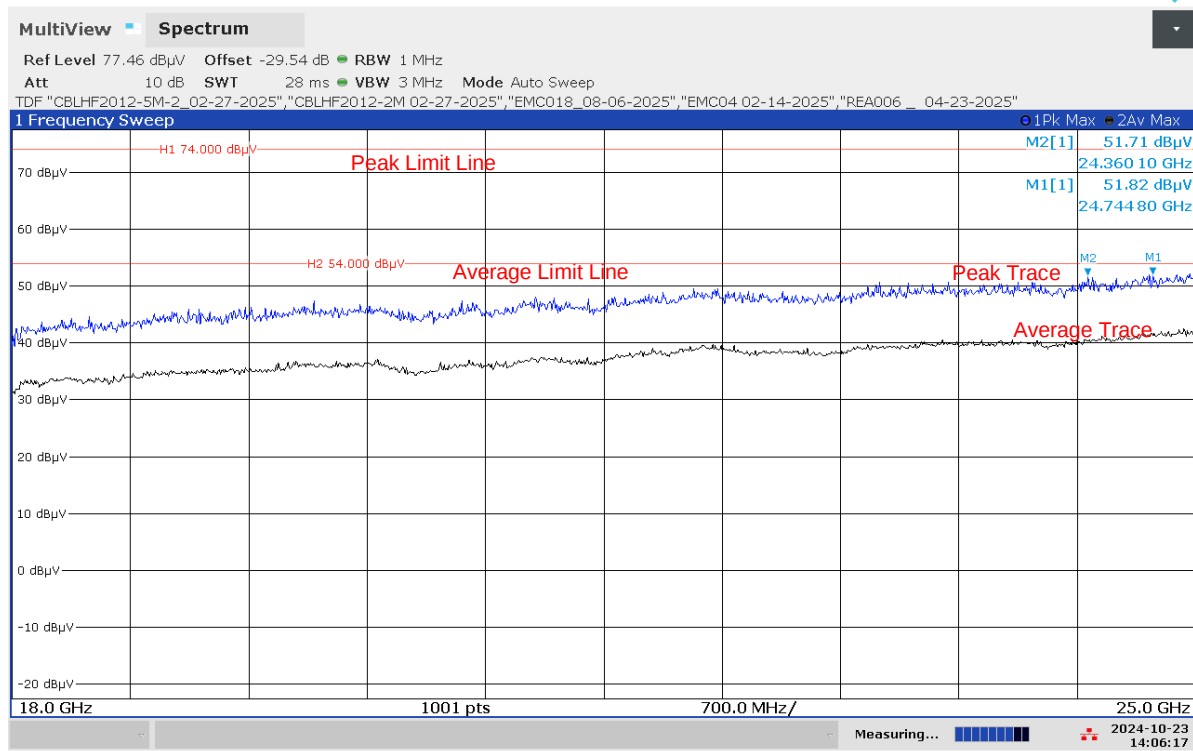


BLE (Plastic Enclosure, Without Keypad), Mid Channel, 18-25 GHz, Test Distance at 10cm, (V/H Polarities)



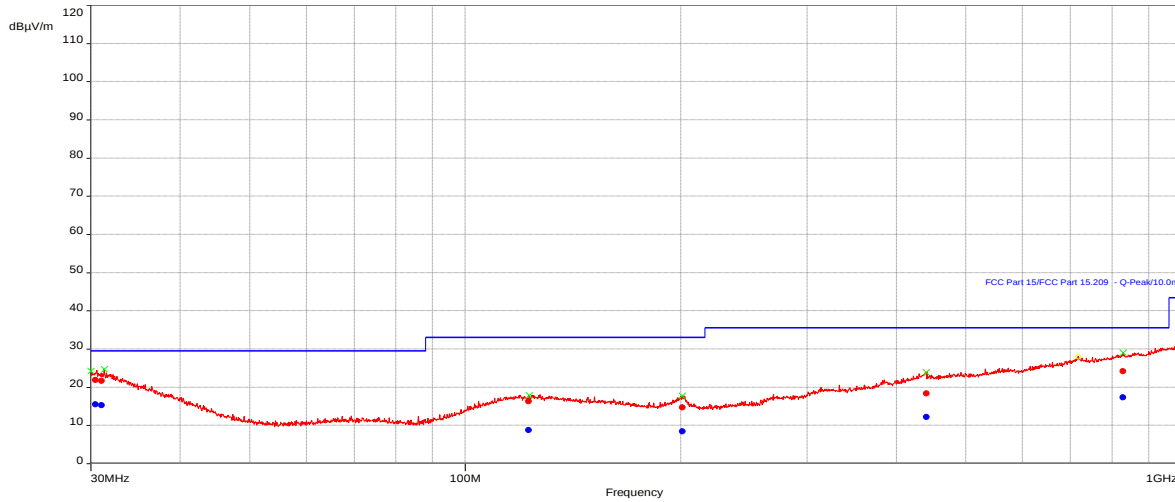
02:06:17 PM 10/23/2024

BLE (Plastic Enclosure, Without Keypad), High Channel, 30-1000 MHz, Test Distance at 10m, (V/H Polarities)

Test Information:

Date and Time	10/1/2024 11:51:38 AM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	45 %
Atmospheric Pressure	1011 mbars
Comments	Scan 35 BLE Tx High (Plastic Enclosure - Without Keypad), RE 30-1000MHz

Graph:



Results:

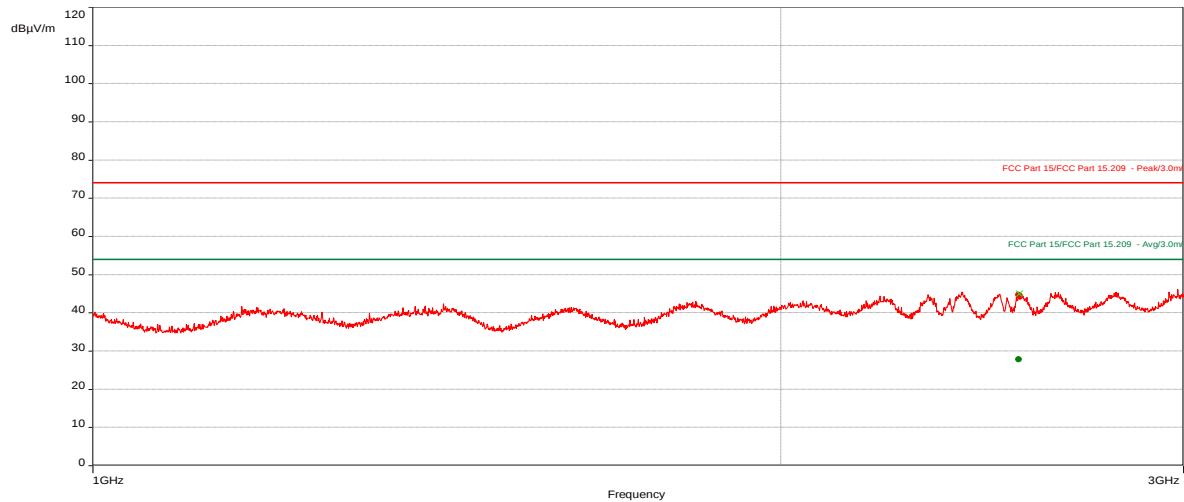
QuasiPeak (PASS) (6)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
30.4436	15.51	29.54	-14.03	136.40	2.73	Vertical	120k	0.10	-13.07
31.0881	15.26	29.54	-14.28	136.70	1.76	Horizontal	120k	0.10	-13.34
122.651	8.83	33.06	-24.23	272.20	3.05	Horizontal	120k	0.10	-18.78
200.9888	8.40	33.06	-24.66	6.60	2.69	Vertical	120k	0.10	-19.68
440.4357	12.23	35.56	-23.33	293.80	1.99	Horizontal	120k	0.10	-14.63
828.3287	17.34	35.56	-18.22	22.70	2.07	Horizontal	120k	0.10	-7.47

BLE (Plastic Enclosure, Without Keypad), High Channel, 1-3 GHz, Test Distance at 3m, (V/H Polarities)

Test Information:

Date and Time	10/10/2024 12:04:39 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	22 deg C
Humidity	39 %
Atmospheric Pressure	1005 mbars
Comments	Scan 63 BLE Tx High (Plastic Enclosure - Without Keypad), RE 1-3 GHz

Graph:**Results:****Peak (PASS) (1)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
2541.364	44.73	74.00	29.27	152.60	2.51	Vertical	1M	1.00	-14.06

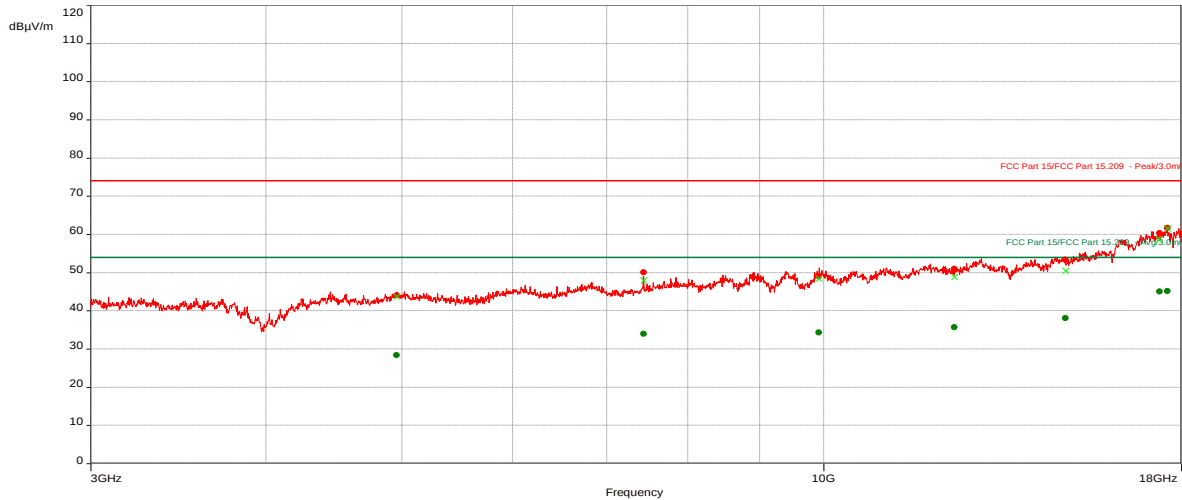
AVG (PASS) (1)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
2541.364	27.82	54.00	-26.18	152.60	2.51	Vertical	1M	1.00	-14.06

BLE (Plastic Enclosure, Without Keypad), High Channel, 3-18 GHz, Test Distance at 3m, (V/H Polarities)

Test Information:

Date and Time	10/10/2024 12:15:17 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	22 deg C
Humidity	39 %
Atmospheric Pressure	1005 mbars
Comments	Scan 64 BLE Tx High (Plastic Enclosure - Without Keypad), RE 3-18 GHz

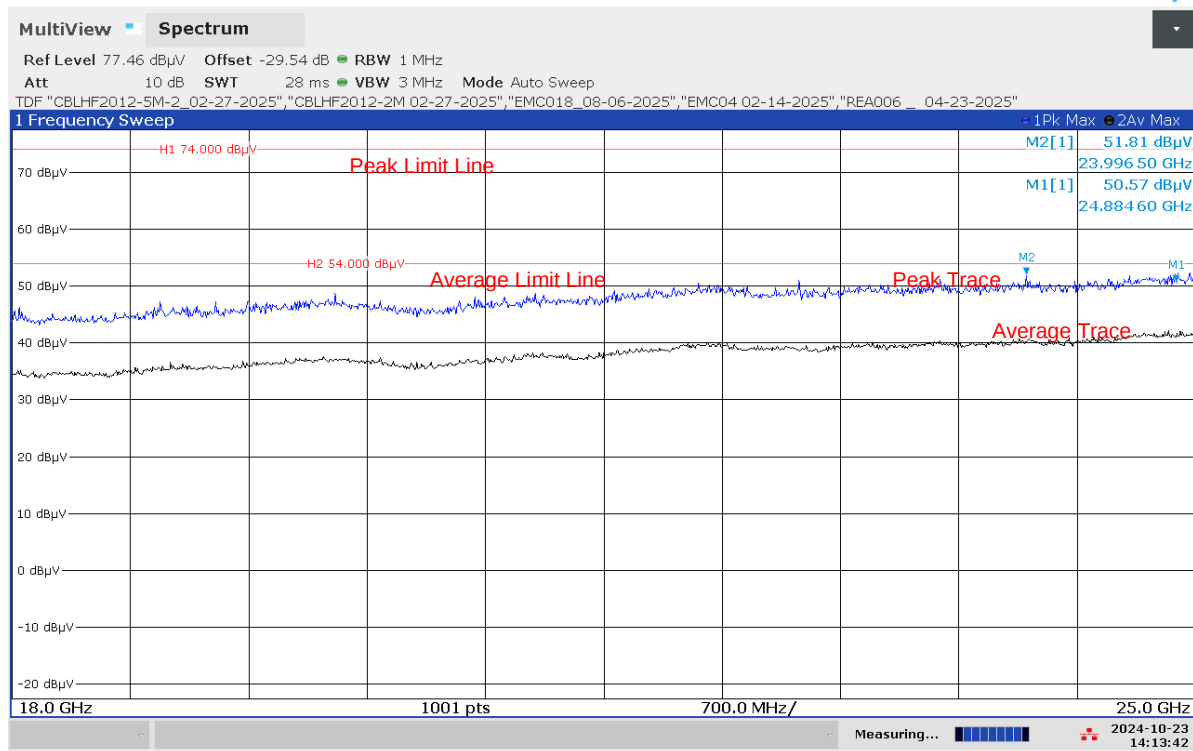
Graph:**Results:****Peak (PASS) (7)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
4960.424	44.07	74.00	-29.93	360.00	1.00	Horizontal	1M	1.00	-9.54
7438.815	50.08	74.00	-23.92	360.00	1.00	Vertical	1M	1.00	-5.38
9921.334	49.10	74.00	-24.90	360.00	1.00	Horizontal	1M	1.00	-2.27
12400.225	51.01	74.00	-22.99	0.00	1.00	Horizontal	1M	1.00	2.09
14884.177	53.34	74.00	-20.66	0.00	4.00	Horizontal	1M	1.00	3.89
17362.269	60.38	74.00	-13.62	0.00	4.00	Horizontal	1M	1.00	7.92
17593.336	61.77	74.00	-12.23	265.70	1.00	Vertical	1M	1.00	8.32

AVG (PASS) (7)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
4960.424	28.36	54.00	-25.64	360.00	1.00	Horizontal	1M	1.00	-9.54
7438.815	33.98	54.00	-20.02	360.00	1.00	Vertical	1M	1.00	-5.38
9921.334	34.35	54.00	-19.65	360.00	1.00	Horizontal	1M	1.00	-2.27
12400.225	35.71	54.00	-18.29	0.00	1.00	Horizontal	1M	1.00	2.09
14884.177	38.07	54.00	-15.93	0.00	4.00	Horizontal	1M	1.00	3.89
17362.269	45.09	54.00	-8.91	0.00	4.00	Horizontal	1M	1.00	7.92
17593.336	45.21	54.00	-8.79	265.70	1.00	Vertical	1M	1.00	8.32

BLE (Plastic Enclosure, Without Keypad), High Channel, 18-25 GHz, Test Distance at 10cm, (V/H Polarities)



02:13:42 PM 10/23/2024

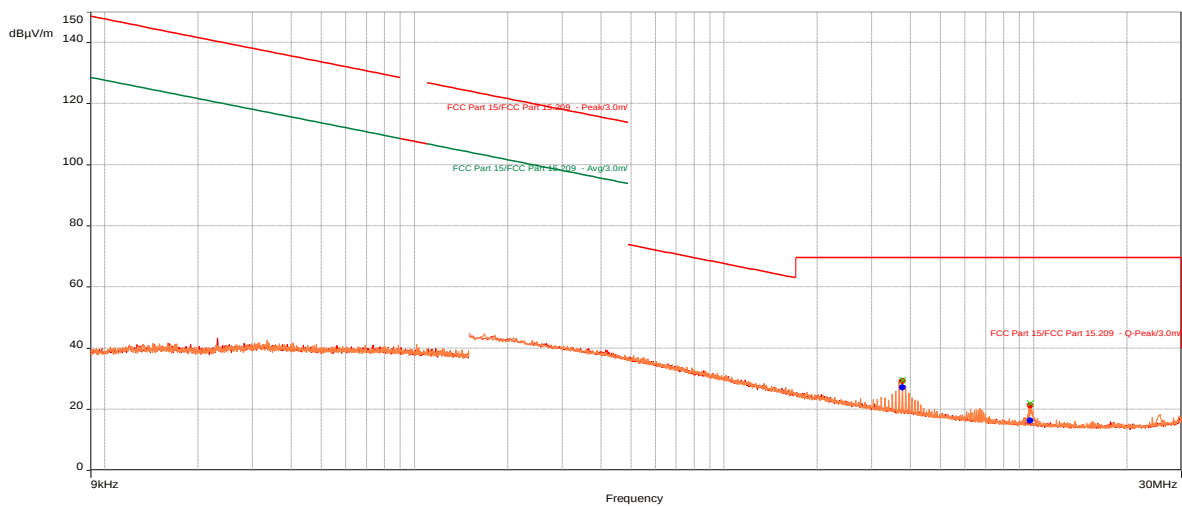
=== POE Powered===

BLE Tx High Channel – Worst-case Output Power (Metal Enclosure, With Keypad),
RE 9kHz-30MHz, 3m (X, Y, Z Polarities)

Test Information:

Date and Time	11/18/2024 1:32:57 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	22 deg C
Humidity	22 %
Atmospheric Pressure	1000 mbars
Comments	Scan 54_BLE Tx High-worst-case, (Metal- With Keypad), POE Powered, RE 9 kHz-30 MHz, 3m

Graph:



Results:

Peak (PASS) (2)

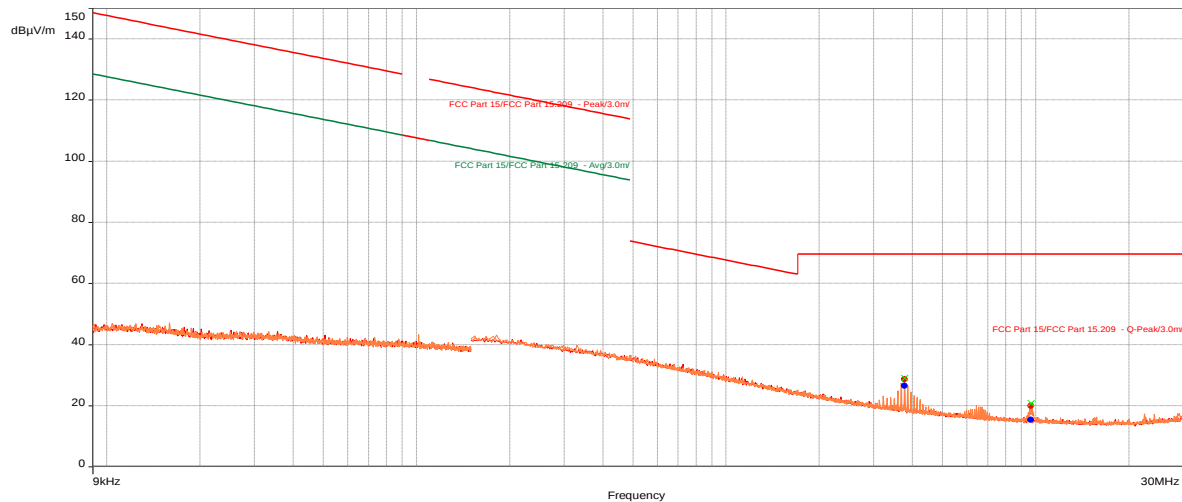
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Pol.	RBW	Meas.Time (s)	Correction (dB)
3.77148	29.27	69.54	-40.27	55.40	Vertical	9k	0.10	0.20
9.74872	21.31	69.54	-48.23	168.90	Vertical	9k	0.10	0.30

QuasiPeak (PASS) (2)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Pol.	RBW	Meas.Time (s)	Correction (dB)
3.77148	27.16	69.54	-42.38	55.40	Vertical	9k	0.10	0.20
9.74872	16.22	69.54	-53.32	168.90	Vertical	9k	0.10	0.30

BLE Tx Mid Channel – Worst-case Output Power (Plastic Enclosure, With Keypad),
RE 9kHz-30MHz, 3m (X, Y, Z Polarities)**Test Information:**

Date and Time	11/18/2024 3:17:02 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	22 deg C
Humidity	22 %
Atmospheric Pressure	1000 mbars
Comments	Scan 57_BLE Tx Mid-worst-case, (Plastic- With Keypad), POE Powered, RE 9 kHz-30 MHz, 3m

Graph:**Results:**

Peak (PASS) (2)

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	RBW	Meas.Time (s)	Correction (dB)
3.7725	28.73	69.54	-40.81	125.50	Vertical	9k	0.10	0.20
9.66018	20.04	69.54	-49.50	120.80	Vertical	9k	0.10	0.29

