg	3	260	
5417.83	47.98	V	74	-26.02	Peak	1.1	250	
5417.83	35.92	V	54	-18.08	Avg	1.1	250	
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-UFL
Configuration: Protocol B
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	42.18	V	74	-31.82	Peak	1.15	235	
2708.91	33.47	V	54	-20.53	Avg	1.15	235	
3611.88	45.65	V	74	-28.35	Peak	1.1	230	
3611.88	38.07	V	54	-15.93	Avg	1.1	230	
4514.86	45.97	V	74	-28.03	Peak	1.15	210	
4514.86	37.9	V	54	-16.1	Avg	1.15	210	
5417.83	48.71	V	74	-25.29	Peak	1.25	155	
5417.83	37.42	V	54	-16.58	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-UFL
Configuration: Protocol B
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	39.58	V	74	-34.42	Peak	1	45	
2708.91	28.82	V	54	-25.18	Avg	1	45	
3611.88	45.17	V	74	-28.83	Peak	1	225	
3611.88	35.68	V	54	-18.32	Avg	1	225	
4514.86	43.05	V	74	-30.95	Peak	1.15	320	
4514.86	31.9	V	54	-22.1	Avg	1.15	320	
5417.83	47.61	V	74	-26.39	Peak	1	90	
5417.83	34.61	V	54	-19.39	Avg	1	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-UFL
Configuration: Protocol B
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	40.01	H	74	-33.99	Peak	1.25	260	
2708.91	30.59	H	54	-23.41	Avg	1.25	260	
3611.88	45.94	H	74	-28.06	Peak	1	160	
3611.88	38.06	H	54	-15.94	Avg	1	160	
4514.86	46.81	H	74	-27.19	Peak	1	345	
4514.86	38.81	H	54	-15.19	Avg	1	345	
5417.83	49.57	H	74	-24.43	Peak	1	200	
5417.83	39.7	H	54	-14.3	Avg	1	200	
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-UFL
Configuration: Protocol B
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	40.9	H	74	-33.1	Peak	1	180	
2708.91	30.54	H	54	-23.46	Avg	1	180	
3611.88	43.52	H	74	-30.48	Peak	1	195	
3611.88	34.4	H	54	-19.6	Avg	1	195	
4514.86	44.78	H	74	-29.22	Peak	1	210	
4514.86	35.77	H	54	-18.23	Avg	1	210	
5417.83	47.41	H	74	-26.59	Peak	1	70	
5417.83	33.75	H	54	-20.25	Avg	1	70	
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-UFL
Configuration: Protocol B
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	39.59	H	74	-34.41	Peak	1	135	
2708.91	27.77	H	54	-26.23	Avg	1	135	
3611.88	45.67	H	74	-28.33	Peak	2	100	
3611.88	37.19	H	54	-16.81	Avg	2	100	
4514.86	44.96	H	74	-29.04	Peak	1	45	
4514.86	36.35	H	54	-17.65	Avg	1	45	
5417.83	48.95	H	74	-25.05	Peak	1	235	
5417.83	38.62	H	54	-15.38	Avg	1	235	
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-UFL
Configuration: Protocol B
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	40.04	V	74	-33.96	Peak	2.75	45	
2745	29.3	V	54	-24.7	Avg	2.75	45	
3660	44.62	V	74	-29.38	Peak	1.25	180	
3660	36.59	V	54	-17.41	Avg	1.25	180	
4575	45.35	V	74	-28.65	Peak	1	210	
4575	36.08	V	54	-17.92	Avg	1	210	
5490	48.45	V	74	-25.55	Peak	1	250	
5490	36.41	V	54	-17.59	Avg	1	250	
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-UFL
Configuration: Protocol B
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	39.85	V	74	-34.15	Peak	1.15	200	
2745	28.26	V	54	-25.74	Avg	1.15	200	
3660	47.06	V	74	-26.94	Peak	1	335	
3660	41.1	V	54	-12.9	Avg	1	335	
4575	46.75	V	74	-27.25	Peak	1	180	
4575	37.94	V	54	-16.06	Avg	1	180	
5490	48.73	V	74	-25.27	Peak	1	345	
5490	37.1	V	54	-16.9	Avg	1	345	
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-UFL
Configuration: Protocol B
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	40.07	V	74	-33.93	Peak	1	80	
2745	27.57	V	54	-26.43	Avg	1	80	
3660	43.93	V	74	-30.07	Peak	1	90	
3660	35.23	V	54	-18.77	Avg	1	90	
4575	46.52	V	74	-27.48	Peak	1	135	
4575	38.36	V	54	-15.64	Avg	1	135	
5490	49.12	V	74	-24.88	Peak	1	135	
5490	37.98	V	54	-16.02	Avg	1	135	
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-UFL
Configuration: Protocol B
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	40.51	H	74	-33.49	Peak	1	235	
2745	27.71	H	54	-26.29	Avg	1	235	
3660	45.57	H	74	-28.43	Peak	1.1	250	
3660	39.23	H	54	-14.77	Avg	1.1	250	
4575	46.83	H	74	-27.17	Peak	1	0	
4575	39.27	H	54	-14.73	Avg	1	0	
5490	49.07	H	74	-24.93	Peak	1.1	270	
5490	36.86	H	54	-17.14	Avg	1.1	270	
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-UFL
Configuration: Protocol B
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	40.58	H	74	-33.42	Peak	1.15	135	
2745	28.64	H	54	-25.36	Avg	1.15	135	
3660	44.19	H	74	-29.81	Peak	1.25	65	
3660	35.54	H	54	-18.46	Avg	1.25	65	
4575	45.73	H	74	-28.27	Peak	1	45	
4575	36.17	H	54	-17.83	Avg	1	45	
5490	48.1	H	74	-25.9	Peak	1	45	
5490	33.62	H	54	-20.38	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