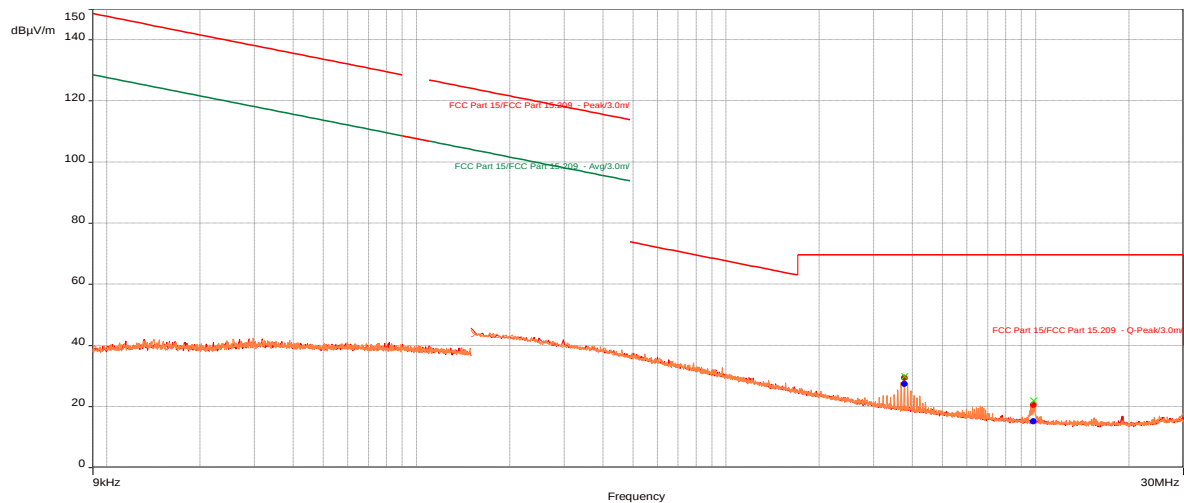
QuasiPeak (PASS) (2)

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	RBW	Meas.Time (s)	Correction (dB)
3.7725	26.57	69.54	-42.97	125.50	Vertical	9k	0.10	0.20
9.66018	15.43	69.54	-54.11	120.80	Vertical	9k	0.10	0.29

BLE Tx Mid Channel – Worst-case Output Power (Plastic Enclosure, With no Keypad),
RE 9kHz-30MHz, 3m (X, Y, Z Polarities)

Test Information:

Date and Time	11/18/2024 12:02:07 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	22 deg C
Humidity	22 %
Atmospheric Pressure	1000 mbars
Comments	Scan 51_BLE Tx Mid - Worst-case, (Plastic- No Keypad), POE Powered, RE 9 kHz-30 MHz, 3m

Graph:**Results:****Peak (PASS) (2)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Pol.	RBW	Meas.Time (s)	Correction (dB)
3.76834	29.38	69.54	-40.16	77.30	Vertical	9k	0.10	0.20
9.83647	20.49	69.54	-49.05	136.30	Vertical	9k	0.10	0.30

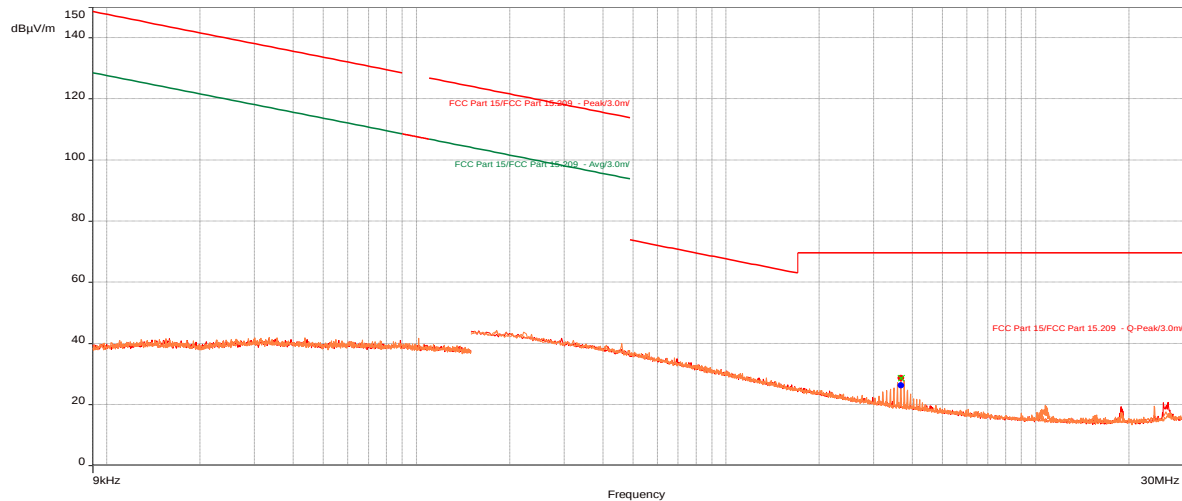
QuasiPeak (PASS) (2)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Pol.	RBW	Meas.Time (s)	Correction (dB)
3.76834	27.38	69.54	-42.16	77.30	Vertical	9k	0.10	0.20
9.83647	15.10	69.54	-54.44	136.30	Vertical	9k	0.10	0.30

BLE Tx Mid Channel – Worst-case Output Power (Metal Enclosure, With no Keypad),
RE 9kHz-30MHz, 3m (X, Y, Z Polarities)

Test Information:

Date and Time	11/18/2024 10:08:35 AM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	22 deg C
Humidity	22 %
Atmospheric Pressure	1000 mbars
Comments	Scan 48_BLE Tx Mid - Worst-case, (Metal- No Keypad), POE Powered, RE 9 kHz-30 MHz, 3m

Graph:**Results:**

Peak (PASS) (1)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Pol.	RBW	Meas.Time (s)	Correction (dB)
3.66878	28.64	69.54	-40.90	71.50	Y-axis	9k	0.10	0.19

QuasiPeak (PASS) (1)

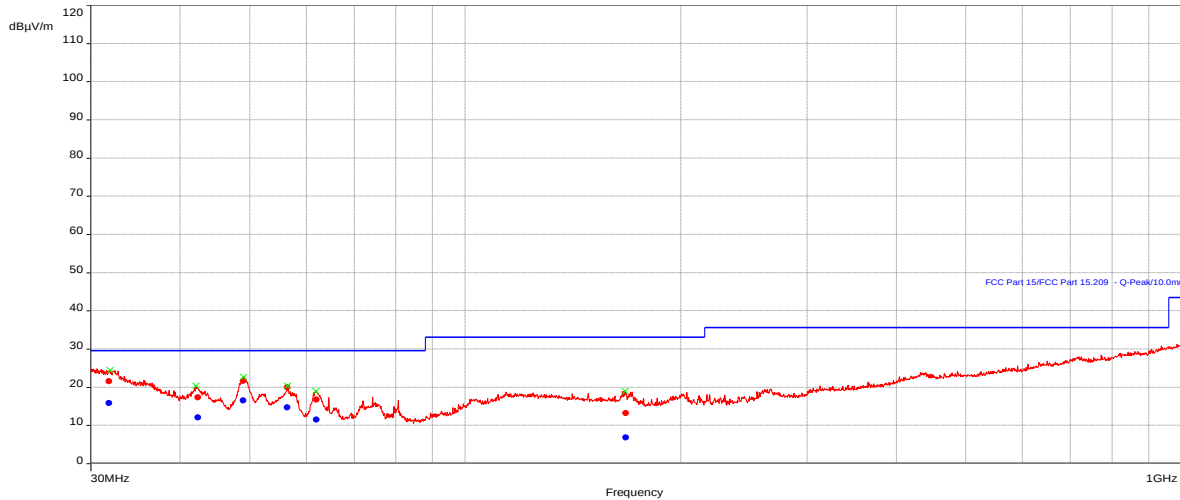
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Pol.	RBW	Meas.Time (s)	Correction (dB)
3.66878	26.30	69.54	-43.24	71.50	Y-axis	9k	0.10	0.19

BLE (Metal Enclosure, With Keypad), Low Channel, 30-1000 MHz, Test Distance at 10m, (V/H Polarities)

Test Information:

Date and Time	11/1/2024 10:03:12 AM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	21 C
Humidity	41 %
Atmospheric Pressure	1000 mbar
Comments	Scan 21 BLE Tx Low (Metal- Keypad), POE Powered, RE 30-1000 MHz, 10m

Graph:



Results:

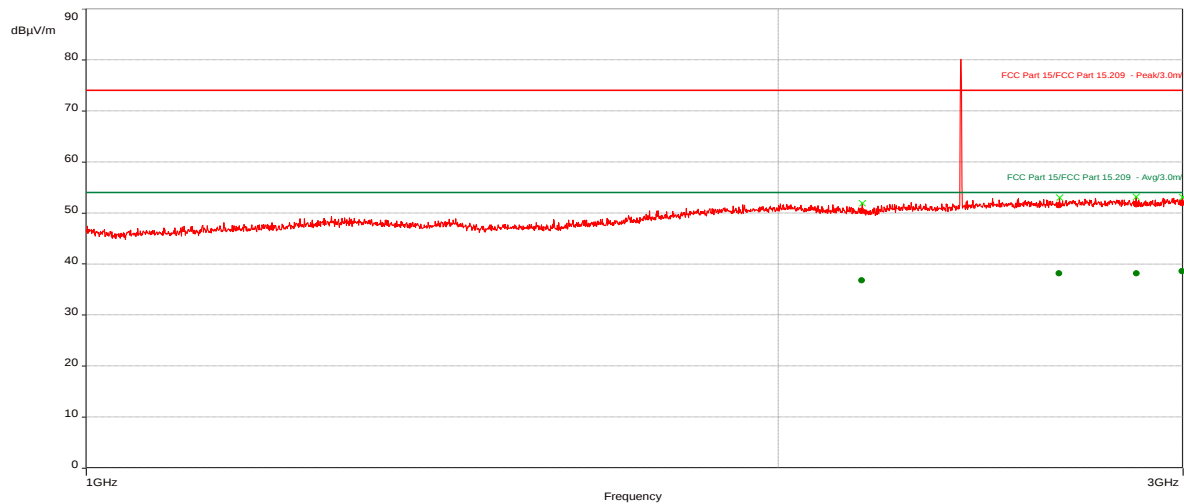
QuasiPeak (PASS) (6)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
31.8242	15.81	29.54	-13.73	321.00	2.46	Vertical	120k	0.10	-13.76
42.3473	12.15	29.54	-17.39	6.80	3.97	Vertical	120k	0.10	-21.36
48.9556	16.52	29.54	-13.02	282.80	1.91	Vertical	120k	0.10	-25.04
56.4106	14.72	29.54	-14.82	173.90	2.08	Vertical	120k	0.10	-25.97
62.02	11.48	29.54	-18.06	44.70	4.00	Vertical	120k	0.10	-25.51
167.6509	6.86	33.06	-26.20	326.50	4.00	Vertical	120k	0.10	-20.37

BLE (Metal Enclosure, With Keypad), Low Channel, 1-3 GHz, Test Distance at 3m, (V/H Polarities)

Test Information:

Date and Time	11/22/2024 10:04:58 AM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	35 %
Atmospheric Pressure	986 mbar
Comments	Scan 69_BLE Tx Low (Metal With Keypad), RE 1 to 3 GHz (Used PRE12 + 10 dB Attenuator)

Graph:**Results:****Peak (PASS) (4)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2174.889	50.38	74.00	-23.62	0.00	3.58	Horizontal	1M	1.00	5.47
2649.63	51.52	74.00	-22.48	74.00	3.05	Horizontal	1M	1.00	6.96
2863.337	51.69	74.00	-22.31	191.70	3.05	Horizontal	1M	1.00	7.01
2998.086	51.95	74.00	-22.05	270.40	1.44	Vertical	1M	1.00	7.46

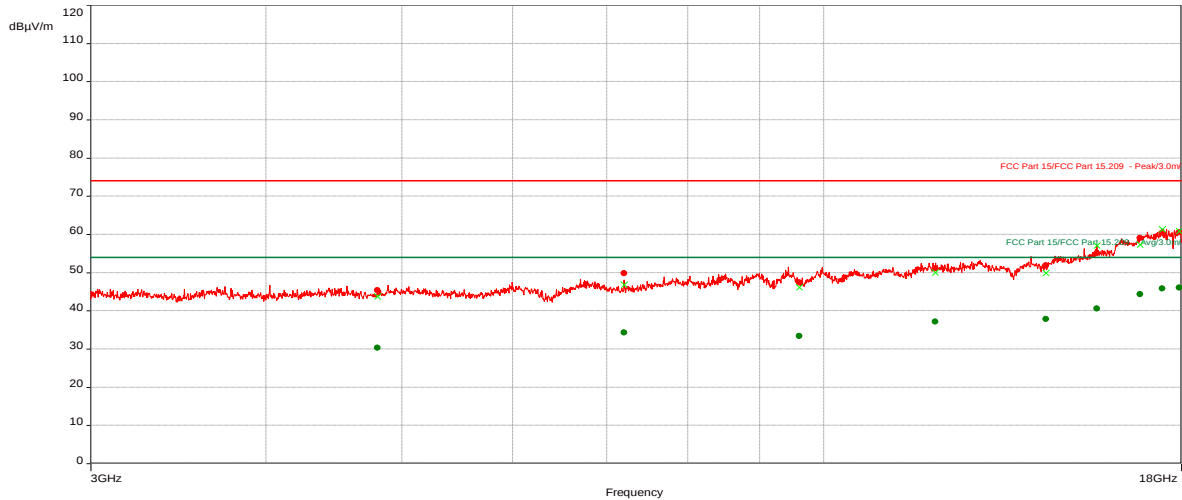
AVG (PASS) (4)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2174.889	36.80	54.00	-17.20	0.00	3.58	Horizontal	1M	1.00	5.47
2649.63	38.19	54.00	-15.81	74.00	3.05	Horizontal	1M	1.00	6.96
2863.337	38.12	54.00	-15.88	191.70	3.05	Horizontal	1M	1.00	7.01
2998.086	38.58	54.00	-15.42	270.40	1.44	Vertical	1M	1.00	7.46

BLE (Metal Enclosure, With Keypad), Low Channel, 3-18 GHz, Test Distance at 3m, (V/H Polarities)

Test Information:

Date and Time	11/8/2024 10:20:25 AM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	35 %
Atmospheric Pressure	1003 mbars
Comments	Scan 28 BLE Tx Low (Metal- Keypad), POE Powered, RE 3-18 GHz 3m

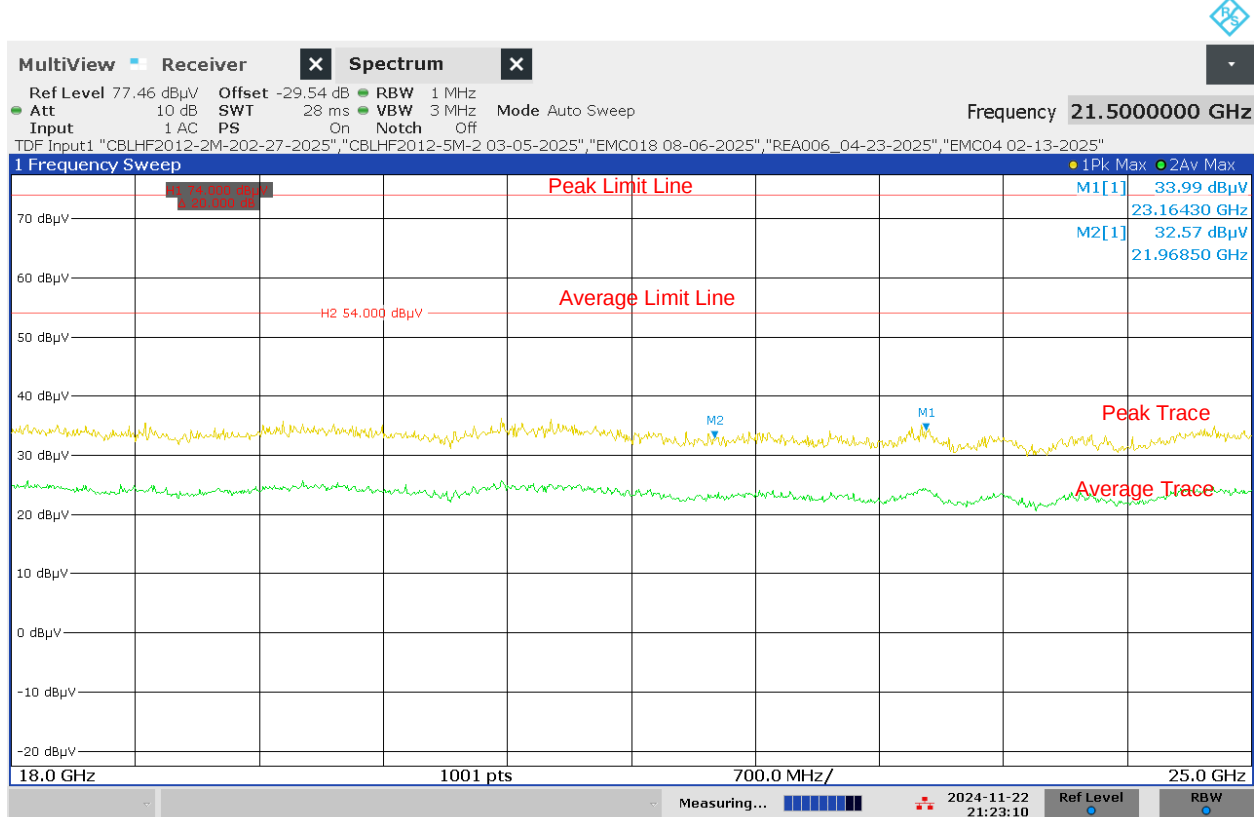
Graph:**Results:****Peak (PASS) (9)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
4803.514	45.36	74.00	-28.64	360.00	4.00	Vertical	1M	1.00	-9.67
7207.422	49.86	74.00	-24.14	0.00	1.00	Vertical	1M	1.00	-5.60
9605.481	47.52	74.00	-26.48	360.00	4.00	Vertical	1M	1.00	-2.84
12009.813	51.11	74.00	-22.89	0.00	1.00	Horizontal	1M	1.00	1.43
14410.679	51.96	74.00	-22.04	360.00	4.00	Horizontal	1M	1.00	3.48
15663.956	55.07	74.00	-18.93	360.00	1.00	Vertical	1M	1.00	5.13
16813.713	59.09	74.00	-14.91	265.70	4.00	Vertical	1M	1.00	8.16
17448.18	60.42	74.00	-13.58	265.70	1.00	Vertical	1M	1.00	8.20
17931.376	60.56	74.00	-13.44	265.70	1.00	Horizontal	1M	1.00	8.77

AVG (PASS) (9)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
4803.514	30.32	54.00	-23.68	360.00	4.00	Vertical	1M	1.00	-9.67
7207.422	34.34	54.00	-19.66	0.00	1.00	Vertical	1M	1.00	-5.60
9605.481	33.47	54.00	-20.53	360.00	4.00	Vertical	1M	1.00	-2.84
12009.813	37.21	54.00	-16.79	0.00	1.00	Horizontal	1M	1.00	1.43
14410.679	37.86	54.00	-16.14	360.00	4.00	Horizontal	1M	1.00	3.48
15663.956	40.64	54.00	-13.36	360.00	1.00	Vertical	1M	1.00	5.13
16813.713	44.37	54.00	-9.63	265.70	4.00	Vertical	1M	1.00	8.16
17448.18	45.84	54.00	-8.16	265.70	1.00	Vertical	1M	1.00	8.20
17931.376	46.11	54.00	-7.89	265.70	1.00	Horizontal	1M	1.00	8.77

BLE (Metal Enclosure, With Keypad), Low Channel, 18-25 GHz, Test Distance at 10 cm, (V/H Polarities)

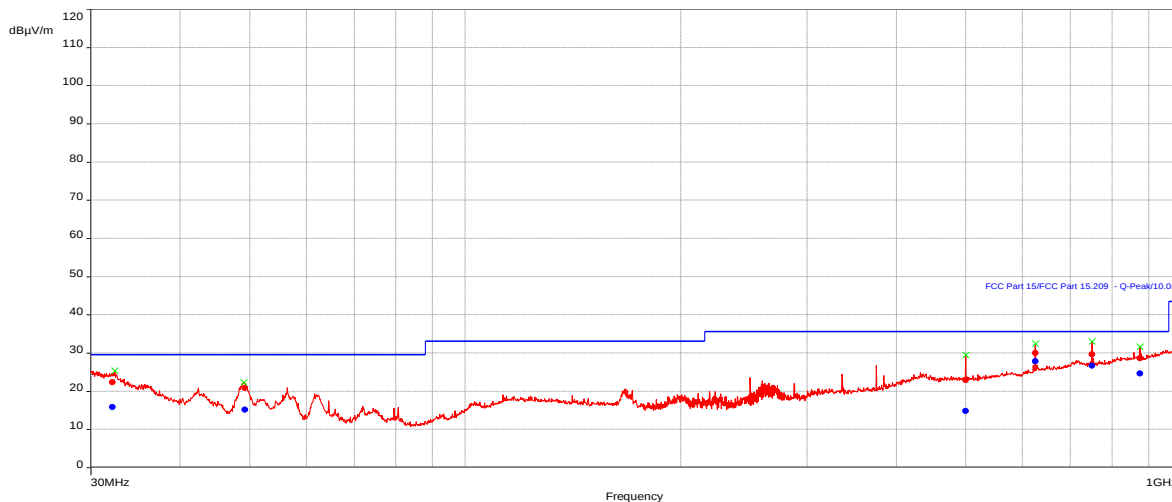


09:23:11 PM 11/22/2024

BLE (Metal Enclosure, With Keypad), Mid Channel, 30-1000 MHz, Test Distance at 10m, (V/H Polarities)

Test Information:

Date and Time	11/1/2024 10:44:20 AM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	21 C
Humidity	41 %
Atmospheric Pressure	1000 mbar
Comments	Scan 22 BLE Tx Mid (Metal- Keypad), POE Powered, RE 30-1000 MHz, 10m

Graph:**Results:****QuasiPeak (PASS) (6)**

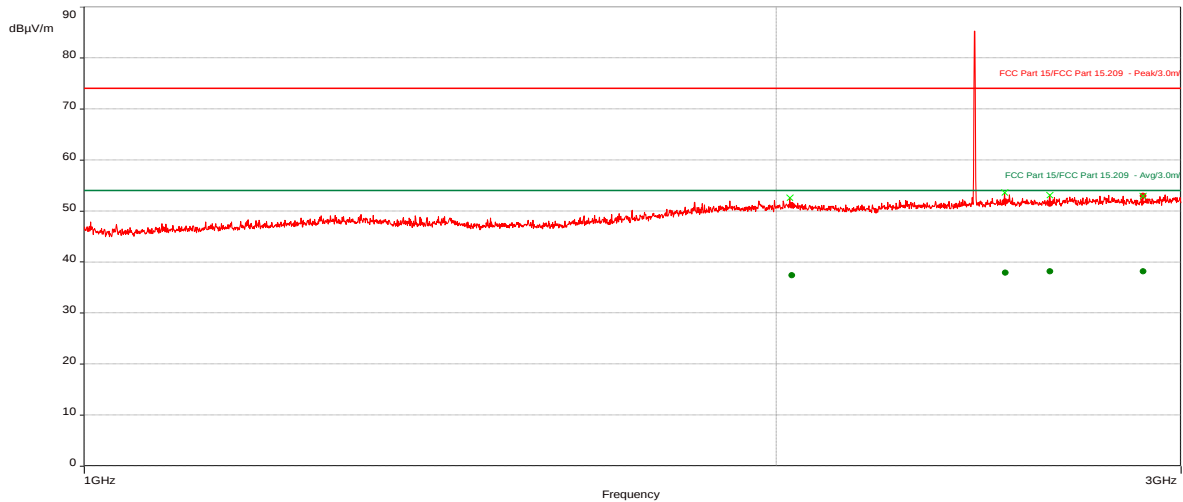
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
32.1621	15.86	29.54	-13.68	17.50	4.00	Vertical	120k	0.10	-14.00
49.2401	15.15	29.54	-14.39	82.60	4.00	Vertical	120k	0.10	-25.13
500.0458	14.80	35.56	-20.76	87.60	4.00	Horizontal	120k	0.10	-13.49
625.0065	27.82	35.56	-7.74	201.50	4.00	Vertical	120k	0.10	-11.10
750.003	26.68	35.56	-8.88	224.10	4.00	Vertical	120k	0.10	-9.12
874.9966	24.66	35.56	-10.90	131.10	4.00	Vertical	120k	0.10	-7.04

BLE (Metal Enclosure, With Keypad), Mid Channel, 1-3 GHz, Test Distance at 3m, (V/H Polarities)

Test Information:

Date and Time	11/22/2024 10:26:38 AM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	35 %
Atmospheric Pressure	986 mbar
Comments	Scan 70_BLE Tx Mid (Metal With Keypad), RE 1 to 3 GHz (Used PRE12 + 10 dB Attenuator)

Graph:



Results:

Peak (PASS) (4)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2031.777	51.11	74.00	-22.89	113.50	1.44	Horizontal	1M	1.00	6.00
2516.556	51.88	74.00	-22.12	270.20	1.00	Vertical	1M	1.00	6.79
2631.512	51.45	74.00	-22.55	152.70	1.00	Horizontal	1M	1.00	6.95
2888.998	52.98	74.00	-21.02	74.10	3.58	Horizontal	1M	1.00	6.98

AVG (PASS) (4)

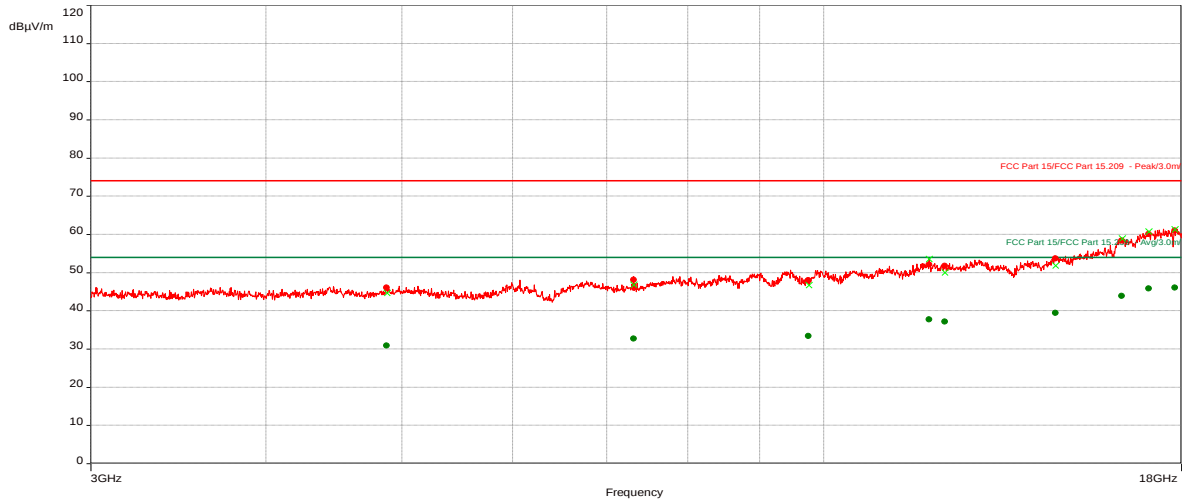
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2031.777	37.42	54.00	-16.58	113.50	1.44	Horizontal	1M	1.00	6.00
2516.556	37.92	54.00	-16.08	270.20	1.00	Vertical	1M	1.00	6.79
2631.512	38.14	54.00	-15.86	152.70	1.00	Horizontal	1M	1.00	6.95
2888.998	38.19	54.00	-15.81	74.10	3.58	Horizontal	1M	1.00	6.98

Notes: The 2.4 GHz notch filter was not available. A 10 dB attenuator was used at the input of the pre-amp to reduce the fundamental signal. The highest peak on the plot is the fundamental signal.

BLE (Metal Enclosure, With Keypad), Mid Channel, 3-18 GHz, Test Distance at 3m, (V/H Polarities)

Test Information:

Date and Time	11/8/2024 8:32:06 AM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	35 %
Atmospheric Pressure	1003 mbars
Comments	Scan 27 BLE Tx Mid (Metal- Keypad), POE Powered, RE 3-18 GHz 3m

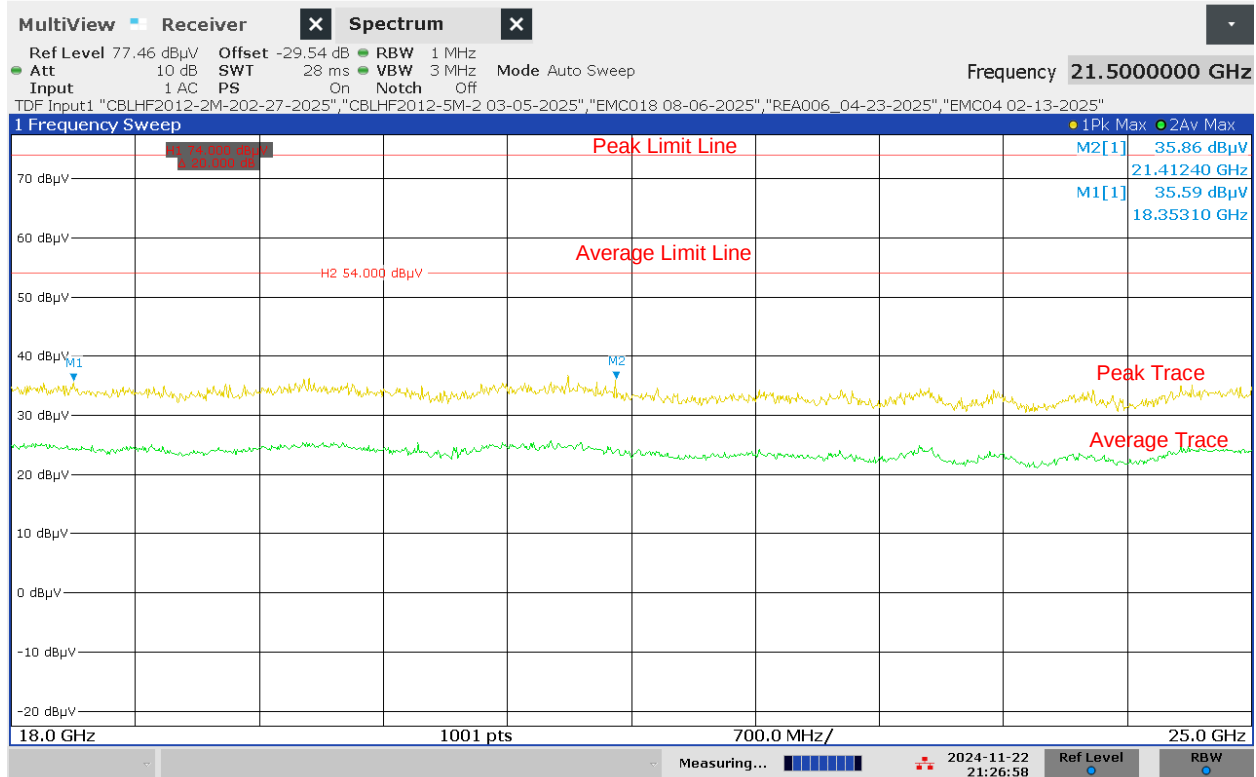
Graph:**Results:****Peak (PASS) (9)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
4879.377	46.13	74.00	-27.87	0.00	4.00	Vertical	1M	1.00	-9.48
7321.409	48.20	74.00	-25.80	360.00	1.00	Horizontal	1M	1.00	-5.48
9756.434	48.06	74.00	-25.94	0.00	4.00	Vertical	1M	1.00	-2.35
11890.332	52.10	74.00	-21.90	265.70	4.00	Vertical	1M	1.00	1.35
12199.14	51.79	74.00	-22.21	0.00	1.00	Horizontal	1M	1.00	1.67
14641.047	53.77	74.00	-20.23	265.70	1.00	Vertical	1M	1.00	3.71
16322.793	58.40	74.00	-15.60	265.80	4.00	Vertical	1M	1.00	6.61
17062.106	60.12	74.00	-13.88	360.00	4.00	Horizontal	1M	1.00	8.18
17803.674	61.02	74.00	-12.98	265.70	1.00	Horizontal	1M	1.00	8.67

AVG (PASS) (9)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
4879.377	30.89	54.00	-23.11	0.00	4.00	Vertical	1M	1.00	-9.48
7321.409	32.76	54.00	-21.24	360.00	1.00	Horizontal	1M	1.00	-5.48
9756.434	33.44	54.00	-20.56	0.00	4.00	Vertical	1M	1.00	-2.35
11890.332	37.75	54.00	-16.25	265.70	4.00	Vertical	1M	1.00	1.35
12199.14	37.21	54.00	-16.79	0.00	1.00	Horizontal	1M	1.00	1.67
14641.047	39.44	54.00	-14.56	265.70	1.00	Vertical	1M	1.00	3.71
16322.793	43.96	54.00	-10.04	265.80	4.00	Vertical	1M	1.00	6.61
17062.106	45.87	54.00	-8.13	360.00	4.00	Horizontal	1M	1.00	8.18
17803.674	46.08	54.00	-7.92	265.70	1.00	Horizontal	1M	1.00	8.67

BLE (Metal Enclosure, With Keypad), Mid Channel, 18-25 GHz, Test Distance at 10cm, (V/H Polarities)

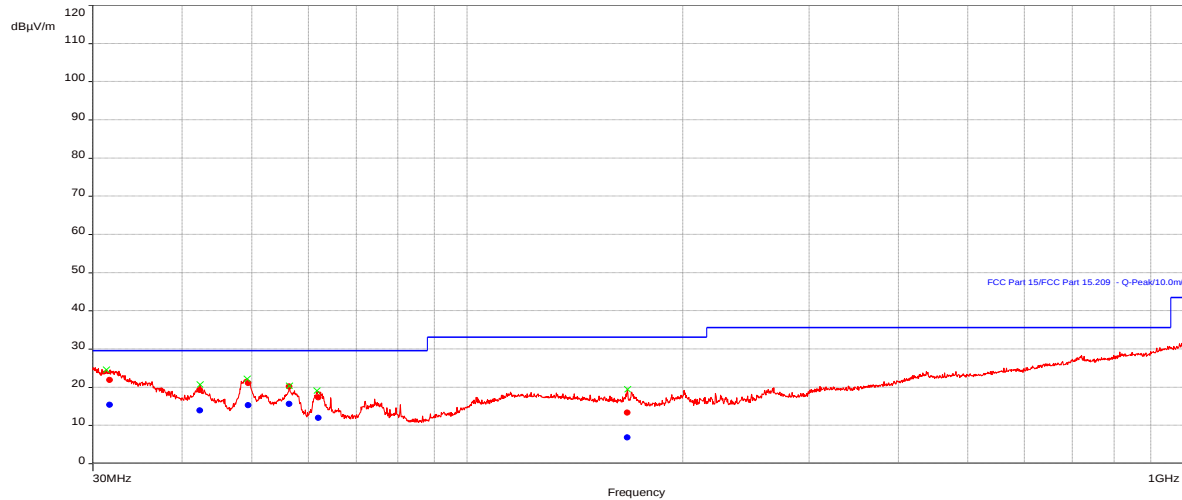


09:26:58 PM 11/22/2024

BLE (Metal Enclosure, With Keypad), High Channel, 30-1000 MHz, Test Distance at 10m, (V/H Polarities)

Test Information:

Date and Time	11/1/2024 11:12:14 AM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	21 C
Humidity	41 %
Atmospheric Pressure	1000 mbar
Comments	Scan 23 BLE Tx High (Metal- Keypad), POE Powered, RE 30-1000 MHz, 10m

Graph:**Results:****QuasiPeak (PASS) (6)**

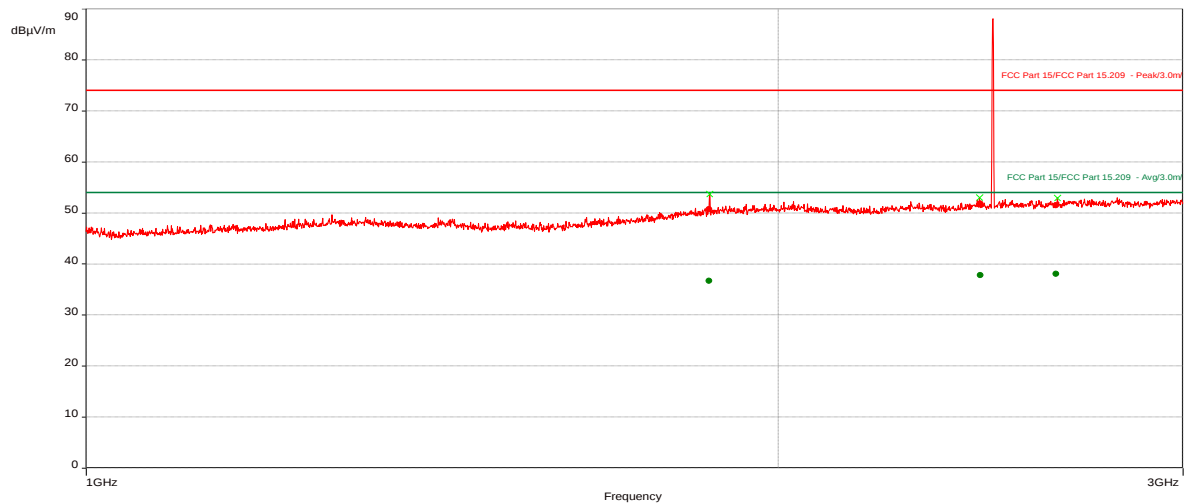
Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
31.6746	15.45	29.54	-14.09	142.10	4.00	Vertical	120k	0.10	-13.67
42.345	13.88	29.54	-15.66	272.10	1.31	Vertical	120k	0.10	-21.36
49.474	15.29	29.54	-14.25	228.80	2.68	Vertical	120k	0.10	-25.20
56.442	15.63	29.54	-13.91	185.50	1.85	Vertical	120k	0.10	-25.97
62.0046	11.93	29.54	-17.61	72.00	4.00	Vertical	120k	0.10	-25.51
167.4133	6.81	33.06	-26.25	261.00	4.00	Vertical	120k	0.10	-20.37

BLE (Metal Enclosure, With Keypad), High Channel, 1-3 GHz, Test Distance at 3m, (V/H Polarities)

Test Information:

Date and Time	11/22/2024 10:51:06 AM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	35 %
Atmospheric Pressure	986 mbar
Comments	Scan 71_BLE Tx High (Metal With Keypad), RE 1 to 3 GHz (Used PRE12 + 10 dB Attenuator)

Graph:



Results:

Peak (PASS) (3)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
1866.552	50.78	74.00	-23.22	152.60	1.00	Horizontal	1M	1.00	5.21
2449.158	51.82	74.00	-22.18	0.00	1.44	Vertical	1M	1.00	6.52
2642.182	51.49	74.00	-22.51	231.10	3.58	Vertical	1M	1.00	6.95

AVG (PASS) (3)

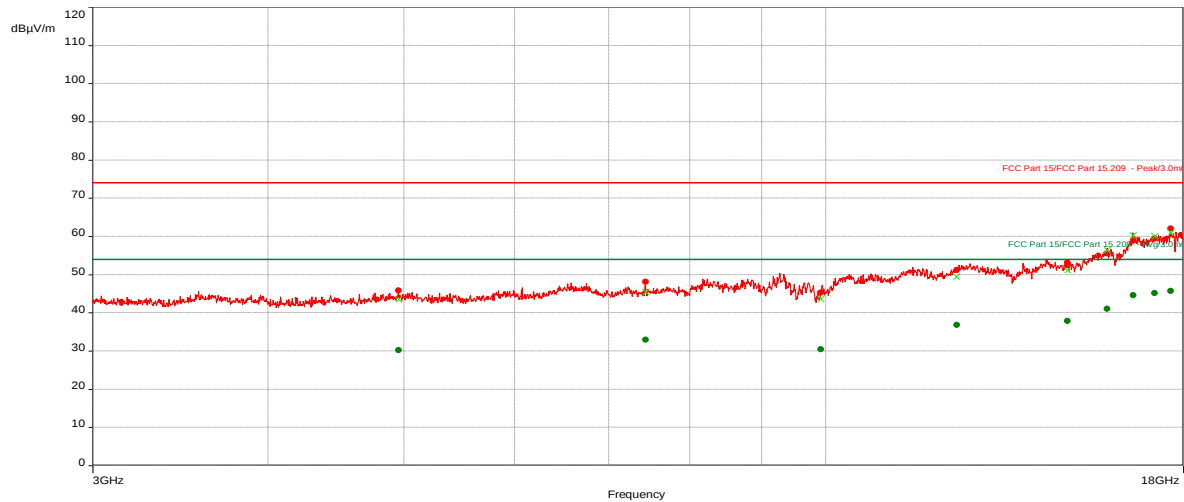
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
1866.552	36.73	54.00	-17.27	152.60	1.00	Horizontal	1M	1.00	5.21
2449.158	37.79	54.00	-16.21	0.00	1.44	Vertical	1M	1.00	6.52
2642.182	38.09	54.00	-15.91	231.10	3.58	Vertical	1M	1.00	6.95

Notes: The 2.4 GHz notch filter was not available. A 10 dB attenuator was used at the input of the pre-amp to reduce the fundamental signal. The highest peak on the plot is the fundamental signal.