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-PRO-UFL
Configuration: Protocol B
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	40.3	H	74	-33.7	Peak	1	220	
2745	38.92	H	54	-15.08	Avg	1	220	
3660	45.16	H	74	-28.84	Peak	1.5	170	
3660	38.11	H	54	-15.89	Avg	1.5	170	
4575	46.79	H	74	-27.21	Peak	1.25	210	
4575	39.29	H	54	-14.71	Avg	1.25	210	
5490	49.99	H	74	-24.01	Peak	1.75	250	
5490	39.75	H	54	-14.25	Avg	1.75	250	
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-UFL
Configuration: Protocol B
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	40.72	V	74	-33.28	Peak	1.25	135	
2778.83	29.12	V	54	-24.88	Avg	1.25	135	
3705.1	44.06	V	74	-29.94	Peak	1	340	
3705.1	35.2	V	54	-18.8	Avg	1	340	
4631.4	44.7	V	74	-29.3	Peak	1	165	
4631.4	33.56	V	54	-20.44	Avg	1	165	
5557.66	47.25	V	74	-26.75	Peak	1	160	
5557.66	33.39	V	54	-20.61	Avg	1	160	
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-UFL
Configuration: Protocol B
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	39.46	V	74	-34.54	Peak	1	200	
2778.83	27.49	V	54	-26.51	Avg	1	200	
3705.1	45.04	V	74	-28.96	Peak	1	335	
3705.1	36.44	V	54	-17.56	Avg	1	335	
4631.4	45.75	V	74	-28.25	Peak	1	210	
4631.4	36.98	V	54	-17.02	Avg	1	210	
5557.66	48.64	V	74	-25.36	Peak	1.5	170	
5557.66	36.31	V	54	-17.69	Avg	1.5	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-UFL
Configuration: Protocol B
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	40.12	V	74	-33.88	Peak	1	45	
2778.83	28.08	V	54	-25.92	Avg	1	45	
3705.1	45.02	V	74	-28.98	Peak	1.1	45	
3705.1	35.81	V	54	-18.19	Avg	1.1	45	
4631.4	46.76	V	74	-27.24	Peak	1	115	
4631.4	38.82	V	54	-15.18	Avg	1	115	
5557.66	49.33	V	74	-24.67	Peak	1	90	
5557.66	38.27	V	54	-15.73	Avg	1	90	
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-UFL
Configuration: Protocol B
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	40.62	H	74	-33.38	Peak	1	210	
2778.83	29.42	H	54	-24.58	Avg	1	210	
3705.1	45.91	H	74	-28.09	Peak	1	135	
3705.1	39.07	H	54	-14.93	Avg	1	135	
4631.4	49.19	H	74	-24.81	Peak	1	235	
4631.4	42.42	H	54	-11.58	Avg	1	235	
5557.66	48.51	H	74	-25.49	Peak	1	190	
5557.66	35.75	H	54	-18.25	Avg	1	190	
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-UFL
Configuration: Protocol B
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	40.68	H	74	-33.32	Peak	1.1	200	
2778.83	27.78	H	54	-26.22	Avg	1.1	200	
3705.1	45.03	H	74	-28.97	Peak	1	345	
3705.1	35.82	H	54	-18.18	Avg	1	345	
4631.4	46.58	H	74	-27.42	Peak	1	0	
4631.4	37.68	H	54	-16.32	Avg	1	0	
5557.66	48.24	H	74	-25.76	Peak	1	0	
5557.66	34.95	H	54	-19.05	Avg	1	0	
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-UFL
 Configuration: Protocol B
 ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
 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	40.42	H	74	-33.58	Peak	1	260	
2778.83	26.93	H	54	-27.07	Avg	1	260	
3705.1	45.94	H	74	-28.06	Peak	1	170	
3705.1	36.53	H	54	-17.47	Avg	1	170	
4631.4	47.8	H	74	-26.2	Peak	1	170	
4631.4	39.4	H	54	-14.6	Avg	1	170	
5557.66	50.97	H	74	-23.03	Peak	1.1	220	
5557.66	41.16	H	54	-12.84	Avg	1.1	220	
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-UFL
Configuration: Protocol B
ANT-916-PW-QW-UFL Antenna

Dates: 02/05/2015 and 02/09/2015

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

Title: Pre-Scan - FCC Class B

File: Agilent - Radiated Pre-Scan 30-1000MHz - FCC Class B_Module_1_Protocol_B_ANT-916-PW-QW-UFL_X-Axis_02-06-2015.set

Operator: Kenneth Lee

EUT Type: Hummingbird MCA

EUT Condition: Continuously Transmitting - Frequency Hopping - Protocol B - Module 1 - X-Axis - Worst Case