BLE (Metal Enclosure, With Keypad), High Channel, 3-18 GHz, Test Distance at 3m, (V/H Polarities)

Test Information:

Date and Time	11/1/2024 2:30:17 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	21 C
Humidity	41 %
Atmospheric Pressure	1000 mbar
Comments	Scan 26 BLE Tx High (Metal- Keypad), POE Powered, RE 3-18 GHz 3m

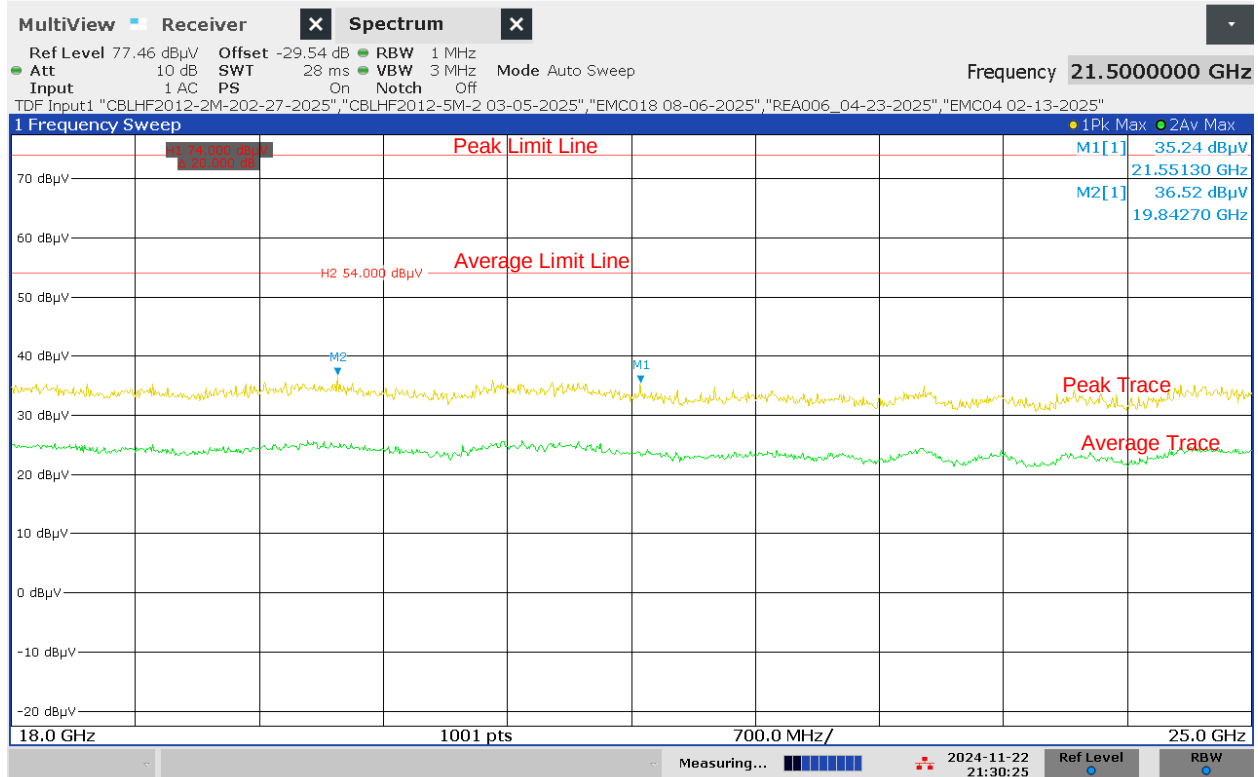
Graph:**Results:****Peak (PASS) (9)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
4958.928	45.86	74.00	-28.14	0.00	4.00	Vertical	1M	1.00	-9.42
7441.147	48.16	74.00	-25.84	360.00	1.00	Horizontal	1M	1.00	-5.18
9921.11	45.29	74.00	-28.71	0.00	4.00	Horizontal	1M	1.00	-2.18
12402.281	51.28	74.00	-22.72	0.00	1.00	Vertical	1M	1.00	2.35
14881.384	53.13	74.00	-20.87	360.00	4.00	Horizontal	1M	1.00	3.99
15882.541	55.55	74.00	-18.45	0.00	4.00	Vertical	1M	1.00	5.54
16572.94	58.85	74.00	-15.15	360.00	4.00	Vertical	1M	1.00	7.46
17170.044	59.41	74.00	-14.59	360.00	4.00	Horizontal	1M	1.00	8.21
17632.523	62.08	74.00	-11.92	0.00	1.00	Vertical	1M	1.00	8.41

AVG (PASS) (9)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
4958.928	30.26	54.00	-23.74	0.00	4.00	Vertical	1M	1.00	-9.42
7441.147	32.98	54.00	-21.02	360.00	1.00	Horizontal	1M	1.00	-5.18
9921.11	30.50	54.00	-23.50	0.00	4.00	Horizontal	1M	1.00	-2.18
12402.281	36.90	54.00	-17.10	0.00	1.00	Vertical	1M	1.00	2.35
14881.384	37.84	54.00	-16.16	360.00	4.00	Horizontal	1M	1.00	3.99
15882.541	41.07	54.00	-12.93	0.00	4.00	Vertical	1M	1.00	5.54
16572.94	44.60	54.00	-9.40	360.00	4.00	Vertical	1M	1.00	7.46
17170.044	45.13	54.00	-8.87	360.00	4.00	Horizontal	1M	1.00	8.21
17632.523	45.70	54.00	-8.30	0.00	1.00	Vertical	1M	1.00	8.41

BLE (Metal Enclosure, With Keypad), High Channel, 18-25 GHz, Test Distance at 10cm, (V/H Polarities)

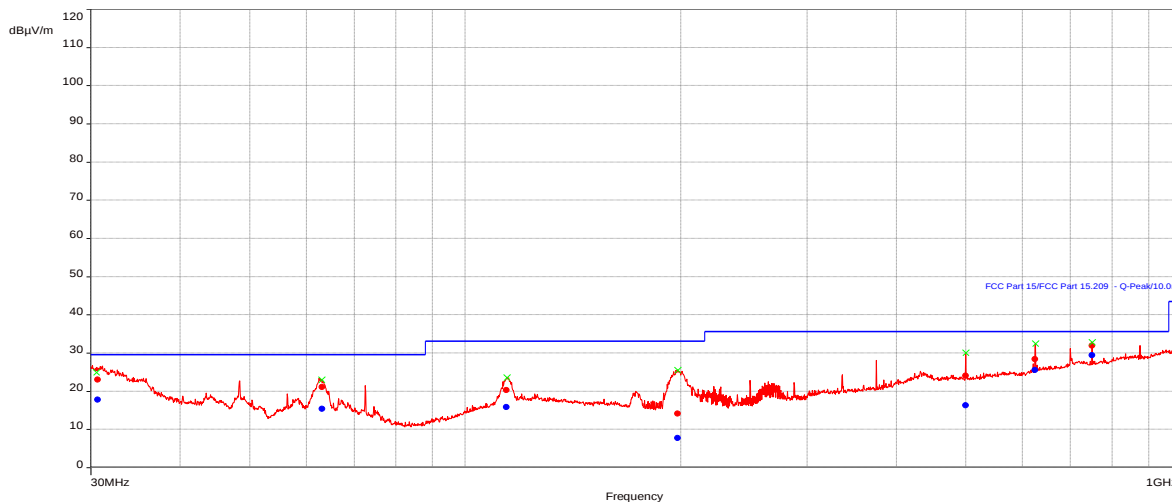


09:30:25 PM 11/22/2024

BLE (Plastic Enclosure, With Keypad), Low Channel, 30-1000 MHz, Test Distance at 10m, (V/H Polarities)

Test Information:

Date and Time	10/30/2024 1:30:57 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	39 %
Atmospheric Pressure	1018 mbars
Comments	Scan 15 BLE Tx Low (Plastic- Keypad), POE Powered, RE 30-1000 MHz, 10m

Graph:**Results:****QuasiPeak (PASS) (7)**

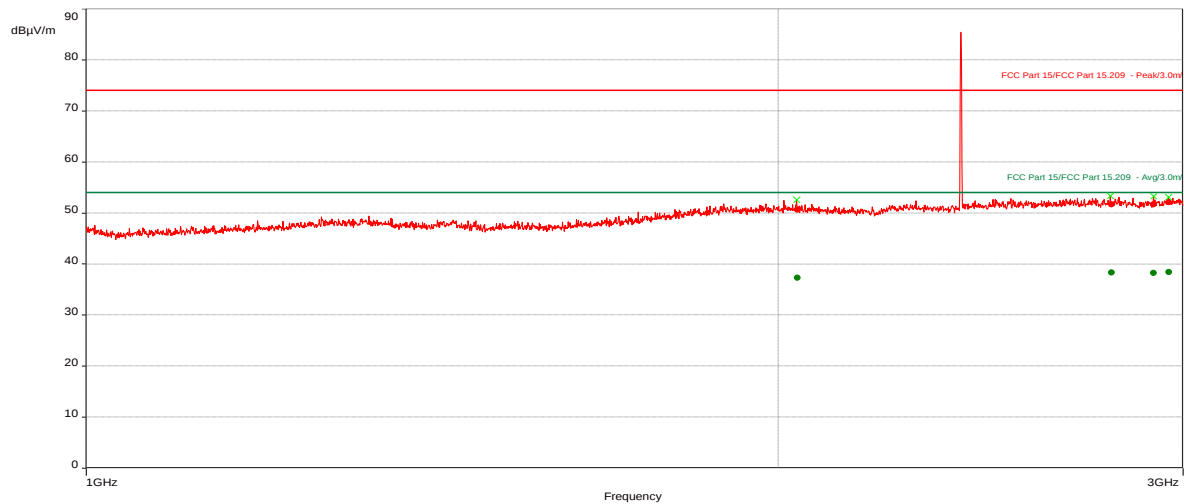
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
30.6762	17.78	29.54	-11.76	93.50	1.90	Vertical	120k	0.10	-13.16
63.1138	15.36	29.54	-14.18	50.20	4.00	Vertical	120k	0.10	-25.40
114.1324	15.90	33.06	-17.16	87.80	4.00	Vertical	120k	0.10	-19.33
197.8953	7.78	33.06	-25.28	71.40	3.73	Horizontal	120k	0.10	-19.72
500.0325	16.35	35.56	-19.21	77.20	4.00	Horizontal	120k	0.10	-13.49
625.0006	25.61	35.56	-9.95	196.10	4.00	Vertical	120k	0.10	-11.10
750.0165	29.45	35.56	-6.11	190.80	1.31	Horizontal	120k	0.10	-9.12

BLE (Plastic Enclosure, With Keypad), Low Channel, 1-3 GHz, Test Distance at 3m, (V/H Polarities)

Test Information:

Date and Time	11/22/2024 11:14:25 AM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	35 %
Atmospheric Pressure	986 mbar
Comments	Scan 72_BLE Tx Low (Plastic With Keypad), RE 1 to 3 GHz (Used PRE12 + 10 dB Attenuator)

Graph:



Results:

Peak (PASS) (4)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2039.02	50.62	74.00	-23.38	113.60	4.00	Vertical	1M	1.00	5.99
2792.967	51.69	74.00	-22.31	152.60	2.51	Horizontal	1M	1.00	7.17
2913.089	51.71	74.00	-22.29	360.00	3.05	Horizontal	1M	1.00	7.14
2957.887	52.07	74.00	-21.93	230.60	1.44	Horizontal	1M	1.00	7.28

AVG (PASS) (4)

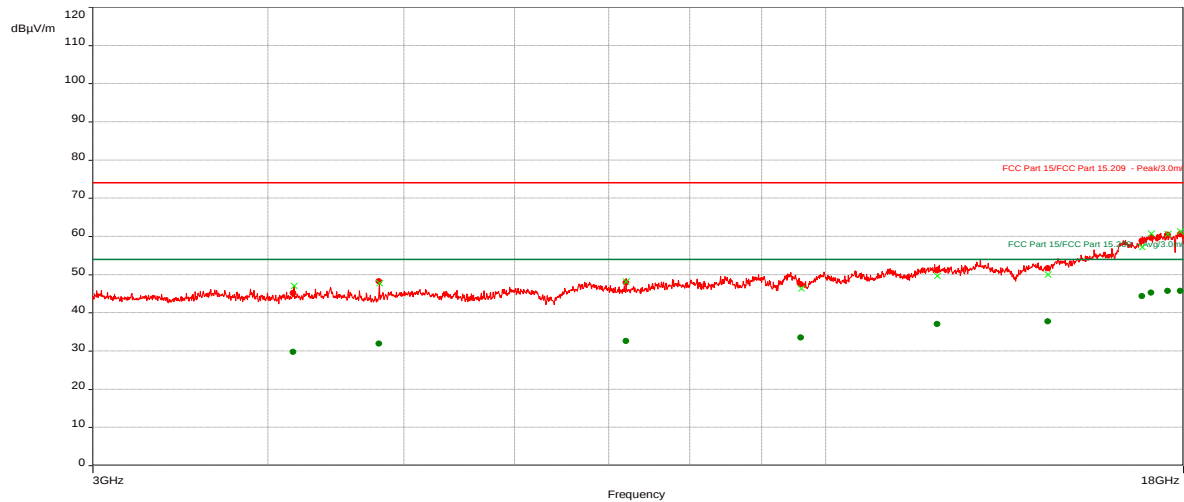
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2039.02	37.35	54.00	-16.65	113.60	4.00	Vertical	1M	1.00	5.99
2792.967	38.35	54.00	-15.65	152.60	2.51	Horizontal	1M	1.00	7.17
2913.089	38.27	54.00	-15.73	360.00	3.05	Horizontal	1M	1.00	7.14
2957.887	38.40	54.00	-15.60	230.60	1.44	Horizontal	1M	1.00	7.28

Notes: The 2.4 GHz notch filter was not available. A 10 dB attenuator was used at the input of the pre-amp to reduce the fundamental signal. The highest peak on the plot is the fundamental signal.

BLE (Plastic Enclosure, With Keypad), Low Channel, 3-18 GHz, Test Distance at 3m, (V/H Polarities)

Test Information:

Date and Time	11/8/2024 10:30:47 AM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	35 %
Atmospheric Pressure	1003 mbars
Comments	Scan 29 BLE Tx Low (Plastic- Keypad), POE Powered, RE 3-18 GHz 3m

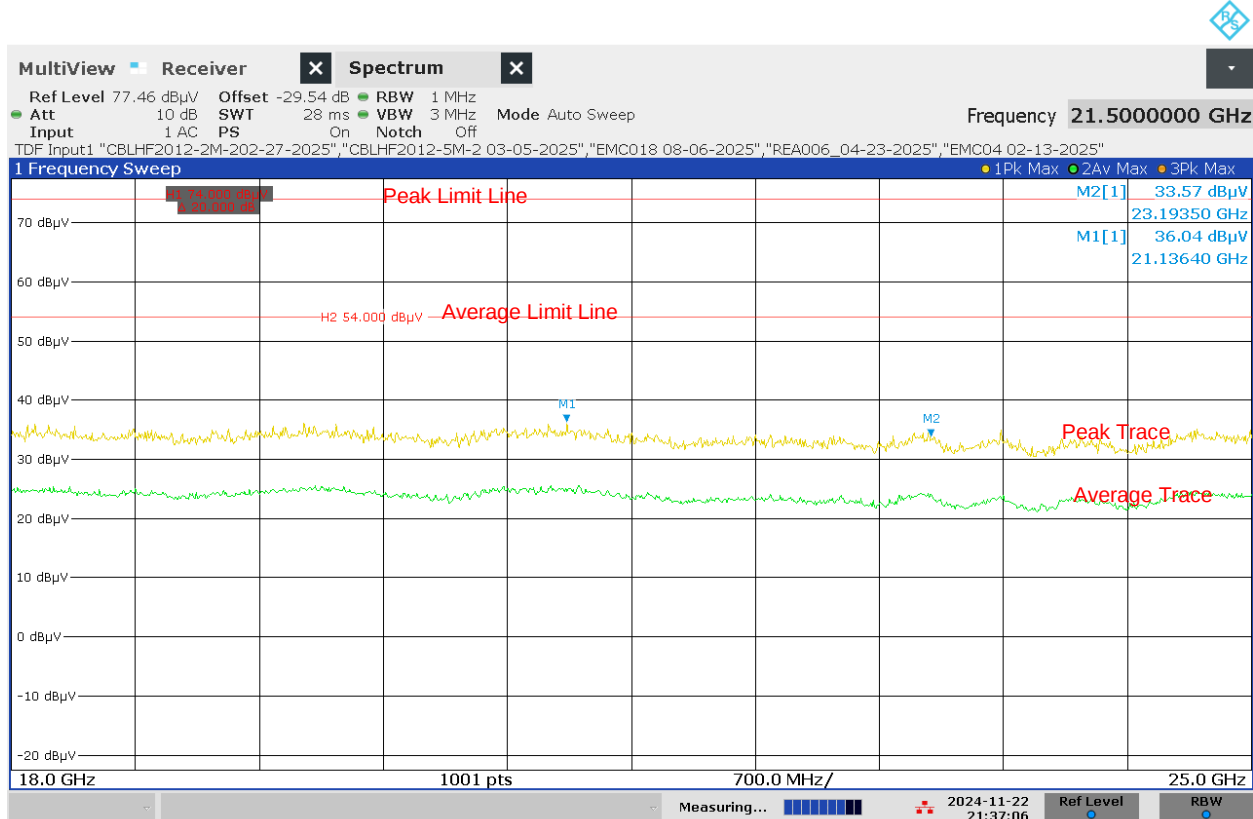
Graph:**Results:****Peak (PASS) (10)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
4171.424	45.14	74.00	-28.86	360.00	4.00	Horizontal	1M	1.00	-10.94
4802.953	48.29	74.00	-25.71	0.00	1.00	Horizontal	1M	1.00	-9.67
7205.813	47.93	74.00	-26.07	360.00	1.00	Horizontal	1M	1.00	-5.60
9604.21	47.42	74.00	-26.58	360.00	1.00	Vertical	1M	1.00	-2.85
12010.487	51.12	74.00	-22.88	360.00	1.00	Horizontal	1M	1.00	1.43
14412.486	51.69	74.00	-22.31	265.70	1.00	Vertical	1M	1.00	3.48
16816.281	58.87	74.00	-15.13	0.00	4.00	Horizontal	1M	1.00	8.16
17071.709	59.71	74.00	-14.29	265.70	4.00	Horizontal	1M	1.00	8.17
17544.119	60.48	74.00	-13.52	360.00	1.00	Vertical	1M	1.00	8.28
17905.378	60.55	74.00	-13.45	265.70	4.00	Vertical	1M	1.00	8.79

AVG (PASS) (10)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
4171.424	29.73	54.00	-24.27	360.00	4.00	Horizontal	1M	1.00	-10.94
4802.953	31.91	54.00	-22.09	0.00	1.00	Horizontal	1M	1.00	-9.67
7205.813	32.59	54.00	-21.41	360.00	1.00	Horizontal	1M	1.00	-5.60
9604.21	33.49	54.00	-20.51	360.00	1.00	Vertical	1M	1.00	-2.85
12010.487	37.13	54.00	-16.87	360.00	1.00	Horizontal	1M	1.00	1.43
14412.486	37.74	54.00	-16.26	265.70	1.00	Vertical	1M	1.00	3.48
16816.281	44.36	54.00	-9.64	0.00	4.00	Horizontal	1M	1.00	8.16
17071.709	45.28	54.00	-8.72	265.70	4.00	Horizontal	1M	1.00	8.17
17544.119	45.79	54.00	-8.21	360.00	1.00	Vertical	1M	1.00	8.28
17905.378	45.73	54.00	-8.27	265.70	4.00	Vertical	1M	1.00	8.79

BLE (Plastic Enclosure, With Keypad), Low Channel, 18-25 GHz, Test Distance at 10cm, (V/H Polarities)



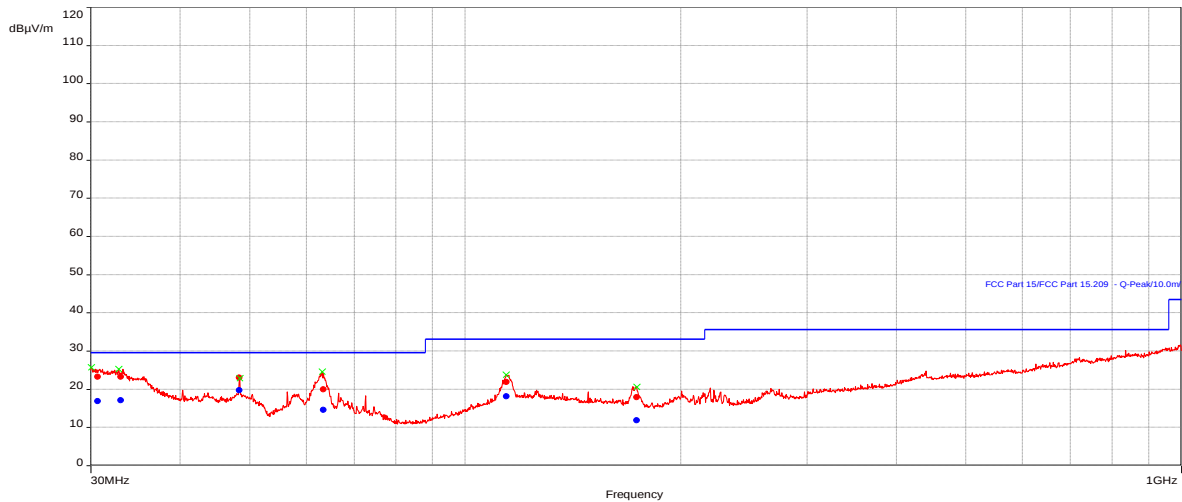
09:37:07 PM 11/22/2024

BLE (Plastic Enclosure, With Keypad), Mid Channel, 30-1000 MHz, Test Distance at 10m, (V/H Polarities)

Test Information:

Date and Time	10/30/2024 2:15:30 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	39 %
Atmospheric Pressure	1018 mbars
Comments	Scan 16 BLE Tx Mid (Plastic- Keypad), POE Powered, RE 30-1000 MHz, 10m

Graph:



Results:

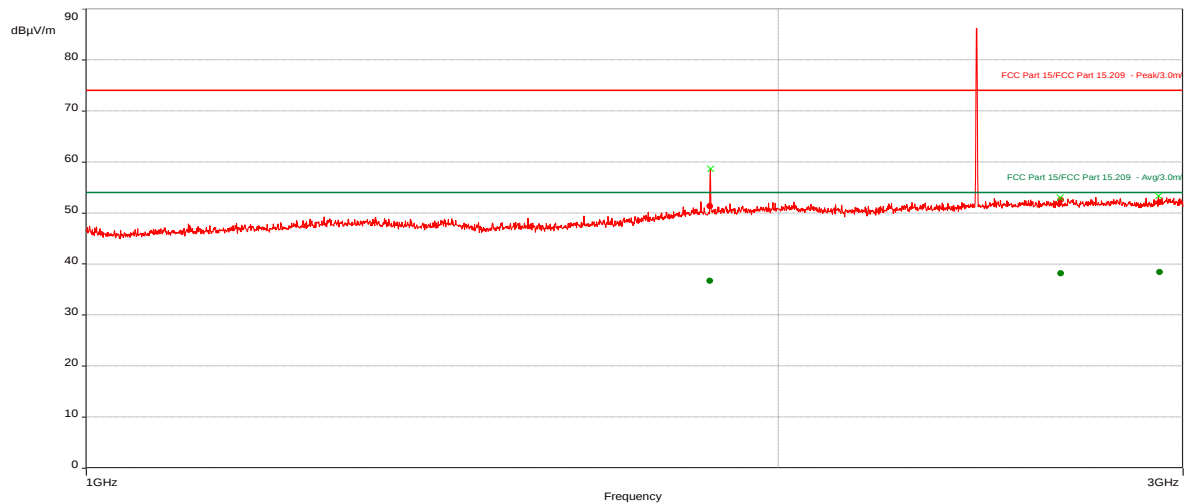
QuasiPeak (PASS) (6)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
30.6935	16.93	29.54	-12.61	44.90	2.66	Vertical	120k	0.10	-13.17
33.022	17.13	29.54	-12.41	93.20	1.00	Vertical	120k	0.10	-14.77
48.396	19.71	29.54	-9.83	201.80	1.40	Vertical	120k	0.10	-24.83
63.3534	14.66	29.54	-14.88	77.20	4.00	Vertical	120k	0.10	-25.40
114.1708	18.12	33.06	-14.94	39.30	1.31	Vertical	120k	0.10	-19.32
173.4495	11.89	33.06	-21.17	77.00	1.31	Vertical	120k	0.10	-20.74

BLE (Plastic Enclosure, With Keypad), Mid Channel, 1-3 GHz, Test Distance at 3m, (V/H Polarities)

Test Information:

Date and Time	11/22/2024 11:37:54 AM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	35 %
Atmospheric Pressure	986 mbar
Comments	Scan 73_BLE Tx Mid (Plastic With Keypad), RE 1 to 3 GHz (Used PRE12 + 10 dB Attenuator)

Graph:**Results:****Peak (PASS) (3)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
1868.289	51.34	74.00	-22.66	231.10	3.05	Horizontal	1M	1.00	5.23
2654.183	52.54	74.00	-21.46	231.10	3.05	Vertical	1M	1.00	6.95
2930.69	52.08	74.00	-21.92	230.90	2.51	Horizontal	1M	1.00	7.22

AVG (PASS) (3)

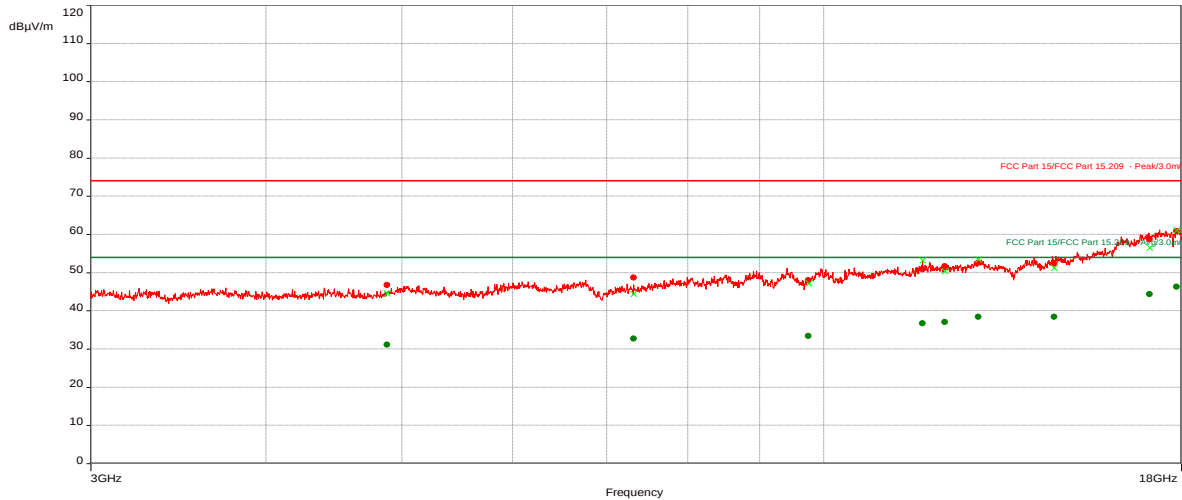
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
1868.289	36.69	54.00	-17.31	231.10	3.05	Horizontal	1M	1.00	5.23
2654.183	38.15	54.00	-15.85	231.10	3.05	Vertical	1M	1.00	6.95
2930.69	38.39	54.00	-15.61	230.90	2.51	Horizontal	1M	1.00	7.22

Notes: The 2.4 GHz notch filter was not available. A 10 dB attenuator was used at the input of the pre-amp to reduce the fundamental signal. The highest peak on the plot is the fundamental signal.

BLE (Plastic Enclosure, With Keypad), Mid Channel, 3-18 GHz, Test Distance at 3m, (V/H Polarities)

Test Information:

Date and Time	11/8/2024 12:36:29 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	35 %
Atmospheric Pressure	1003 mbars
Comments	Scan 32 BLE Tx Mid (Plastic- Keypad), POE Powered, RE 3-18 GHz 3m

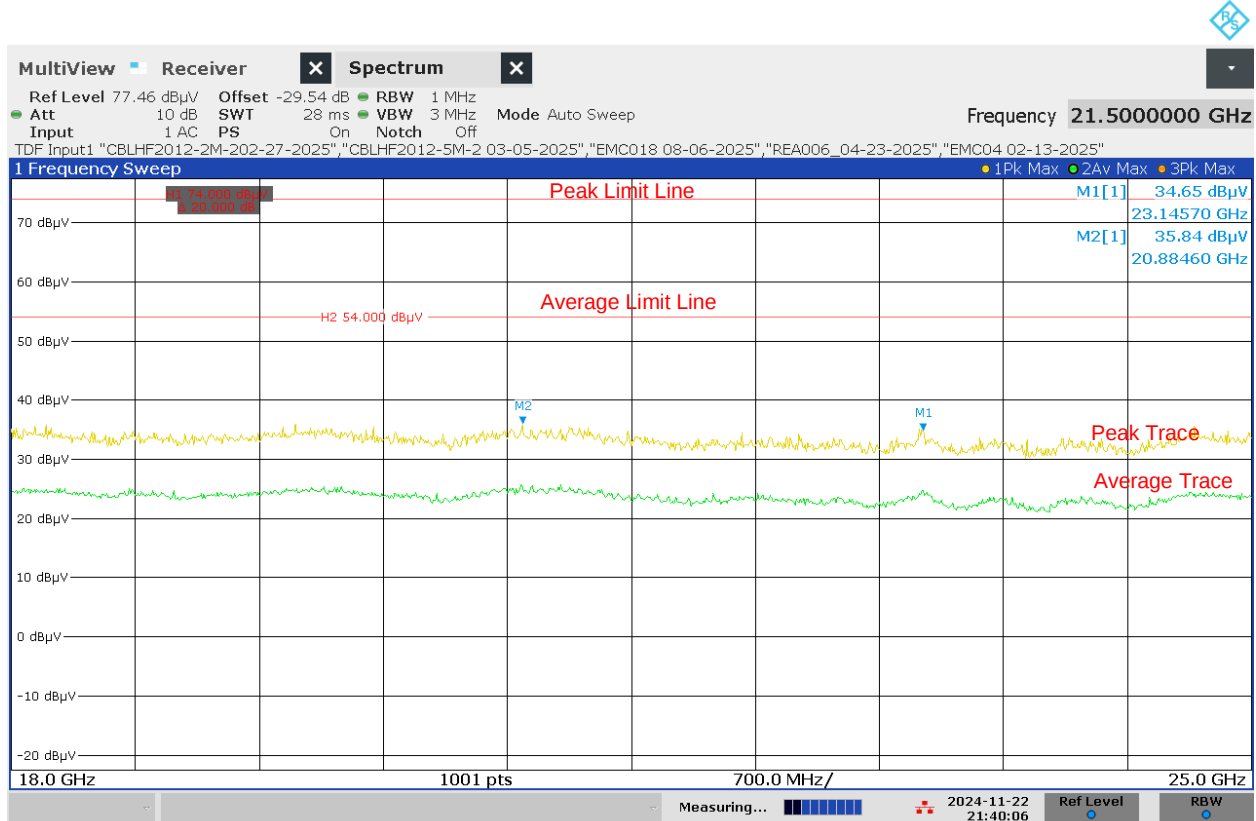
Graph:**Results:****Peak (PASS) (9)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
4880.71	46.83	74.00	-27.17	0.00	4.00	Vertical	1M	1.00	-9.48
7320.174	48.66	74.00	-25.34	0.00	1.00	Horizontal	1M	1.00	-5.49
9755.486	48.07	74.00	-25.93	360.00	1.00	Vertical	1M	1.00	-2.35
11765.402	50.83	74.00	-23.17	0.00	1.00	Horizontal	1M	1.00	1.20
12199.339	51.67	74.00	-22.33	265.80	1.00	Vertical	1M	1.00	1.67
12893.737	52.63	74.00	-21.37	360.00	4.00	Vertical	1M	1.00	2.54
14601.247	52.41	74.00	-21.59	265.70	1.00	Horizontal	1M	1.00	3.62
17080.847	58.76	74.00	-15.24	265.80	4.00	Horizontal	1M	1.00	8.17
17864.242	60.87	74.00	-13.13	360.00	1.00	Horizontal	1M	1.00	8.74

AVG (PASS) (9)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
4880.71	31.12	54.00	-22.88	0.00	4.00	Vertical	1M	1.00	-9.48
7320.174	32.74	54.00	-21.26	0.00	1.00	Horizontal	1M	1.00	-5.49
9755.486	33.46	54.00	-20.54	360.00	1.00	Vertical	1M	1.00	-2.35
11765.402	36.77	54.00	-17.23	0.00	1.00	Horizontal	1M	1.00	1.20
12199.339	37.08	54.00	-16.92	265.80	1.00	Vertical	1M	1.00	1.67
12893.737	38.41	54.00	-15.59	360.00	4.00	Vertical	1M	1.00	2.54
14601.247	38.46	54.00	-15.54	265.70	1.00	Horizontal	1M	1.00	3.62
17080.847	44.43	54.00	-9.57	265.80	4.00	Horizontal	1M	1.00	8.17
17864.242	46.29	54.00	-7.71	360.00	1.00	Horizontal	1M	1.00	8.74

BLE (Plastic Enclosure, With Keypad), Mid Channel, 18-25 GHz, Test Distance at 10cm, (V/H Polarities)



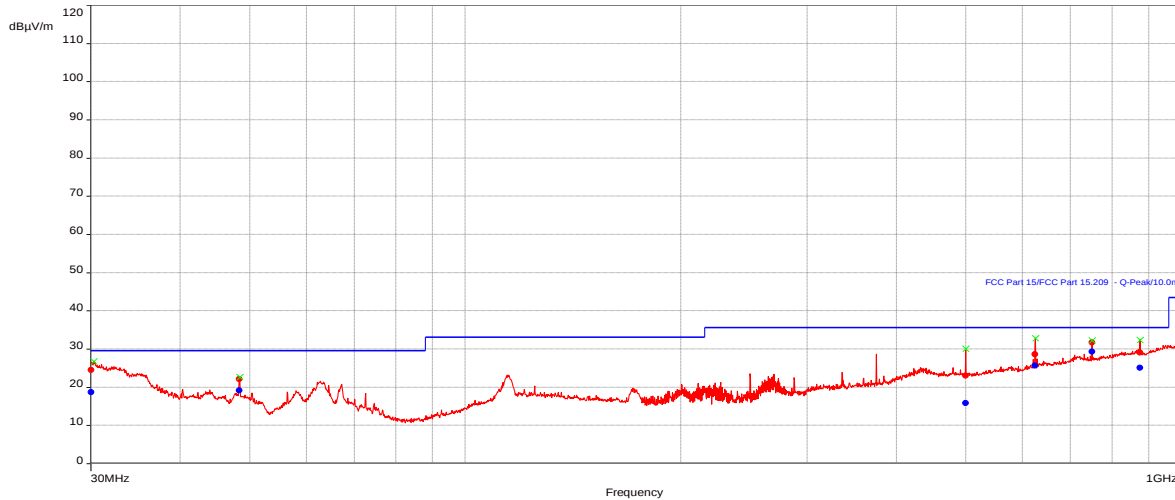
09:40:07 PM 11/22/2024

BLE (Plastic Enclosure, With Keypad), High Channel, 30-1000 MHz, Test Distance at 10m, (V/H Polarities)

Test Information:

Date and Time	10/30/2024 2:58:02 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	39 %
Atmospheric Pressure	1018 mbars
Comments	Scan 17 BLE Tx High (Plastic- Keypad), POE Powered, RE 30-1000 MHz, 10m

Graph:



Results:

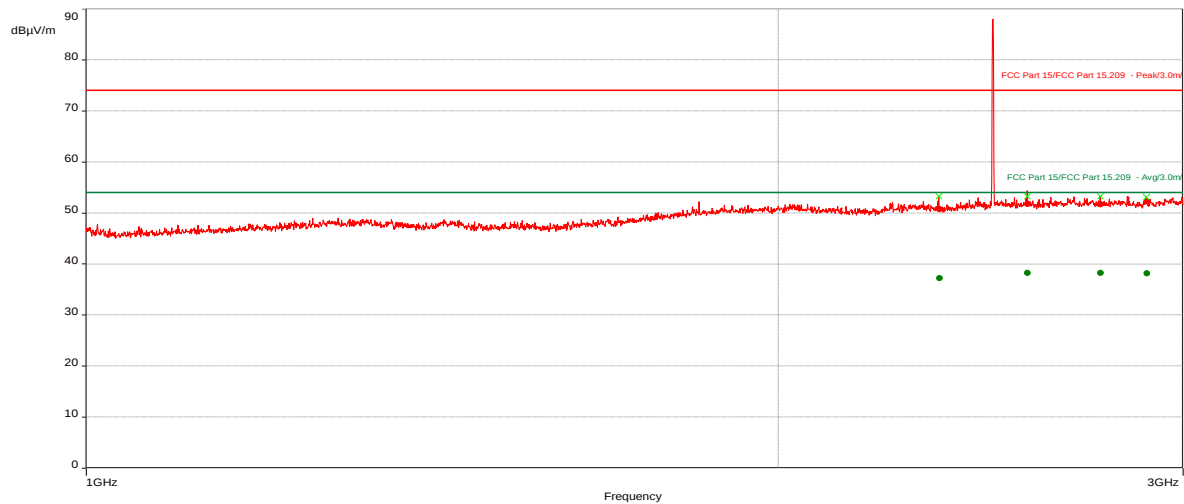
QuasiPeak (PASS) (6)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
30.0217	18.75	29.54	-10.79	142.30	2.97	Vertical	120k	0.10	-12.90
48.402	19.21	29.54	-10.33	1.30	1.31	Vertical	120k	0.10	-24.84
500.0535	15.84	35.56	-19.72	76.60	4.00	Horizontal	120k	0.10	-13.49
625.0021	25.68	35.56	-9.88	299.00	4.00	Vertical	120k	0.10	-11.10
750.0164	29.30	35.56	-6.26	184.90	1.32	Horizontal	120k	0.10	-9.12
874.9951	25.16	35.56	-10.40	126.00	4.00	Vertical	120k	0.10	-7.04

BLE (Plastic Enclosure, With Keypad), High Channel, 1-3 GHz, Test Distance at 3m, (V/H Polarities)

Test Information:

Date and Time	11/22/2024 11:55:08 AM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	35 %
Atmospheric Pressure	986 mbar
Comments	Scan 74_BLE Tx High (Plastic With Keypad), RE 1 to 3 GHz (Used PRE12 + 10 dB Attenuator)

Graph:**Results:****Peak (PASS) (4)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2351.643	50.74	74.00	-23.26	191.90	4.00	Vertical	1M	1.00	5.93
2568.172	51.75	74.00	-22.25	360.00	3.58	Vertical	1M	1.00	6.95
2762.722	51.68	74.00	-22.32	309.20	3.05	Horizontal	1M	1.00	7.10
2894.792	52.31	74.00	-21.69	230.60	1.44	Vertical	1M	1.00	7.00

AVG (PASS) (4)

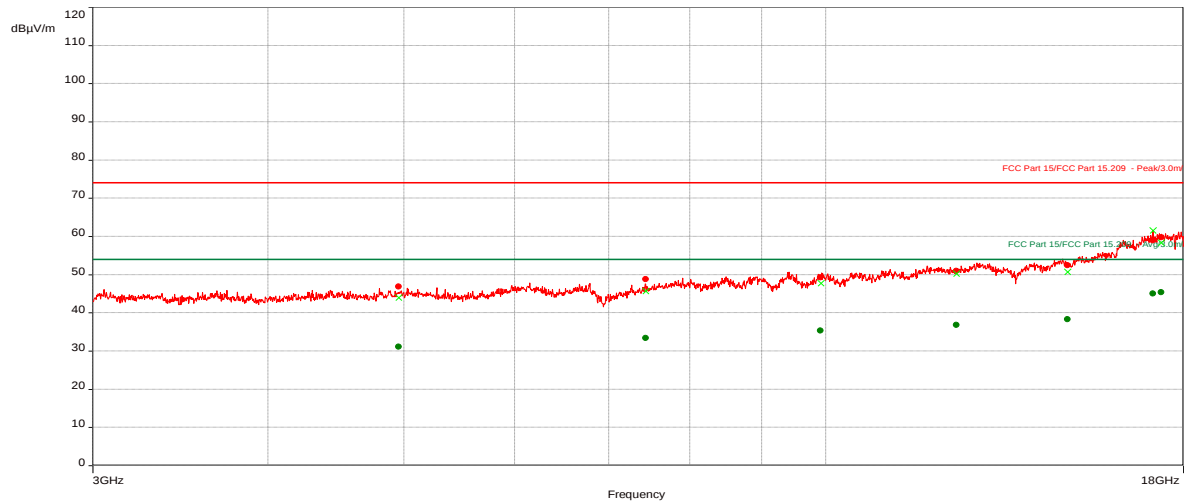
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2351.643	37.22	54.00	-16.78	191.90	4.00	Vertical	1M	1.00	5.93
2568.172	38.25	54.00	-15.75	360.00	3.58	Vertical	1M	1.00	6.95
2762.722	38.26	54.00	-15.74	309.20	3.05	Horizontal	1M	1.00	7.10
2894.792	38.18	54.00	-15.82	230.60	1.44	Vertical	1M	1.00	7.00

Notes: The 2.4 GHz notch filter was not available. A 10 dB attenuator was used at the input of the pre-amp to reduce the fundamental signal. The highest peak on the plot is the fundamental signal.