Comments: Customer: Linx Technologies

M/N: HUM-900-PRO-UFL

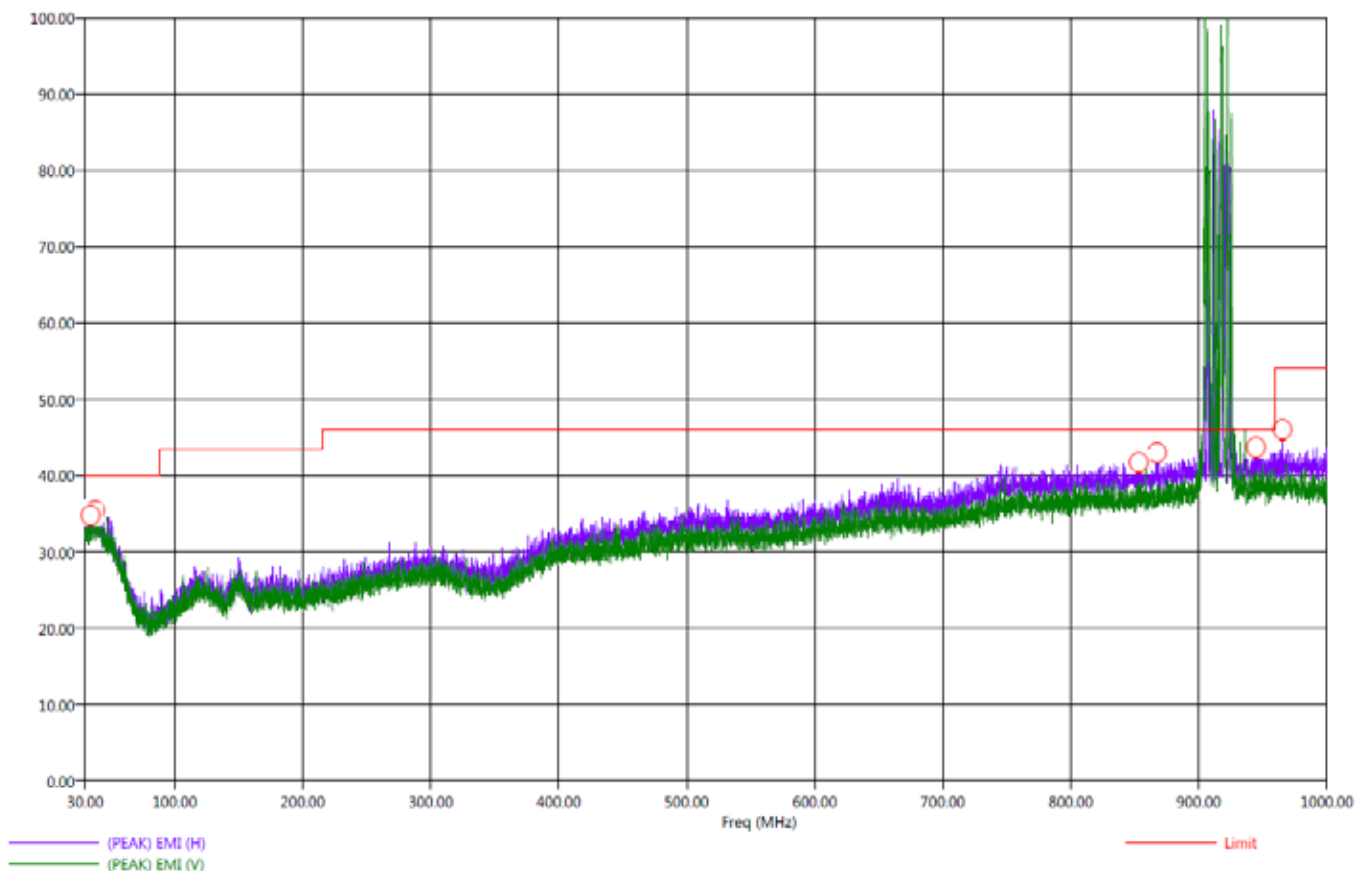
Note: Antenna - ANT-916-PW-QW-UFL

2/6/2015 12:37:51 PM

Sequence: Preliminary Scan

FCC Class B

Electric Field Strength (dBuV/m)



Title: Radiated Final - 30-1000 MHz - FCC Class B
File: Agilent - Radiated Final Scan 30-1000Mhz - FCC Class B_Module 1_Protocol B_ANT-916-IPW-QW-UFL_X-Axis_02-06-2015.set
Operator: Kenneth Lee
EUT Type: Hummingbird MCA
EUT Condition: Continuously Transmitting - Frequency Hopping - Protocol B - Module 1 - X-Axis - Worst Case
Comments: Customer: Linx Technologies
M/N: HUM-900-PRO-UFL
Note: Antenna - ANT-916-IPW-QW-UFL

2/6/2015 12:48:20 PM
Sequence: Final Measurements

Final Scan - FCC Class B

Freq (MHz)	Pol	(PEAK) EMI (dBuV/m)	(QP) EMI (dBuV/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dBuV/m)	Transducer (dB)	Cable (dB)	Twr Ht (cm)	Ttbl Aql (deg)
34.30	V	35.60	31.35	-4.40	-8.65	40.00	23.66	0.39	383.91	211.25
37.90	H	35.61	31.73	-4.39	-8.27	40.00	24.04	0.42	239.31	234.50
853.20	H	42.84	37.86	-3.16	-8.14	46.00	26.44	2.53	384.08	242.25
867.30	H	42.20	38.11	-3.80	-7.89	46.00	26.61	2.56	127.61	207.00
944.70	H	43.66	39.62	-2.34	-6.38	46.00	27.63	2.70	368.68	42.25
965.40	H	44.06	39.65	-9.95	-14.35	54.00	27.64	2.77	175.37	335.25