BLE (Plastic Enclosure, With Keypad), High Channel, 3-18 GHz, Test Distance at 3m, (V/H Polarities)

Test Information:

Date and Time	11/8/2024 1:33:01 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	35 %
Atmospheric Pressure	1003 mbars
Comments	Scan 33 BLE Tx High (Plastic- Keypad), POE Powered, RE 3-18 GHz 3m

Graph:**Results:****Peak (PASS) (7)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
4958.878	46.90	74.00	-27.10	360.00	4.00	Horizontal	1M	1.00	-9.42
7441.085	48.78	74.00	-25.22	0.00	1.00	Vertical	1M	1.00	-5.18
9917.705	49.31	74.00	-24.69	360.00	4.00	Horizontal	1M	1.00	-2.19
12398.392	50.97	74.00	-23.03	0.00	1.00	Vertical	1M	1.00	2.34
14881.995	52.43	74.00	-21.57	360.00	1.00	Vertical	1M	1.00	3.99
17125.445	59.03	74.00	-14.97	265.70	1.00	Horizontal	1M	1.00	8.18
17361.085	59.83	74.00	-14.17	265.70	4.00	Vertical	1M	1.00	8.17

AVG (PASS) (7)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
4958.878	31.15	54.00	-22.85	360.00	4.00	Horizontal	1M	1.00	-9.42
7441.085	33.38	54.00	-20.62	0.00	1.00	Vertical	1M	1.00	-5.18
9917.705	35.36	54.00	-18.64	360.00	4.00	Horizontal	1M	1.00	-2.19
12398.392	36.83	54.00	-17.17	0.00	1.00	Vertical	1M	1.00	2.34
14881.995	38.33	54.00	-15.67	360.00	1.00	Vertical	1M	1.00	3.99
17125.445	45.02	54.00	-8.98	265.70	1.00	Horizontal	1M	1.00	8.18
17361.085	45.46	54.00	-8.54	265.70	4.00	Vertical	1M	1.00	8.17

BLE (Plastic Enclosure, With Keypad), High Channel, 18-25 GHz, Test Distance at 10cm, (V/H Polarities)



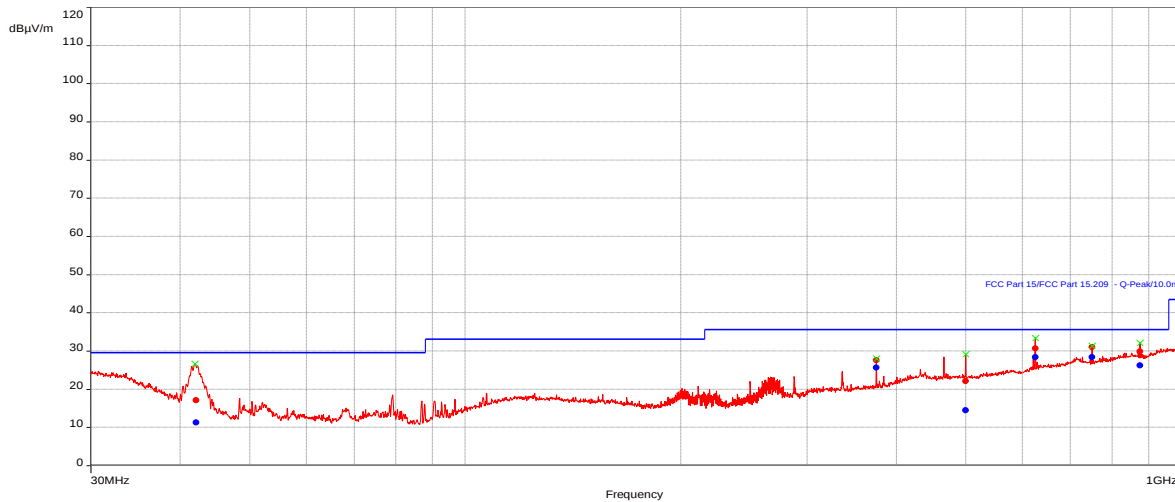
09:44:42 PM 11/22/2024

BLE (Metal Enclosure, Without Keypad), Low Channel, 30-1000 MHz, Test Distance at 10m, (V/H Polarities)

Test Information:

Date and Time	10/24/2024 12:53:40 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	26 deg C
Humidity	38 %
Atmospheric Pressure	1002 mbars
Comments	Scan 1 BLE (Metal - No Keypad) Tx Low, POE Powered, RE 30-1000 MHz, 10m

Graph:



Results:

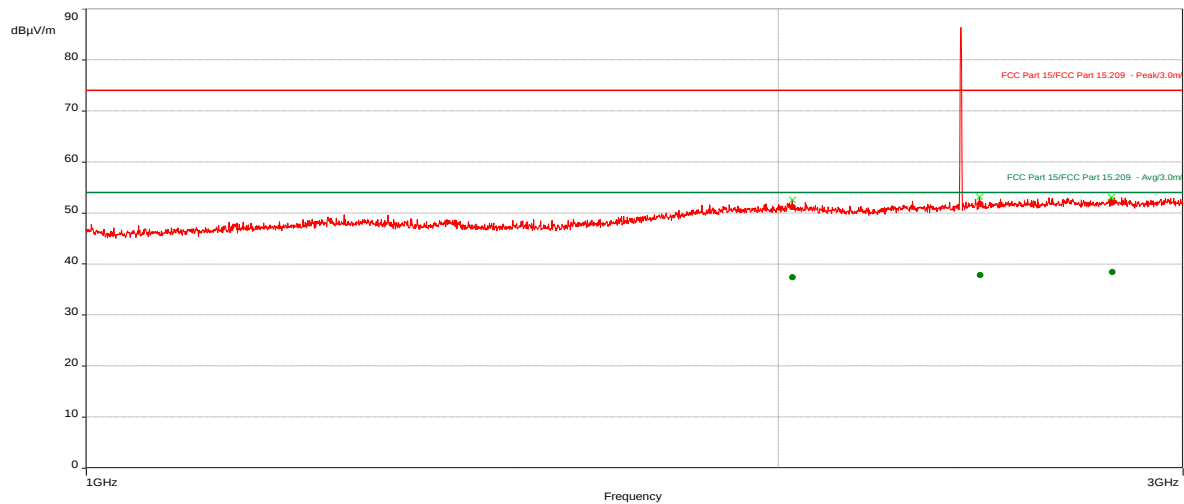
QuasiPeak (PASS) (6)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
42.0941	11.31	29.54	-18.23	104.20	3.86	Vertical	120k	0.10	-21.17
375.003	25.64	35.56	-9.92	131.70	3.71	Vertical	120k	0.10	-16.68
500.0399	14.49	35.56	-21.07	82.50	4.00	Horizontal	120k	0.10	-13.49
625.0245	28.38	35.56	-7.18	304.40	4.00	Vertical	120k	0.10	-11.10
750.012	28.46	35.56	-7.10	207.00	1.31	Horizontal	120k	0.10	-9.12
875.022	26.30	35.56	-9.26	22.70	4.00	Vertical	120k	0.10	-7.04

BLE (Metal Enclosure, Without Keypad), Low Channel, 1-3 GHz, Test Distance at 3m, (V/H Polarities)

Test Information:

Date and Time	11/22/2024 8:54:41 AM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	35 %
Atmospheric Pressure	986 mbar
Comments	Scan 66_BLE Tx Low (Metal Without Keypad), RE 1 to 3 GHz (Used PRE12 + 10 dB Attenuator)

Graph:**Results:****Peak (PASS) (3)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2029.597	51.15	74.00	-22.85	308.90	2.51	Horizontal	1M	1.00	6.01
2449.071	51.74	74.00	-22.26	360.00	2.51	Horizontal	1M	1.00	6.52
2796.24	52.06	74.00	-21.94	360.00	3.05	Horizontal	1M	1.00	7.17

AVG (PASS) (3)

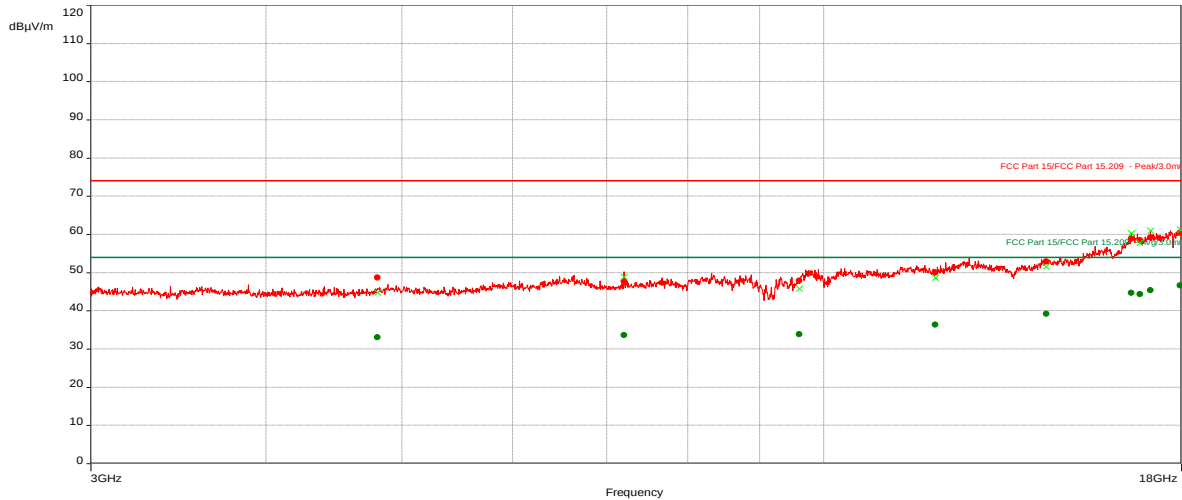
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2029.597	37.35	54.00	-16.65	308.90	2.51	Horizontal	1M	1.00	6.01
2449.071	37.79	54.00	-16.21	360.00	2.51	Horizontal	1M	1.00	6.52
2796.24	38.42	54.00	-15.58	360.00	3.05	Horizontal	1M	1.00	7.17

Notes: The 2.4 GHz notch filter was not available. A 10 dB attenuator was used at the input of the pre-amp to reduce the fundamental signal. The highest peak on the plot is the fundamental signal.

BLE (Metal Enclosure, Without Keypad), Low Channel, 3-18 GHz, Test Distance at 3m, (V/H Polarities)

Test Information:

Date and Time	11/12/2024 2:03:48 PM
Client and Project Number	Sargent Assa Abloy
Engineer	kouma Sinn
Temperature	23 deg C
Humidity	34 %
Atmospheric Pressure	999 mbars
Comments	Scan 44 BLE Tx Low (Metal- No Keypad), POE Powered, RE 3-18 GHz 3m

Graph:**Results:**

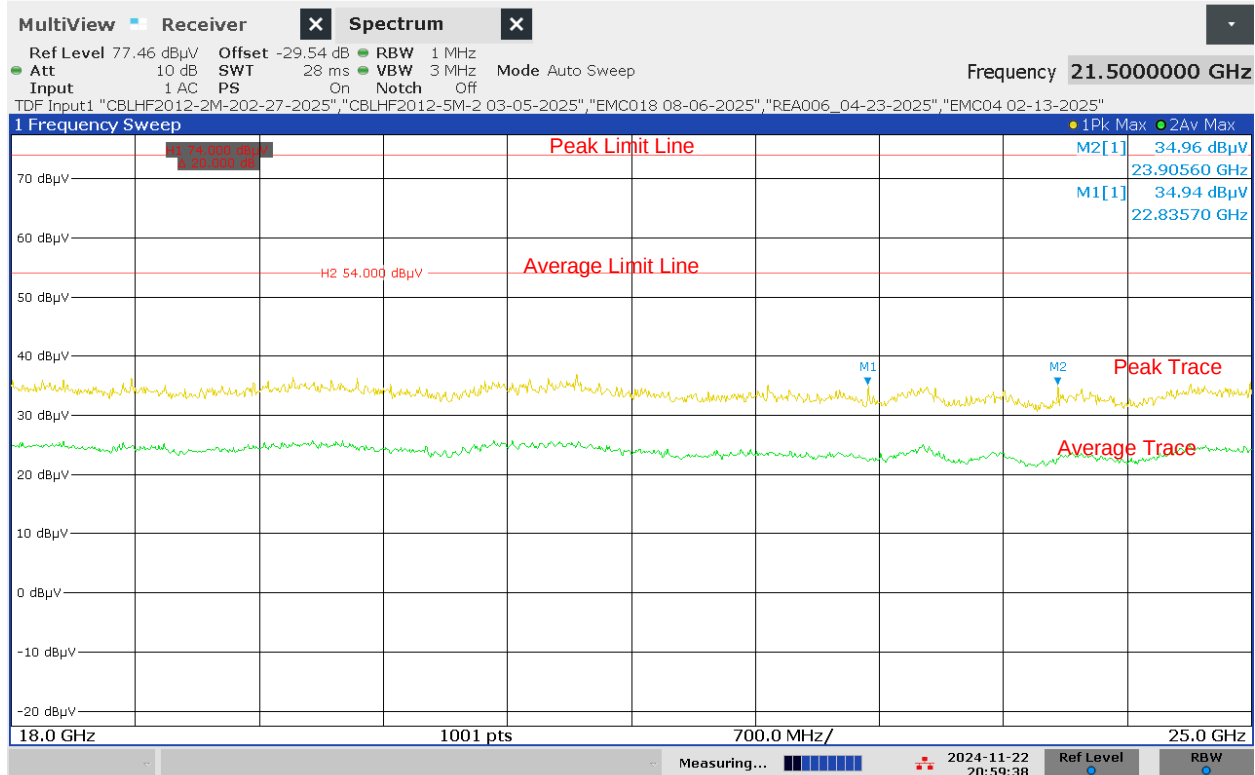
Peak (PASS) (9)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
4805.109	48.75	74.00	-25.25	360.00	4.00	Horizontal	1M	1.00	-9.66
7204.953	47.76	74.00	-26.24	360.00	1.00	Horizontal	1M	1.00	-5.60
9607.938	47.90	74.00	-26.10	0.00	1.00	Horizontal	1M	1.00	-2.84
12012.058	50.06	74.00	-23.94	360.00	1.00	Horizontal	1M	1.00	1.43
14413.434	52.98	74.00	-21.02	265.90	4.00	Vertical	1M	1.00	3.48
16577.871	58.83	74.00	-15.17	360.00	1.00	Vertical	1M	1.00	7.48
16812.993	58.52	74.00	-15.48	265.70	4.00	Vertical	1M	1.00	8.16
17103.928	59.25	74.00	-14.75	265.60	1.00	Horizontal	1M	1.00	8.16
17968.167	60.45	74.00	-13.55	0.00	1.00	Horizontal	1M	1.00	8.75

AVG (PASS) (9)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
4805.109	33.13	54.00	-20.87	360.00	4.00	Horizontal	1M	1.00	-9.66
7204.953	33.66	54.00	-20.34	360.00	1.00	Horizontal	1M	1.00	-5.60
9607.938	33.85	54.00	-20.15	0.00	1.00	Horizontal	1M	1.00	-2.84
12012.058	36.35	54.00	-17.65	360.00	1.00	Horizontal	1M	1.00	1.43
14413.434	39.21	54.00	-14.79	265.90	4.00	Vertical	1M	1.00	3.48
16577.871	44.75	54.00	-9.25	360.00	1.00	Vertical	1M	1.00	7.48
16812.993	44.42	54.00	-9.58	265.70	4.00	Vertical	1M	1.00	8.16
17103.928	45.45	54.00	-8.55	265.60	1.00	Horizontal	1M	1.00	8.16
17968.167	46.63	54.00	-7.37	0.00	1.00	Horizontal	1M	1.00	8.75

BLE (Metal Enclosure, Without Keypad), Low Channel, 18-25 GHz, Test Distance at 10cm, (V/H Polarities)



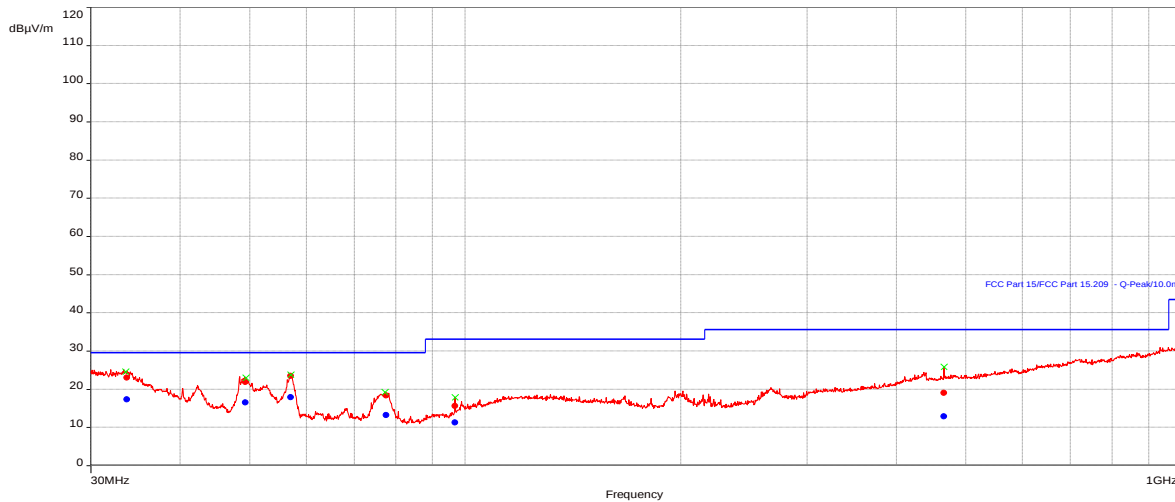
08:59:39 PM 11/22/2024

BLE (Metal Enclosure, Without Keypad), Mid Channel, 30-1000 MHz, Test Distance at 10m, (V/H Polarities)

Test Information:

Date and Time	10/24/2024 1:43:40 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	26 deg C
Humidity	38 %
Atmospheric Pressure	1002 mbars
Comments	Scan 2 BLE (Metal - No Keypad) Tx Mid, POE Powered, RE 30-1000 MHz, 10m

Graph:



Results:

QuasiPeak (PASS) (6)

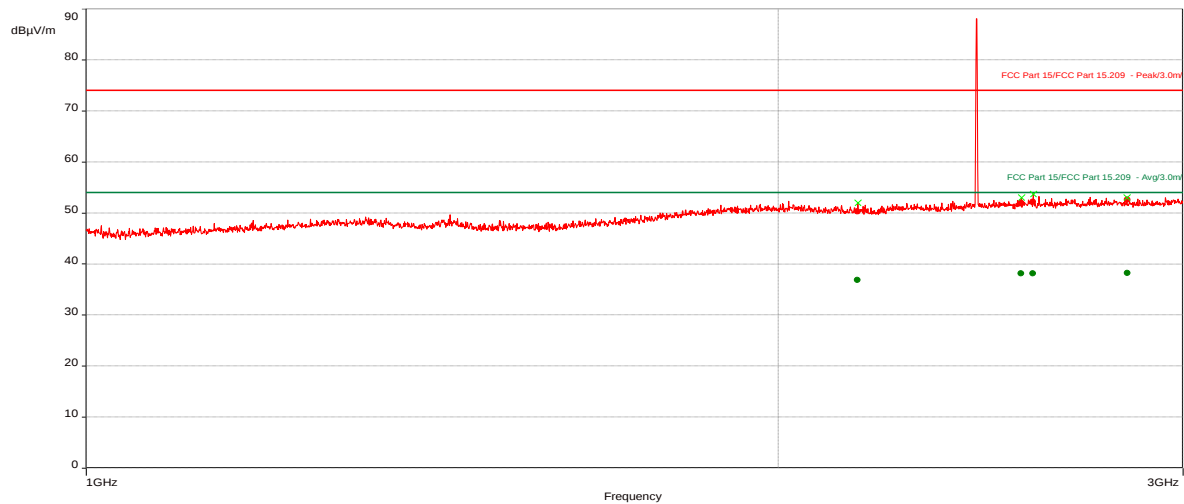
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
33.7061	17.40	29.54	-12.14	298.80	1.99	Vertical	120k	0.10	-15.24
49.3082	16.51	29.54	-13.03	147.50	2.45	Vertical	120k	0.10	-25.15
57.0869	17.88	29.54	-11.66	304.30	2.21	Vertical	120k	0.10	-25.96
77.6166	13.24	29.54	-16.30	0.00	1.38	Vertical	120k	0.10	-25.23
96.786	11.34	33.06	-21.72	266.30	4.00	Vertical	120k	0.10	-23.42
466.159	12.96	35.56	-22.60	353.60	4.00	Horizontal	120k	0.10	-13.95

BLE (Metal Enclosure, Without Keypad), Mid Channel, 1-3 GHz, Test Distance at 3m, (V/H Polarities)

Test Information:

Date and Time	11/22/2024 9:14:47 AM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	35 %
Atmospheric Pressure	986 mbar
Comments	Scan 67_BLE Tx Mid (Metal Without Keypad), RE 1 to 3 GHz (Used PRE12 + 10 dB Attenuator)

Graph:



Results:

Peak (PASS) (4)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2165.79	50.32	74.00	-23.68	191.60	3.05	Vertical	1M	1.00	5.50
2551.401	52.05	74.00	-21.95	34.90	4.00	Vertical	1M	1.00	6.91
2580.906	52.23	74.00	-21.77	0.00	2.51	Vertical	1M	1.00	6.88
2837.759	52.59	74.00	-21.41	113.20	2.51	Vertical	1M	1.00	7.03

AVG (PASS) (4)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2165.79	36.84	54.00	-17.16	191.60	3.05	Vertical	1M	1.00	5.50
2551.401	38.18	54.00	-15.82	34.90	4.00	Vertical	1M	1.00	6.91
2580.906	38.18	54.00	-15.82	0.00	2.51	Vertical	1M	1.00	6.88
2837.759	38.25	54.00	-15.75	113.20	2.51	Vertical	1M	1.00	7.03

Notes: The 2.4 GHz notch filter was not available. A 10 dB attenuator was used at the input of the pre-amp to reduce the fundamental signal. The highest peak on the plot is the fundamental signal.