HUM-900-RC-UFL Protocol C

FCC 15.247

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-RC-UFL
Configuration: Protocol C
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	40.2	V	74	-33.8	Peak	1.75	45	
2708.25	26.41	V	54	-27.59	Avg	1.75	45	
3611	43.04	V	74	-30.96	Peak	1	65	
3611	29.24	V	54	-24.76	Avg	1	65	
4513.75	44.72	V	74	-29.28	Peak	2	30	
4513.75	30.3	V	54	-23.7	Avg	2	30	
5416.5	47.8	V	74	-26.2	Peak	2.5	180	
5416.5	33.37	V	74	-40.63	Avg	2.5	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-UFL
Configuration: Protocol C
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	41.21	V	74	-32.79	Peak	2	240	
2708.25	27.17	V	54	-26.83	Avg	2	240	
3611	44.53	V	74	-29.47	Peak	1.15	160	
3611	30.22	V	54	-23.78	Avg	1.15	160	
4513.75	43.66	V	74	-30.34	Peak	1	350	
4513.75	29.74	V	54	-24.26	Avg	1	350	
5416.5	47.98	V	74	-26.02	Peak	1.5	190	
5416.5	33.92	V	54	-20.08	Avg	1.5	190	
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-UFL
Configuration: Protocol C
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	39.49	V	74	-34.51	Peak	1	45	
2708.25	26.13	V	54	-27.87	Avg	1	45	
3611	43.58	V	74	-30.42	Peak	1.5	85	
3611	29.28	V	54	-24.72	Avg	1.5	85	
4513.75	44.89	V	74	-29.11	Peak	1.35	45	
4513.75	30.45	V	54	-23.55	Avg	1.35	45	
5416.5	46.59	V	74	-27.41	Peak	1.2	0	
5416.5	32.89	V	54	-21.11	Avg	1.2	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-UFL
Configuration: Protocol C
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	39.12	H	74	-34.88	Peak	1	25	
2708.25	25.51	H	54	-28.49	Avg	1	25	
3611	39.07	H	74	-34.93	Peak	1	170	
3611	26.03	H	54	-27.97	Avg	1	170	
4513.75	44.47	H	74	-29.53	Peak	1	260	
4513.75	29.45	H	54	-24.55	Avg	1	260	
5416.5	46.72	H	74	-27.28	Peak	1	45	
5416.5	30.94	H	54	-23.06	Avg	1	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-UFL
Configuration: Protocol C
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	40.4	H	74	-33.6	Peak	1.1	200	
2708.25	26.59	H	54	-27.41	Avg.	1.1	200	
3611	43.61	H	74	-30.39	Peak	1	10	
3611	29.79	H	54	-24.21	Avg	1	10	
4513.75	44.01	H	74	-29.99	Peak	1	0	
4513.75	29.7	H	54	-24.3	Avg	1	0	
5416.5	43.34	H	74	-30.66	Peak	2.25	220	
5416.5	29.11	H	54	-24.89	Avg	2.25	220	
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-UFL
Configuration: Protocol C
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	38.19	H	74	-35.81	Peak	1.75	150	
2708.25	25.39	H	54	-28.61	Avg	1.75	150	
3611	44.31	H	74	-29.69	Peak	1.5	180	
3611	30.14	H	54	-23.86	Avg	1.5	180	
4513.75	44.87	H	74	-29.13	Peak	1.25	170	
4513.75	29.89	H	54	-24.11	Avg	1.25	170	
5416.5	48.06	H	74	-25.94	Peak	1	170	
5416.5	34.04	H	54	-19.96	Avg	1	170	
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-UFL
Configuration: Protocol C
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	40.18	V	74	-33.82	Peak	1.25	290	
2726.25	25.98	V	54	-28.02	Avg	1.25	290	
3635	43.38	V	74	-30.62	Peak	2.5	45	
3635	29.31	V	54	-24.69	Avg	2.5	45	
4543.75	43.36	V	74	-30.64	Peak	2.75	0	
4543.75	29.51	V	54	-24.49	Avg	2.75	0	
5452.49	47.3	V	74	-26.7	Peak	1.75	45	
5452.49	32.34	V	54	-21.66	Avg	1.75	45	
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-UFL
Configuration: Protocol C
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	40.62	V	74	-33.38	Peak	1	210	
2726.25	26.29	V	54	-27.71	Avg	1	210	
3635	45.55	V	74	-28.45	Peak	1.1	190	
3635	30.83	V	54	-23.17	Avg	1.1	190	
4543.75	44.89	V	74	-29.11	Peak	1	180	
4543.75	29.94	V	54	-24.06	Avg	1	180	
5452.49	47.08	V	74	-26.92	Peak	1.5	210	
5452.49	32.74	V	54	-21.26	Avg	1.5	210	
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-UFL
Configuration: Protocol C
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	38.31	V	74	-35.69	Peak	1	160	
2726.25	25.28	V	54	-28.72	Avg	1	160	
3635	46.45	V	74	-27.55	Peak	1.1	190	
3635	29.41	V	54	-24.59	Avg	1.1	190	
4543.75	44.25	V	74	-29.75	Peak	1	90	
4543.75	29.91	V	54	-24.09	Avg	1	90	
5452.49	46.78	V	74	-27.22	Peak	1.2	125	
5452.49	33.07	V	54	-20.93	Avg	1.2	125	
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-UFL
Configuration: Protocol C
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	38.54	H	74	-35.46	Peak	1	160	
2726.25	25.41	H	54	-28.59	Avg	1	160	
3635	45.68	H	74	-28.32	Peak	1.25	170	
3635	30.67	H	54	-23.33	Avg	1.25	170	
4543.75	45	H	74	-29	Peak	1.15	340	
4543.75	30.22	H	54	-23.78	Avg	1.15	340	
5452.49	47.19	H	74	-26.81	Peak	1.25	180	
5452.49	33.31	H	54	-20.69	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-UFL
Configuration: Protocol C
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	40.24	H	74	-33.76	Peak	1.25	150	
2726.25	26.08	H	54	-27.92	Avg	1.25	150	
3635	43.36	H	74	-30.64	Peak	1	0	
3635	29.53	H	54	-24.47	Avg	1	0	
4543.75	43.26	H	74	-30.74	Peak	1.2	135	
4543.75	29.43	H	54	-24.57	Avg	1.2	135	
5452.49	45.9	H	74	-28.1	Peak	1.25	65	
5452.49	32.74	H	54	-21.26	Avg	1.25	65	
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-UFL
Configuration: Protocol C
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	40.35	H	74	-33.65	Peak	1	200	
2726.25	26.26	H	54	-27.74	Avg	1	200	
3635	44.55	H	74	-29.45	Peak	2.5	270	
3635	30.21	H	54	-23.79	Avg	2.5	270	
4543.75	45.9	H	74	-28.1	Peak	1	165	
4543.75	30.79	H	54	-23.21	Avg	1	165	
5452.49	46.81	H	74	-27.19	Peak	1	45	
5452.49	33.39	H	54	-20.61	Avg	1	45	
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-UFL
Configuration: Protocol C
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	39.46	V	74	-34.54	Peak	2.75	135	
2744.24	26.69	V	54	-27.31	Avg	2.75	135	
3658.99	42.25	V	74	-31.75	Peak	2.5	90	
3658.99	28.3	V	54	-25.7	Avg	2.5	90	
4573.74	44.24	V	74	-29.76	Peak	1	210	
4573.74	30.08	V	54	-23.92	Avg	1	210	
5488.48	45.72	V	74	-28.28	Peak	1	150	
5488.48	32.36	V	54	-21.64	Avg	1	150	
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-UFL
Configuration: Protocol C
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	38.9	V	74	-35.1	Peak	1.1	190	
2744.24	25.26	V	54	-28.74	Avg	1.1	190	
3658.99	44.73	V	74	-29.27	Peak	1.25	160	
3658.99	30.28	V	54	-23.72	Avg	1.25	160	
4573.74	44.25	V	74	-29.75	Peak	1.75	45	
4573.74	30.15	V	54	-23.85	Avg	1.75	45	
5488.48	47.69	V	74	-26.31	Peak	1.15	120	
5488.48	32.24	V	54	-21.76	Avg	1.15	120	
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-UFL
Configuration: Protocol C
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	40.56	V	74	-33.44	Peak	2.25	90	
2744.24	26.04	V	54	-27.96	Avg	2.25	90	
3658.99	43.52	V	74	-30.48	Peak	1.1	120	
3658.99	29.55	V	54	-24.45	Avg	1.1	120	
4573.74	44.51	V	74	-29.49	Peak	1	135	
4573.74	30.52	V	54	-23.48	Avg	1	135	
5488.48	47.18	V	74	-26.82	Peak	1	90	
5488.48	33.42	V	54	-20.58	Avg	1	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-UFL
Configuration: Protocol C
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	38.94	H	74	-35.06	Peak	1	180	
2744.24	25.58	H	54	-28.42	Avg	1	180	
3658.99	43.78	H	74	-30.22	Peak	1.1	90	
3658.99	29.54	H	54	-24.46	Avg	1.1	90	
4573.74	45.99	H	74	-28.01	Peak	1	210	
4573.74	30.76	H	54	-23.24	Avg	1	210	
5488.48	47.35	H	74	-26.65	Peak	1	175	
5488.48	33.39	H	54	-20.61	Avg	1	175	
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-UFL
Configuration: Protocol C
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	39.08	H	74	-34.92	Peak	1	150	
2744.24	26.27	H	54	-27.73	Avg	1	150	
3658.99	42.14	H	74	-31.86	Peak	3.25	345	
3658.99	27.67	H	54	-26.33	Avg	3.25	345	
4573.74	43.87	H	74	-30.13	Peak	1	45	
4573.74	29.99	H	54	-24.01	Avg	1	45	
5488.48	46.91	H	74	-27.09	Peak	1	350	
5488.48	32.73	H	54	-21.27	Avg	1	350	
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-UFL
Configuration: Protocol C
ANT-916-PW-QW-UFL Antenna