BLE (Metal Enclosure, Without Keypad), Mid Channel, 3-18 GHz, Test Distance at 3m, (V/H Polarities)

Test Information:

Date and Time	11/12/2024 1:15:20 PM
Client and Project Number	Sargent Assa Abloy
Engineer	kouma Sinn
Temperature	23 deg C
Humidity	34 %
Atmospheric Pressure	999 mbars
Comments	Scan 43 BLE Tx Mid (Metal- No Keypad), POE Powered, RE 3-18 GHz, 3m

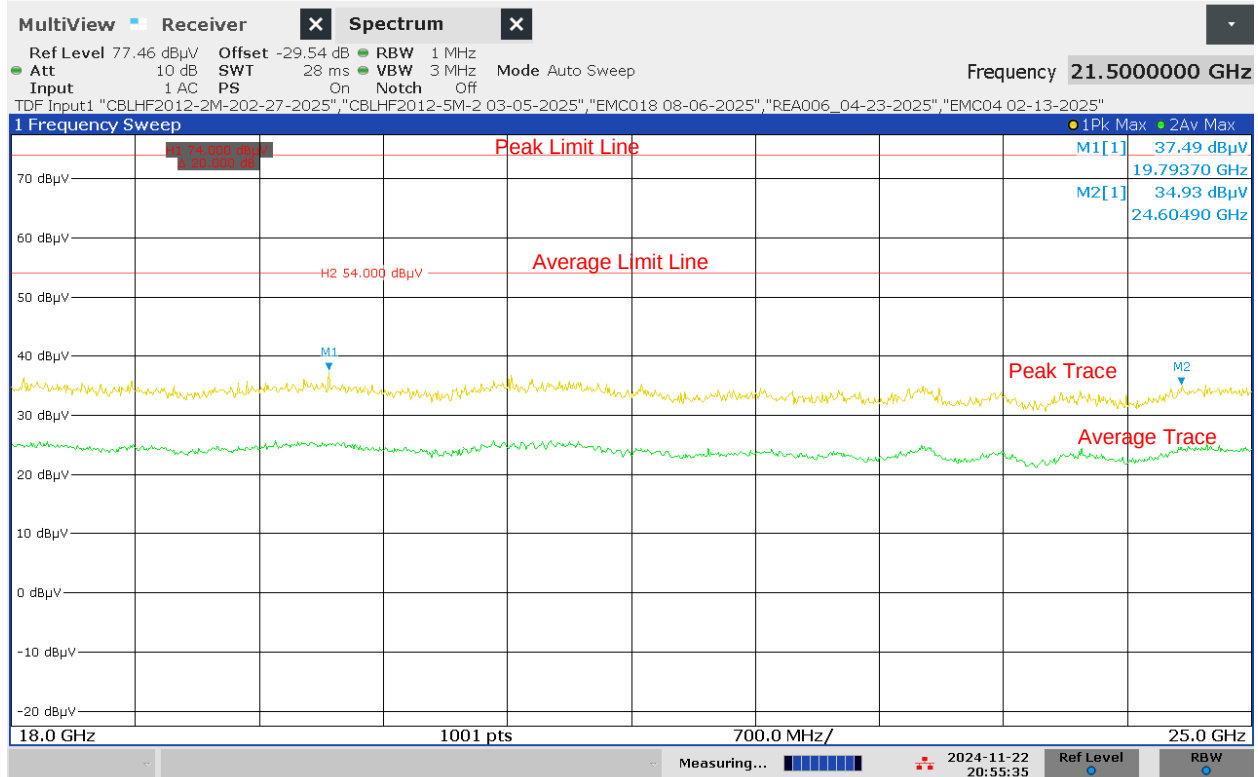
Graph:**Results:****Peak (PASS) (8)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
4881.583	46.51	74.00	-27.49	0.00	4.00	Horizontal	1M	1.00	-9.48
7318.554	49.16	74.00	-24.84	360.00	1.00	Horizontal	1M	1.00	-5.49
9757.257	50.11	74.00	-23.89	265.70	1.00	Horizontal	1M	1.00	-2.35
12202.369	50.87	74.00	-23.13	0.00	1.00	Horizontal	1M	1.00	1.68
14639.339	52.25	74.00	-21.75	360.00	4.00	Horizontal	1M	1.00	3.70
16594.898	59.43	74.00	-14.57	265.80	1.00	Vertical	1M	1.00	7.53
17078.329	59.06	74.00	-14.94	265.80	1.00	Vertical	1M	1.00	8.17
17940.891	61.16	74.00	-12.84	265.70	1.00	Horizontal	1M	1.00	8.76

AVG (PASS) (8)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
4881.583	31.69	54.00	-22.31	0.00	4.00	Horizontal	1M	1.00	-9.48
7318.554	34.18	54.00	-19.82	360.00	1.00	Horizontal	1M	1.00	-5.49
9757.257	36.08	54.00	-17.92	265.70	1.00	Horizontal	1M	1.00	-2.35
12202.369	36.95	54.00	-17.05	0.00	1.00	Horizontal	1M	1.00	1.68
14639.339	38.46	54.00	-15.54	360.00	4.00	Horizontal	1M	1.00	3.70
16594.898	45.31	54.00	-8.69	265.80	1.00	Vertical	1M	1.00	7.53
17078.329	45.05	54.00	-8.95	265.80	1.00	Vertical	1M	1.00	8.17
17940.891	46.52	54.00	-7.48	265.70	1.00	Horizontal	1M	1.00	8.76

BLE (Metal Enclosure, Without Keypad), Mid Channel, 18-25 GHz, Test Distance at 10cm, (V/H Polarities)



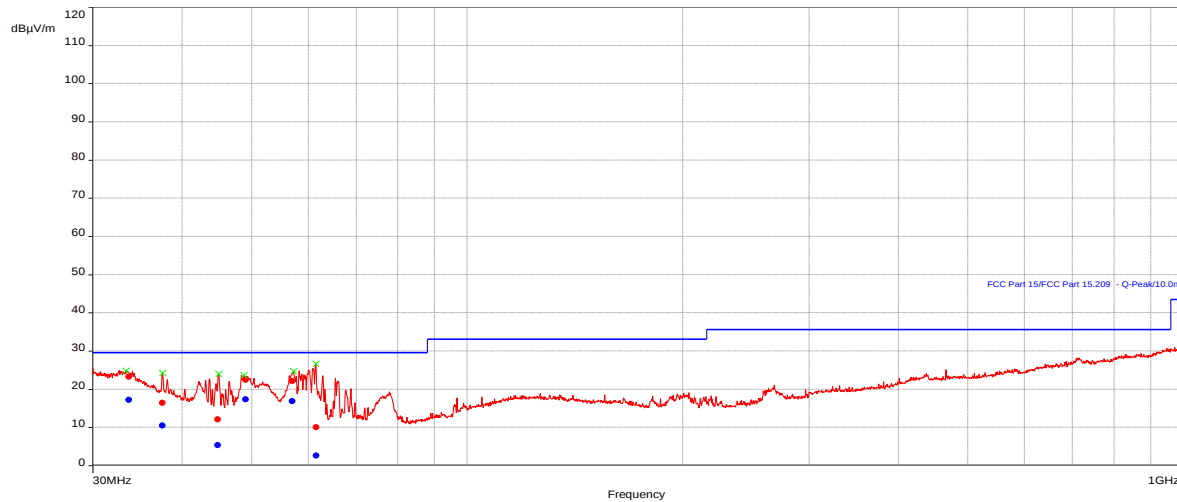
08:55:35 PM 11/22/2024

BLE (Metal Enclosure, Without Keypad), High Channel, 30-1000 MHz, Test Distance at 10m, (V/H Polarities)

Test Information:

Date and Time	10/24/2024 2:14:08 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	26 deg C
Humidity	38 %
Atmospheric Pressure	1002 mbars
Comments	Scan 3 BLE (Metal - No Keypad) Tx High, POE Powered, RE 30-1000 MHz, 10m

Graph:



Results:

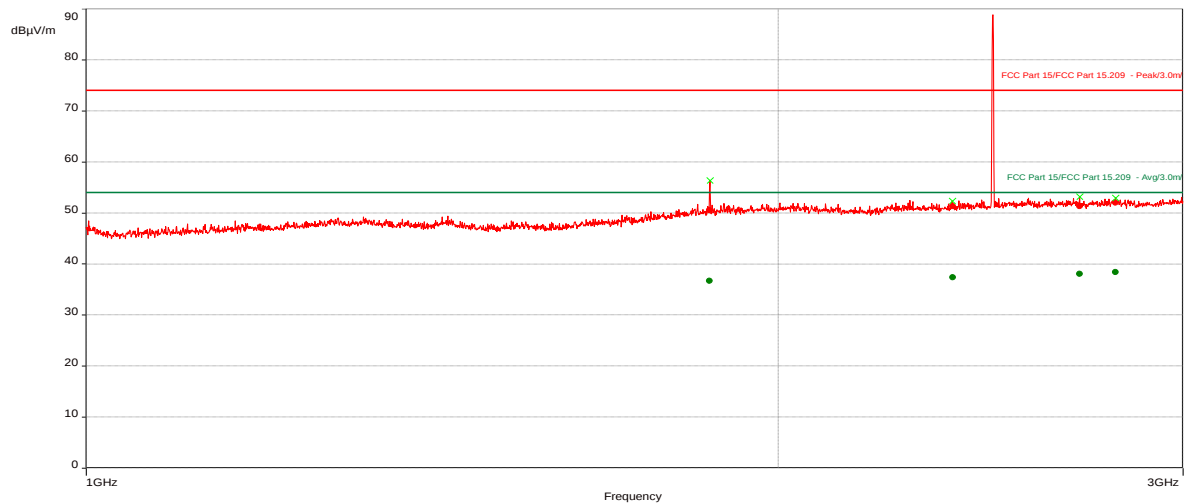
QuasiPeak (PASS) (6)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
33.7146	17.26	29.54	-12.28	353.50	1.76	Vertical	120k	0.10	-15.25
37.5674	10.47	29.54	-19.07	152.40	4.00	Horizontal	120k	0.10	-17.92
44.8833	5.32	29.54	-24.22	239.60	4.00	Horizontal	120k	0.10	-23.06
49.0538	17.38	29.54	-12.16	152.90	1.76	Vertical	120k	0.10	-25.07
57.008	16.92	29.54	-12.62	310.00	4.00	Vertical	120k	0.10	-25.96
61.5612	2.67	29.54	-26.87	266.50	4.00	Horizontal	120k	0.10	-25.56

BLE (Metal Enclosure, Without Keypad), High Channel, 1-3 GHz, Test Distance at 3m, (V/H Polarities)

Test Information:

Date and Time	11/22/2024 9:38:00 AM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	35 %
Atmospheric Pressure	986 mbar
Comments	Scan 68_BLE Tx High (Metal Without Keypad), RE 1 to 3 GHz (Used PRE12 + 10 dB Attenuator)

Graph:**Results:****Peak (PASS) (4)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
1867.464	50.54	74.00	-23.46	152.40	2.51	Vertical	1M	1.00	5.22
2382.123	51.35	74.00	-22.65	231.00	3.58	Vertical	1M	1.00	6.10
2705.798	51.37	74.00	-22.63	0.00	4.00	Vertical	1M	1.00	6.91
2804.737	52.02	74.00	-21.98	152.50	3.05	Horizontal	1M	1.00	7.16

AVG (PASS) (4)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
1867.464	36.73	54.00	-17.27	152.40	2.51	Vertical	1M	1.00	5.22
2382.123	37.39	54.00	-16.61	231.00	3.58	Vertical	1M	1.00	6.10
2705.798	38.12	54.00	-15.88	0.00	4.00	Vertical	1M	1.00	6.91
2804.737	38.39	54.00	-15.61	152.50	3.05	Horizontal	1M	1.00	7.16

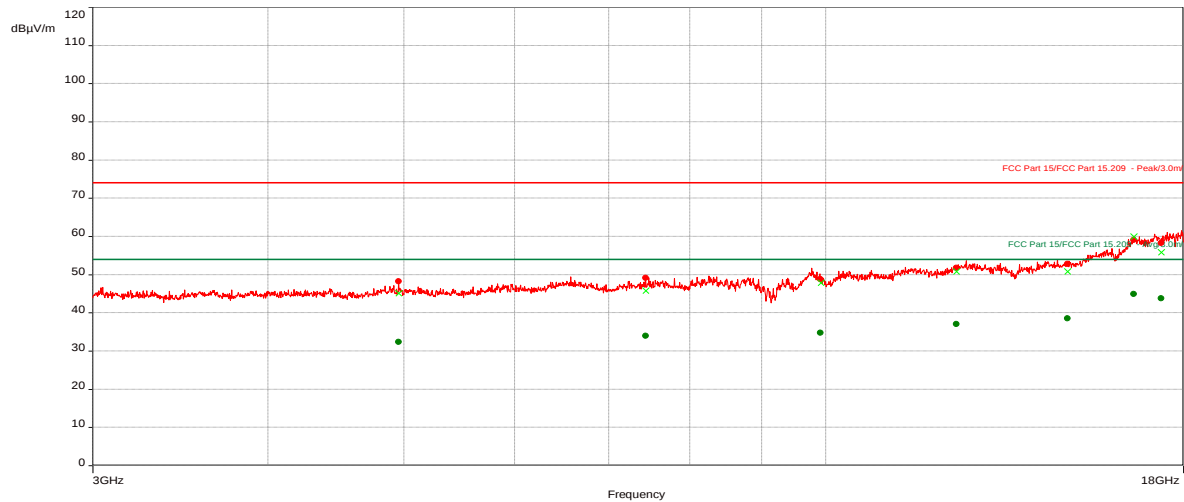
Notes: The 2.4 GHz notch filter was not available. A 10 dB attenuator was used at the input of the pre-amp to reduce the fundamental signal. The highest peak on the plot is the fundamental signal.

BLE (Metal Enclosure, Without Keypad), High Channel, 3-18 GHz, Test Distance at 3m, (V/H Polarities)

Test Information:

Date and Time	11/12/2024 2:59:08 PM
Client and Project Number	Sargent Assa Abloy
Engineer	kouma Sinn
Temperature	23 deg C
Humidity	34 %
Atmospheric Pressure	999 mbars
Comments	Scan 45 BLE Tx High (Metal- No Keypad), POE Powered, RE 3-18 GHz! 3m

Graph:



Results:

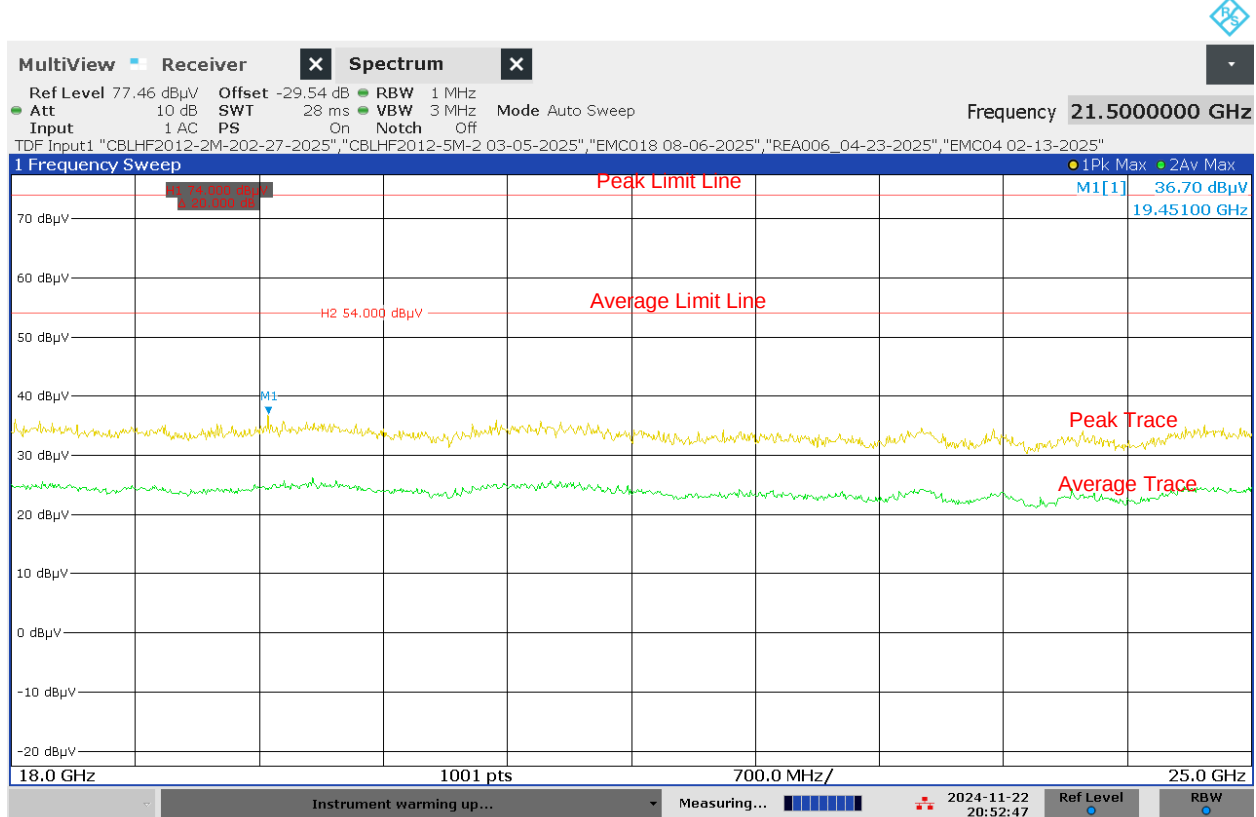
Peak (PASS) (7)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
4960.125	48.23	74.00	-25.77	0.00	4.00	Vertical	1M	1.00	-9.42
7441.508	49.16	74.00	-24.84	0.00	1.00	Horizontal	1M	1.00	-5.18
9917.058	48.83	74.00	-25.17	0.00	4.00	Vertical	1M	1.00	-2.19
12399.613	51.82	74.00	-22.18	265.70	1.00	Vertical	1M	1.00	2.35
14875.536	52.78	74.00	-21.22	0.00	1.00	Vertical	1M	1.00	3.98
16591.088	59.10	74.00	-14.90	265.80	1.00	Horizontal	1M	1.00	7.52
17359.102	58.27	74.00	-15.73	265.80	1.00	Vertical	1M	1.00	8.17

AVG (PASS) (7)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
4960.125	32.45	54.00	-21.55	0.00	4.00	Vertical	1M	1.00	-9.42
7441.508	34.04	54.00	-19.96	0.00	1.00	Horizontal	1M	1.00	-5.18
9917.058	34.85	54.00	-19.15	0.00	4.00	Vertical	1M	1.00	-2.19
12399.613	37.08	54.00	-16.92	265.70	1.00	Vertical	1M	1.00	2.35
14875.536	38.54	54.00	-15.46	0.00	1.00	Vertical	1M	1.00	3.98
16591.088	44.98	54.00	-9.02	265.80	1.00	Horizontal	1M	1.00	7.52
17359.102	43.76	54.00	-10.24	265.80	1.00	Vertical	1M	1.00	8.17

BLE (Metal Enclosure, Without Keypad), High Channel, 18-25 GHz, Test Distance at 10cm, (V/H Polarities)

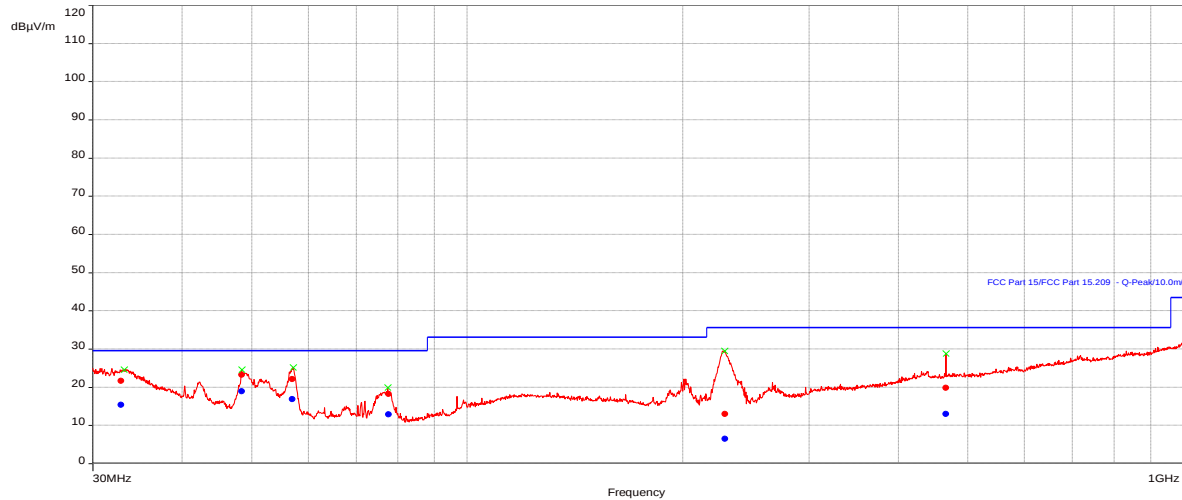


08:52:47 PM 11/22/2024

BLE (Plastic Enclosure, Without Keypad), Low Channel, 30-1000 MHz, Test Distance at 10m, (V/H Polarities)

Test Information:

Date and Time	10/24/2024 2:49:45 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	26 deg C
Humidity	38 %
Atmospheric Pressure	1002 mbars
Comments	Scan 4 BLE (Plastic - No Keypad) Tx Low, POE Powered, RE 30-1000 MHz, 10m

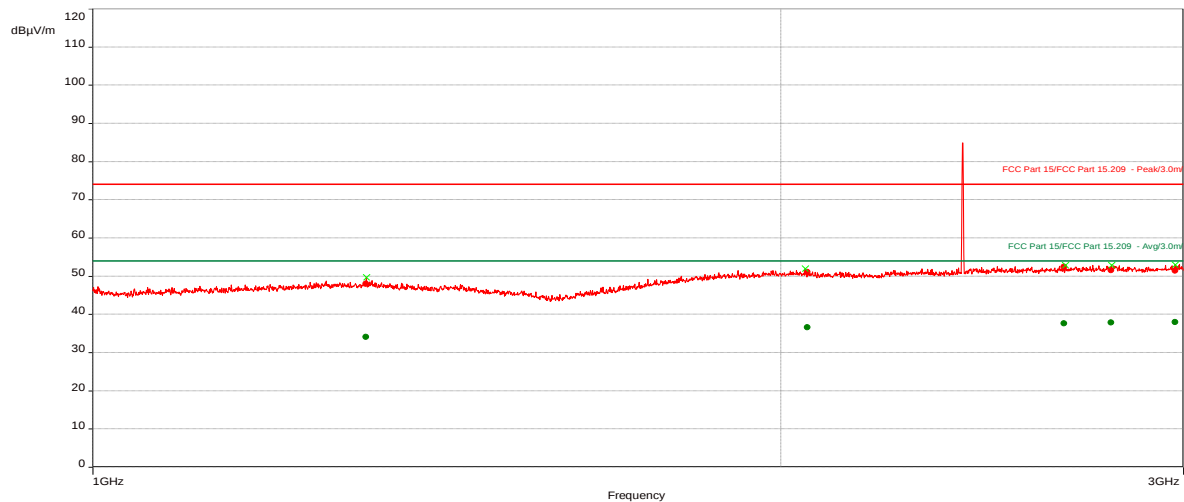
Graph:**Results:****QuasiPeak (PASS) (6)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
32.8943	15.46	29.54	-14.08	212.00	3.48	Vertical	120k	0.10	-14.66
48.4125	18.97	29.54	-10.57	185.10	2.52	Vertical	120k	0.10	-24.84
56.9929	16.85	29.54	-12.69	309.30	4.00	Vertical	120k	0.10	-25.96
77.671	12.89	29.54	-16.65	228.80	1.90	Vertical	120k	0.10	-25.23
228.9374	6.52	35.56	-29.04	272.00	4.00	Vertical	120k	0.10	-21.00
465.969	12.99	35.56	-22.57	109.50	3.79	Horizontal	120k	0.10	-13.95