Date: 02/09/2015
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	39.57	H	74	-34.43	Peak	1	175	
2744.24	25.33	H	54	-28.67	Avg	1	175	
3658.99	44.08	H	74	-29.92	Peak	1	180	
3658.99	29.82	H	54	-24.18	Avg	1	180	
4573.74	45.18	H	74	-28.82	Peak	1.25	195	
4573.74	30.92	H	54	-23.08	Avg	1.25	195	
5488.48	45.04	H	74	-28.96	Peak	1	170	
5488.48	33.09	H	54	-20.91	Avg	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 and FCC Class B

Linx Technologies
Hummingbird MCA Module
Model: HUM-900-RC-UFL
Configuration: Protocol C
ANT-916-PW-QW-UFL Antenna

Dates: 02/05/2015 and 02/12/2015

Labs: B and D

Tested By: Kenneth Lee

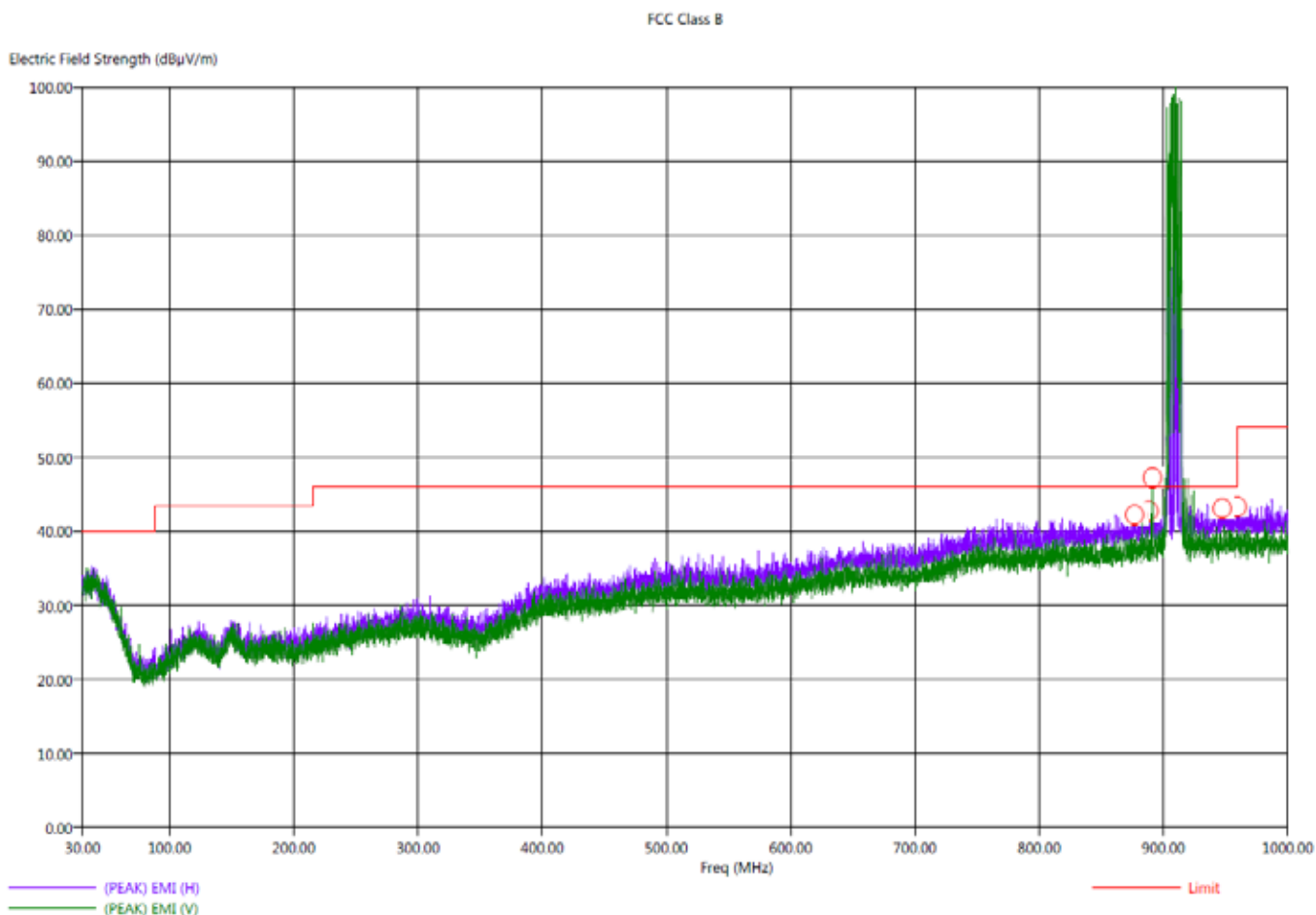
Non Harmonic Emissions from the Tx and Digital Portion - 10 kHz to 30 MHz

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

Title: Pre-Scan - FCC Class B
 File: Agilent - Radiated Pre-Scan 30-1000MHz - FCC Class B_Module_1_Protocol_C_ANT-916-PW-QW-UFL_Y-Axis_02-06-2015.set
 Operator: Kenneth Lee
 EUT Type: Hummingbird MCA
 EUT Condition: Continuously Transmitting - Frequency Hopping - Protocol C - Module 1 - Y-Axis - Worst Case
 Comments: Customer: Linx Technologies
 M/N: HUM-900-RC-UFL
 Note: Antenna - ANT-916-PW-QW-UFL

2/6/2015 1:30:50 PM
 Sequence: Preliminary Scan



Title: Radiated Final - 30-1000 MHz - FCC Class B
File: Agilent - Radiated Final Scan 30-1000Mhz - FCC Class B_Module 1_Protocol C_ANT-916-IPW-QW-ULF_Y-Axis_02-06-2015.set
Operator: Kenneth Lee
EUT Type: Hummingbird MCA
EUT Condition: Continuously Transmitting - Frequency Hopping - Protocol C - Module 1 - Y-Axis - Worst Case
Comments: Customer: Linx Technologies
M/N: HUM-900-RC-ULF
Note: Antenna - ANT-916-IPW-QW-ULF

2/6/2015 1:41:11 PM
Sequence: Final Measurements

Final Scan - FCC Class B

Freq (MHz)	Pol	(PEAK) EMI (dBuV/m)	(QP) EMI (dBuV/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dBuV/m)	Transducer (dB)	Cable (dB)	Twr Ht (cm)	Ttbl Aql (deg)
876.80	H	42.48	38.35	-3.52	-7.65	46.00	26.72	2.58	111.31	331.50
879.20	H	42.35	38.37	-3.65	-7.63	46.00	26.75	2.59	239.85	204.50
888.40	H	42.33	38.58	-3.67	-7.42	46.00	26.87	2.61	320.20	265.25
891.30	V	52.00	40.19	6.00	-5.81	46.00	26.90	2.62	127.55	178.50
947.30	H	43.65	39.52	-2.35	-6.48	46.00	27.66	2.71	303.67	74.25
959.50	H	43.59	39.62	-2.41	-6.38	46.00	27.66	2.75	336.44	338.25

HUM-900-PRO-UFL
ANT-916-CW HW
Protocol A

FCC 15.247

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

Date: 02/10/2015

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	40.87	V	74	-33.13	Peak	1	345	
2708.91	29.28	V	54	-24.72	Avg	1	345	
3611.88	45.23	V	74	-28.77	Peak	1.15	185	
3611.88	38.44	V	54	-15.56	Avg	1.15	185	
4514.86	44.8	V	74	-29.2	Peak	1	90	
4514.86	37	V	54	-17	Avg	1	90	
5417.83	48.26	V	74	-25.74	Peak	1	235	
5417.83	38.69	V	54	-15.31	Avg	1	235	
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-UFL
Configuration: Protocol A
ANT-916-CW-HW Antenna

Date: 02/10/2015

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	39.72	V	74	-34.28	Peak	1.65	345	
2708.91	29.14	V	54	-24.86	Avg	1.65	345	
3611.88	44.73	V	74	-29.27	Peak	1	180	
3611.88	38.36	V	54	-15.64	Avg	1	180	
4514.86	43.1	V	74	-30.9	Peak	1	180	
4514.86	40.45	V	54	-13.55	Avg	1	180	
5417.83	49.08	V	74	-24.92	Peak	1.25	190	
5417.83	38.87	V	54	-15.13	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-UFL
Configuration: Protocol A
ANT-916-CW-HW Antenna

Date: 02/10/2015

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	39.67	V	74	-34.33	Peak	1.1	90	
2708.91	30.19	V	54	-23.81	Avg	1.1	90	
3611.88	44.21	V	74	-29.79	Peak	1	80	
3611.88	36.61	V	54	-17.39	Avg	1	80	
4514.86	45.68	V	74	-28.32	Peak	1.25	45	
4514.86	39.28	V	54	-14.72	Avg	1.25	45	
5417.83	47.73	V	74	-26.27	Peak	1.35	165	
5417.83	37.47	V	54	-16.53	Avg	1.35	165	
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-UFL
Configuration: Protocol A
ANT-916-CW-HW Antenna

Date: 02/10/2015
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	39.94	H	74	-34.06	Peak	1	290	
2708.91	28.25	H	54	-25.75	Avg	1	290	
3611.88	45.86	H	74	-28.14	Peak	1.1	270	
3611.88	39.37	H	54	-14.63	Avg	1.1	270	
4514.86	44.96	H	74	-29.04	Peak	1	190	
4514.86	38.22	H	54	-15.78	Avg	1	190	
5417.83	49.53	H	74	-24.47	Peak	1	210	
5417.83	41.13	H	54	-12.87	Avg	1	210	
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-UFL
Configuration: Protocol A
ANT-916-CW-HW Antenna

Date: 02/10/2015

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	39.67	H	74	-34.33	Peak	1	260	
2708.91	30.16	H	54	-23.84	Avg	1	260	
3611.88	44.02	H	74	-29.98	Peak	1	90	
3611.88	35.9	H	54	-18.1	Avg	1	90	
4514.86	44.65	H	74	-29.35	Peak	1	45	
4514.86	37.43	H	54	-16.57	Avg	1	45	
5417.83	46.91	H	74	-27.09	Peak	2.5	30	
5417.83	35	H	54	-19	Avg	2.5	30	
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-UFL
Configuration: Protocol A
ANT-916-CW-HW Antenna

Date: 02/10/2015

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	39.48	H	74	-34.52	Peak	1.75	160	
2708.91	29.41	H	54	-24.59	Avg	1.75	160	
3611.88	45.43	H	74	-28.57	Peak	1.5	270	
3611.88	39.15	H	54	-14.85	Avg	1.5	270	
4514.86	45.35	H	74	-28.65	Peak	1.1	30	
4514.86	38.77	H	54	-15.23	Avg	1.1	30	
5417.83	49.07	H	74	-24.93	Peak	1	235	
5417.83	40.31	H	54	-13.69	Avg	1	235	
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-UFL
Configuration: Protocol A
ANT-916-CW-HW Antenna

Date: 02/10/2015

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	39.26	V	74	-34.74	Peak	1.15	135	
2745	28.59	V	54	-25.41	Avg	1.15	135	
3660	45.25	V	74	-28.75	Peak	1.75	190	
3660	39.59	V	54	-14.41	Avg	1.75	190	
4575	45.85	V	74	-28.15	Peak	1	200	
4575	38.85	V	54	-15.15	Avg	1	200	
5490	47.11	V	74	-26.89	Peak	1	30	
5490	34.22	V	54	-19.78	Avg	1	30	
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-UFL
Configuration: Protocol A
ANT-916-CW-HW Antenna

Date: 02/10/2015

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	41.27	V	74	-32.73	Peak	1	210	
2745	32.23	V	54	-21.77	Avg	1	210	
3660	44.95	V	74	-29.05	Peak	1	210	
3660	38.33	V	54	-15.67	Avg	1	210	
4575	48	V	74	-26	Peak	1	220	
4575	43.1	V	54	-10.9	Avg	1	220	
5490	48.12	V	74	-25.88	Peak	1	345	
5490	37.71	V	54	-16.29	Avg	1	345	
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-UFL
Configuration: Protocol A
ANT-916-CW-HW Antenna

Date: 02/10/2015

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	40.48	V	74	-33.52	Peak	1.5	80	
2745	28.9	V	54	-25.1	Avg	1.5	80	
3660	44.64	V	74	-29.36	Peak	1	135	
3660	37.61	V	54	-16.39	Avg	1	135	
4575	46.1	V	74	-27.9	Peak	1	170	
4575	37.64	V	54	-16.36	Avg	1	170	
5490	46.76	V	74	-27.24	Peak	1.35	180	
5490	33.58	V	54	-20.42	Avg	1.35	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-UFL
Configuration: Protocol A
ANT-916-CW-HW Antenna

Date: 02/10/2015

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	40.13	H	74	-33.87	Peak	1.1	345	
2745	28.75	H	54	-25.25	Avg	1.1	345	
3660	46.87	H	74	-27.13	Peak	1.25	210	
3660	39.98	H	54	-14.02	Avg	1.25	210	
4575	44.78	H	74	-29.22	Peak	1	195	
4575	37.86	H	54	-16.14	Avg	1	195	
5490	50.12	H	74	-23.88	Peak	1.1	240	
5490	42.18	H	54	-11.82	Avg	1.1	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-UFL
Configuration: Protocol A
ANT-916-CW-HW Antenna

Date: 02/10/2015

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	38.97	H	74	-35.03	Peak	1.1	180	
2745	28.44	H	54	-25.56	Avg	1.1	180	
3660	45.07	H	74	-28.93	Peak	1	45	
3660	35.78	H	54	-18.22	Avg	1	45	
4575	45.65	H	74	-28.35	Peak	1	60	
4575	37.66	H	54	-16.34	Avg	1	60	
5490	48.31	H	74	-25.69	Peak	1.5	30	
5490	36.36	H	54	-17.64	Avg	1.5	30	
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-UFL
Configuration: Protocol A
ANT-916-CW-HW Antenna

Date: 02/10/2015

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	40.32	H	74	-33.68	Peak	1	180	
2745	29.67	H	54	-24.33	Avg	1	180	
3660	45.88	H	74	-28.12	Peak	1	210	
3660	39.74	H	54	-14.26	Avg	1	210	
4575	46.21	H	74	-27.79	Peak	1	210	
4575	38.97	H	54	-15.03	Avg	1	210	
5490	50.11	H	74	-23.89	Peak	1	345	
5490	41.08	H	54	-12.92	Avg	1	345	
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-UFL
 Configuration: Protocol A
 ANT-916-CW-HW Antenna

Date: 02/10/2015

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
1853.3								N/A - Not in Restricted Band and done via Conducted
2779.9	40.24	V	74	-33.76	Peak	1.1	160	
2779.9	26.97	V	54	-27.03	Avg	1.1	160	
3706.6	42.57	V	74	-31.43	Peak	1.1	210	
3706.6	31.49	V	54	-22.51	Avg	1.1	210	
4633.25	46.87	V	74	-27.13	Peak	1	180	
4633.25	38.26	V	54	-15.74	Avg	1	180	
5559.9	49.33	V	74	-24.67	Peak	1	345	
5559.9	36.08	V	54	-17.92	Avg	1	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

FCC 15.247

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

Date: 02/10/2015

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
1853.3								N/A - Not in Restricted Band and done via Conducted
2779.9	40.16	V	74	-33.84	Peak	1	180	
2779.9	29.32	V	54	-24.68	Avg	1	180	
3706.6	46.17	V	74	-27.83	Peak	1	160	
3706.6	36.68	V	54	-17.32	Avg	1	160	
4633.25	46.87	V	74	-27.13	Peak	1	135	
4633.25	39.44	V	54	-14.56	Avg	1	135	
5559.9	48.34	V	74	-25.66	Peak	1	150	
5559.9	37.09	V	54	-16.91	Avg	1	150	
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-UFL
Configuration: Protocol A
ANT-916-CW-HW Antenna

Date: 02/10/2015
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
1853.3								N/A - Not in Restricted Band and done via Conducted
2779.9	40.11	V	74	-33.89	Peak	1	260	
2779.9	27.2	V	54	-26.8	Avg	1	260	
3706.6	44.15	V	74	-29.85	Peak	1	180	
3706.6	35.97	V	54	-18.03	Avg	1	180	
4633.25	45.88	V	74	-28.12	Peak	1.25	210	
4633.25	35.48	V	54	-18.52	Avg	1.25	210	
5559.9	49.67	V	74	-24.33	Peak	1.25	135	
5559.9	37.06	V	54	-16.94	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-UFL
Configuration: Protocol A
ANT-916-CW-HW Antenna

Date: 02/10/2015
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
1853.3								N/A - Not in Restricted Band and done via Conducted
2779.9	40.24	H	74	-33.76	Peak	1.25	235	
2779.9	29.26	H	54	-24.74	Avg	1.25	235	
3706.6	45.5	H	74	-28.5	Peak	1	270	
3706.6	38.92	H	54	-15.08	Avg	1	270	
4633.25	46.28	H	74	-27.72	Peak	1.35	355	
4633.25	39.13	H	54	-14.87	Avg	1.35	355	
5559.9	48.28	H	74	-25.72	Peak	1	135	
5559.9	38.14	H	54	-15.86	Avg	1	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-UFL
 Configuration: Protocol A
 ANT-916-CW-HW Antenna

Date: 02/10/2015
 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
1853.3								N/A - Not in Restricted Band and done via Conducted
2779.9	40.28	H	74	-33.72	Peak	1	270	
2779.9	27.86	H	54	-26.14	Avg	1	270	
3706.6	44.38	H	74	-29.62	Peak	1	185	
3706.6	34.27	H	54	-19.73	Avg	1	185	
4633.25	45.57	H	74	-28.43	Peak	1.25	190	
4633.25	38.16	H	54	-15.84	Avg	1.25	190	
5559.9	47.22	H	74	-26.78	Peak	1.15	135	
5559.9	34.35	H	54	-19.65	Avg	1.15	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-UFL
Configuration: Protocol A
ANT-916-CW-HW Antenna

Date: 02/10/2015
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
1853.3								N/A - Not in Restricted Band and done via Conducted
2779.9	39.85	H	74	-34.15	Peak	1.1	185	
2779.9	28.24	H	54	-25.76	Avg	1.1	185	
3706.6	45.04	H	74	-28.96	Peak	1.25	235	
3706.6	37.92	H	54	-16.08	Avg	1.25	235	
4633.25	46.78	H	74	-27.22	Peak	1	180	
4633.25	40.97	H	54	-13.03	Avg	1	180	
5559.9	48.21	H	74	-25.79	Peak	1	0	
5559.9	37.54	H	54	-16.46	Avg	1	0	
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 and FCC Class B

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

Dates: 02/06/2015 and 02/10/2015

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

Title: Pre-Scan - FCC Class B

File: Agilent - Radiated Pre-Scan 30-1000Mhz - FCC Class B_Module_1_Protocol_A_ANT-916-CW-HW_X-Axis_02-06-2015.set

Operator: Kenneth Lee

EUT Type: Hummingbird MCA

EUT Condition: Continuously Transmitting - Frequency Hopping - Protocol A - Module 1 - X-Axis - Worst Case

Comments: Customer: Linx Technologies

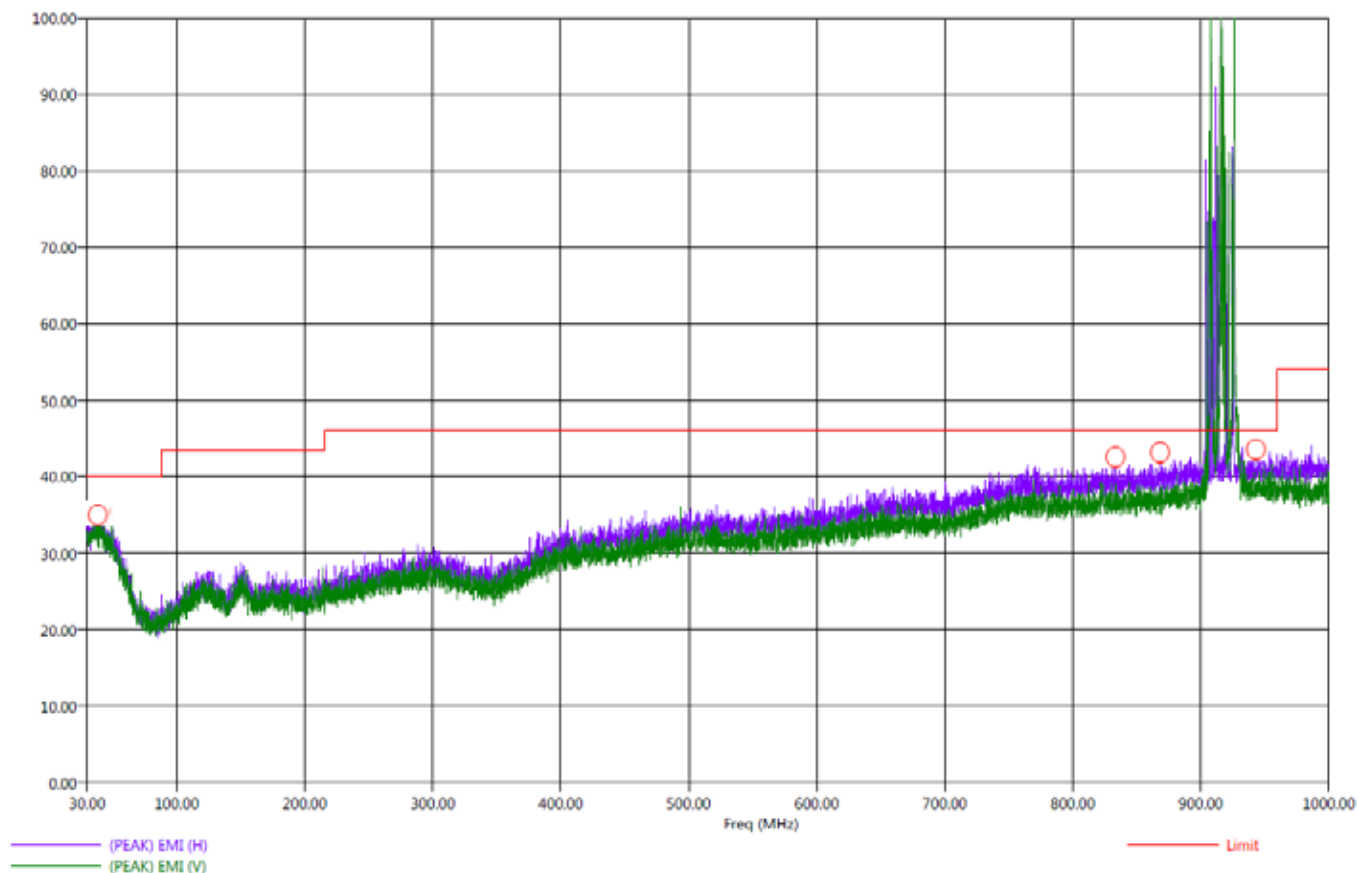
M/N: HUM-900-PRO-UTL

Note: Antenna - ANT-916-CW-HW

2/6/2015 9:00:05 AM

Sequence: Preliminary Scan

FCC Class B

Electric 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_1_Protocol_A_ANT-916-CW-HW_X-Axis_02-06-2015.set
 Operator: Kenneth Lee
 EUT Type: Hummingbird MCA
 EUT Condition: Continuously Transmitting - Frequency Hopping - Protocol A - Module 1 - X-Axis - Worst Case
 Comments: Customer: Unix Technologies
 M/N: HUM-900-PRO.UFL
 Note: Antenna - ANT-916-CW-HW

2/6/2015 9:09:54 AM
 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)	Ttl Aql (deg)
38.50	H	35.79	31.56	-4.21	-8.44	40.00	24.07	0.42	271.85	57.25
38.50	V	36.09	31.59	-3.91	-8.41	40.00	24.05	0.42	255.25	81.75
40.60	H	36.29	31.50	-3.71	-8.50	40.00	23.96	0.44	320.14	317.75
833.30	H	41.43	37.41	-4.57	-8.59	46.00	26.24	2.47	303.91	14.25
868.30	H	42.02	37.94	-3.98	-8.06	46.00	26.62	2.56	368.14	271.50
943.10	H	43.67	39.32	-2.33	-6.68	46.00	27.61	2.70	207.73	120.50