BLE (Plastic Enclosure, Without Keypad), Low Channel, 1-3 GHz, Test Distance at 3m, (V/H Polarities)

Test Information:

Date and Time	11/20/2024 2:51:02 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	22 deg C
Humidity	26 %
Atmospheric Pressure	1000 mbars
Comments	Scan 63: BLE Tx Low (Plastic Without Keypad), RE 1 to 3 GHz (Used PRE12 + 10 dB Attenuator)

Graph:**Results:****Peak (PASS) (5)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
1316.726	48.07	74.00	-25.93	0.00	3.05	Vertical	1M	1.00	2.78
2054.489	51.14	74.00	-22.86	113.40	3.58	Vertical	1M	1.00	5.89
2659.785	52.45	74.00	-21.55	0.00	1.00	Horizontal	1M	1.00	6.94
2789.24	51.58	74.00	-22.42	152.70	4.00	Horizontal	1M	1.00	7.16
2975.425	51.41	74.00	-22.59	74.40	4.00	Vertical	1M	1.00	7.35

AVG (PASS) (5)

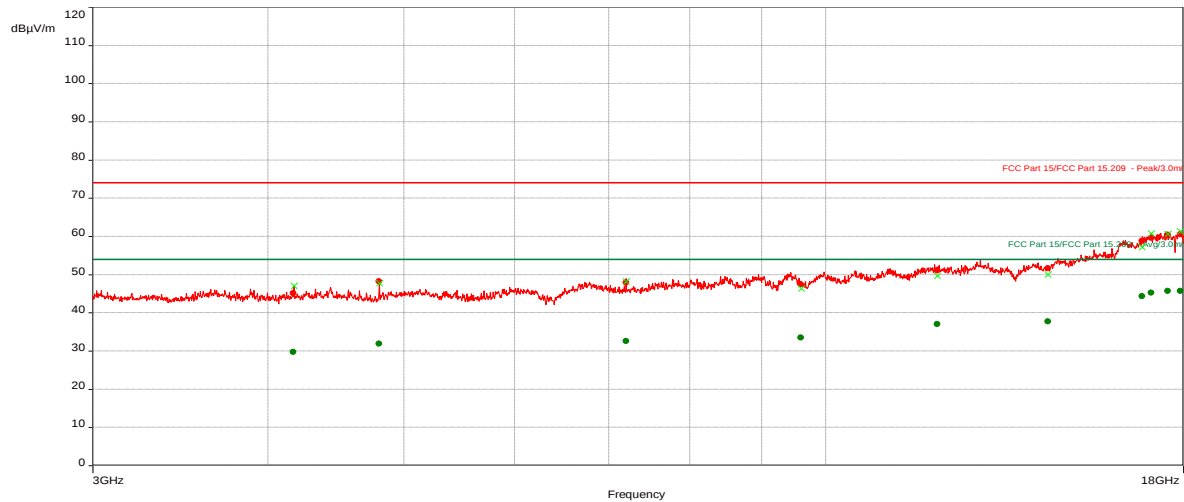
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
1316.726	34.09	54.00	-19.91	0.00	3.05	Vertical	1M	1.00	2.78
2054.489	36.63	54.00	-17.37	113.40	3.58	Vertical	1M	1.00	5.89
2659.785	37.67	54.00	-16.33	0.00	1.00	Horizontal	1M	1.00	6.94
2789.24	37.91	54.00	-16.09	152.70	4.00	Horizontal	1M	1.00	7.16
2975.425	38.05	54.00	-15.95	74.40	4.00	Vertical	1M	1.00	7.35

Notes: The 2.4 GHz notch filter was not available. A 10 dB attenuator was used at the input of the pre-amp to reduce the fundamental signal. The highest peak on the plot is the fundamental signal.

BLE (Plastic Enclosure, Without Keypad), Low Channel, 3-18 GHz, Test Distance at 3m, (V/H Polarities)

Test Information:

Date and Time	11/8/2024 10:30:47 AM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	35 %
Atmospheric Pressure	1003 mbars
Comments	Scan 29 BLE Tx Low (Plastic- Keypad), POE Powered, RE 3-18 GHz 3m

Graph:**Results:****Peak (PASS) (10)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
4171.424	45.14	74.00	-28.86	360.00	4.00	Horizontal	1M	1.00	-10.94
4802.953	48.29	74.00	-25.71	0.00	1.00	Horizontal	1M	1.00	-9.67
7205.813	47.93	74.00	-26.07	360.00	1.00	Horizontal	1M	1.00	-5.60
9604.21	47.42	74.00	-26.58	360.00	1.00	Vertical	1M	1.00	-2.85
12010.487	51.12	74.00	-22.88	360.00	1.00	Horizontal	1M	1.00	1.43
14412.486	51.69	74.00	-22.31	265.70	1.00	Vertical	1M	1.00	3.48
16816.281	58.87	74.00	-15.13	0.00	4.00	Horizontal	1M	1.00	8.16
17071.709	59.71	74.00	-14.29	265.70	4.00	Horizontal	1M	1.00	8.17
17544.119	60.48	74.00	-13.52	360.00	1.00	Vertical	1M	1.00	8.28
17905.378	60.55	74.00	-13.45	265.70	4.00	Vertical	1M	1.00	8.79

AVG (PASS) (10)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
4171.424	29.73	54.00	-24.27	360.00	4.00	Horizontal	1M	1.00	-10.94
4802.953	31.91	54.00	-22.09	0.00	1.00	Horizontal	1M	1.00	-9.67
7205.813	32.59	54.00	-21.41	360.00	1.00	Horizontal	1M	1.00	-5.60
9604.21	33.49	54.00	-20.51	360.00	1.00	Vertical	1M	1.00	-2.85
12010.487	37.13	54.00	-16.87	360.00	1.00	Horizontal	1M	1.00	1.43
14412.486	37.74	54.00	-16.26	265.70	1.00	Vertical	1M	1.00	3.48
16816.281	44.36	54.00	-9.64	0.00	4.00	Horizontal	1M	1.00	8.16
17071.709	45.28	54.00	-8.72	265.70	4.00	Horizontal	1M	1.00	8.17
17544.119	45.79	54.00	-8.21	360.00	1.00	Vertical	1M	1.00	8.28
17905.378	45.73	54.00	-8.27	265.70	4.00	Vertical	1M	1.00	8.79

BLE (Plastic Enclosure, Without Keypad), Low Channel, 18-25 GHz, Test Distance at 10cm, (V/H Polarities)

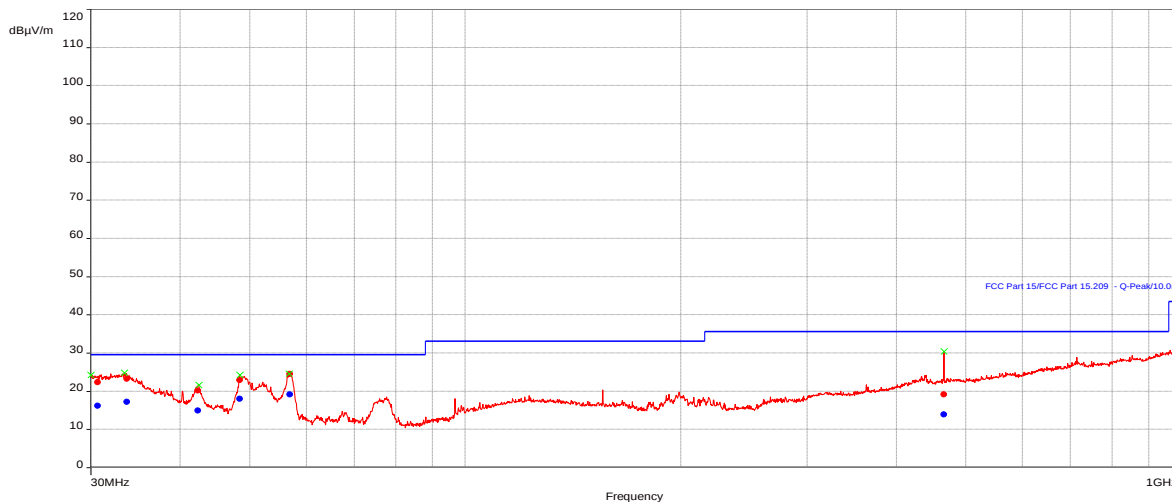


09:06:48 PM 11/22/2024

BLE (Plastic Enclosure, Without Keypad), Mid Channel, 30-1000 MHz, Test Distance at 10m, (V/H Polarities)

Test Information:

Date and Time	10/24/2024 3:22:16 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	26 deg C
Humidity	38 %
Atmospheric Pressure	1002 mbars
Comments	Scan 5 BLE (Plastic - No Keypad) Tx Mid, POE Powered, RE 30-1000 MHz, 10m

Graph:**Results:****QuasiPeak (PASS) (6)**

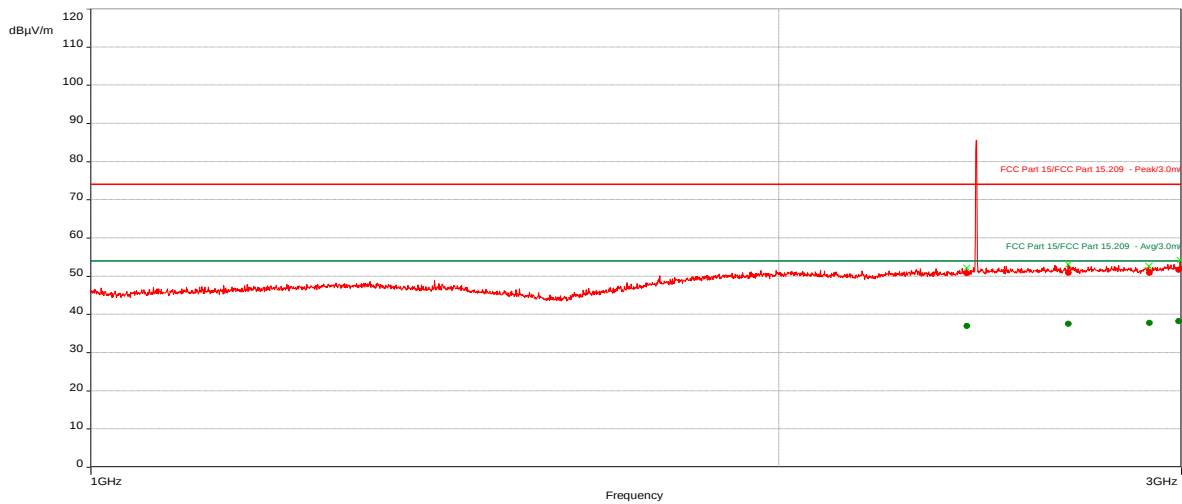
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
30.6935	16.20	29.54	-13.34	126.00	2.13	Vertical	120k	0.10	-13.17
33.7297	17.24	29.54	-12.30	244.60	1.00	Vertical	120k	0.10	-15.26
42.3363	14.93	29.54	-14.61	212.40	1.31	Vertical	120k	0.10	-21.35
48.4365	18.05	29.54	-11.49	185.30	3.11	Vertical	120k	0.10	-24.85
56.9126	19.21	29.54	-10.33	293.60	1.98	Vertical	120k	0.10	-25.96
466.0108	13.95	35.56	-21.61	142.10	3.26	Horizontal	120k	0.10	-13.95

BLE (Plastic Enclosure, Without Keypad), Mid Channel, 1-3 GHz, Test Distance at 3m, (V/H Polarities)

Test Information:

Date and Time	11/20/2024 3:16:43 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	22 deg C
Humidity	26 %
Atmospheric Pressure	1000 mbars
Comments	Scan 64: BLE Tx Mid (Plastic Without Keypad), RE 1 to 3 GHz (Used PRE12 + 10 dB Attenuator)

Graph:



Results:

Peak (PASS) (4)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2417.06	50.75	74.00	-23.25	34.90	3.05	Horizontal	1M	1.00	6.35
2678.283	50.86	74.00	-23.14	113.50	3.05	Vertical	1M	1.00	6.90
2905.319	50.88	74.00	-23.12	113.20	2.51	Horizontal	1M	1.00	7.08
2992.722	51.64	74.00	-22.36	347.90	3.05	Horizontal	1M	1.00	7.44

AVG (PASS) (4)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2417.06	37.02	54.00	-16.98	34.90	3.05	Horizontal	1M	1.00	6.35
2678.283	37.57	54.00	-16.43	113.50	3.05	Vertical	1M	1.00	6.90
2905.319	37.76	54.00	-16.24	113.20	2.51	Horizontal	1M	1.00	7.08
2992.722	38.17	54.00	-15.83	347.90	3.05	Horizontal	1M	1.00	7.44

Notes: The 2.4 GHz notch filter was not available. A 10 dB attenuator was used at the input of the pre-amp to reduce the fundamental signal. The highest peak on the plot is the fundamental signal.

BLE (Plastic Enclosure, Without Keypad), Mid Channel, 3-18 GHz, Test Distance at 3m, (V/H Polarities)

Test Information:

Date and Time	11/12/2024 9:59:02 AM
Client and Project Number	Sargent Assa Abloy
Engineer	kouma Sinn
Temperature	23 deg C
Humidity	34 %
Atmospheric Pressure	999 mbars
Comments	Scan 38 BLE Tx Mid (Plastic- No Keypad), POE Powered, RE 3-18 GHz 3m

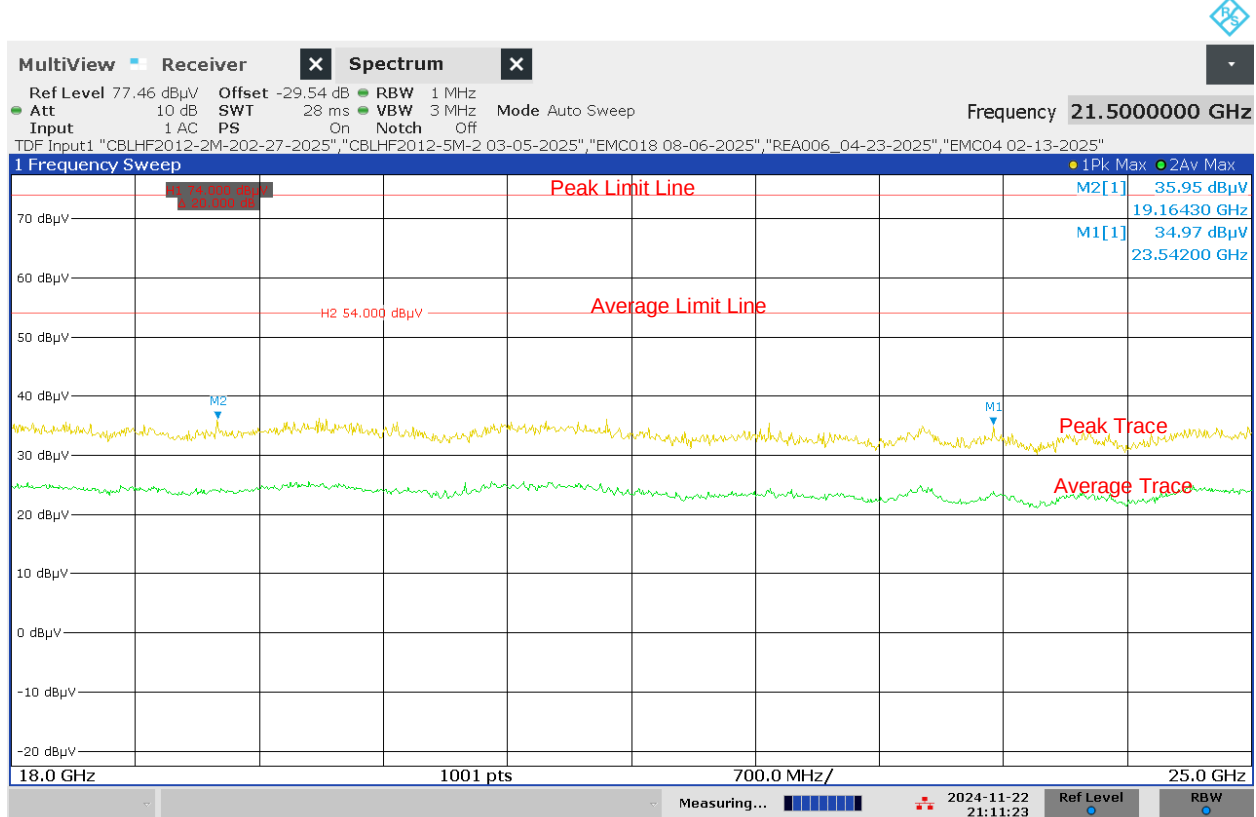
Graph:**Results:****Peak (PASS) (8)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
4879.938	47.66	74.00	-26.34	0.00	1.00	Horizontal	1M	1.00	-9.48
7321.384	52.08	74.00	-21.92	0.00	1.00	Vertical	1M	1.00	-5.48
9758.167	50.74	74.00	-23.26	265.60	4.00	Vertical	1M	1.00	-2.34
12198.391	50.97	74.00	-23.03	0.00	1.00	Horizontal	1M	1.00	1.67
14640.735	53.71	74.00	-20.29	265.60	4.00	Vertical	1M	1.00	3.71
16595.384	59.04	74.00	-14.96	0.00	1.00	Horizontal	1M	1.00	7.54
17077.332	59.09	74.00	-14.91	265.70	4.00	Horizontal	1M	1.00	8.17
17790.651	60.98	74.00	-13.02	360.00	4.00	Vertical	1M	1.00	8.66

AVG (PASS) (8)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
4879.938	32.82	54.00	-21.18	0.00	1.00	Horizontal	1M	1.00	-9.48
7321.384	36.36	54.00	-17.64	0.00	1.00	Vertical	1M	1.00	-5.48
9758.167	36.10	54.00	-17.90	265.60	4.00	Vertical	1M	1.00	-2.34
12198.391	36.78	54.00	-17.22	0.00	1.00	Horizontal	1M	1.00	1.67
14640.735	38.42	54.00	-15.58	265.60	4.00	Vertical	1M	1.00	3.71
16595.384	45.12	54.00	-8.88	0.00	1.00	Horizontal	1M	1.00	7.54
17077.332	45.47	54.00	-8.53	265.70	4.00	Horizontal	1M	1.00	8.17
17790.651	47.17	54.00	-6.83	360.00	4.00	Vertical	1M	1.00	8.66

BLE (Plastic Enclosure, Without Keypad), Mid Channel, 18-25 GHz, Test Distance at 10cm, (V/H Polarities)

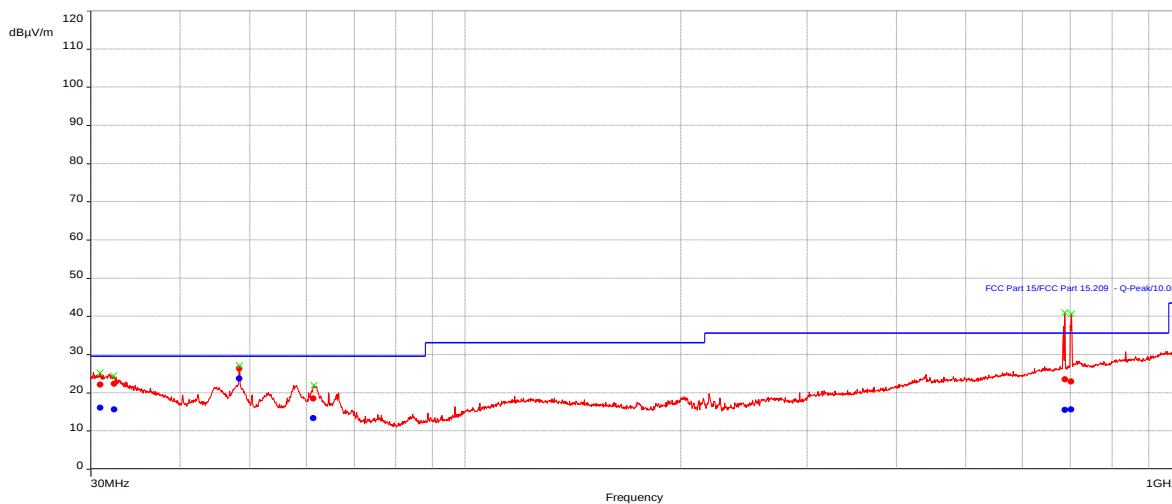


09:11:23 PM 11/22/2024

BLE (Plastic Enclosure, Without Keypad), High Channel, 30-1000 MHz, Test Distance at 10m, (V/H Polarities)

Test Information:

Date and Time	10/25/2024 11:55:28 AM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	24 deg C
Humidity	34 %
Atmospheric Pressure	1011 mbars
Comments	Scan 6_BLE (Plastic - No Keypad) Tx High, POE Powered, RE 30-1000 MHz, 10m 64

Graph:**Results:**

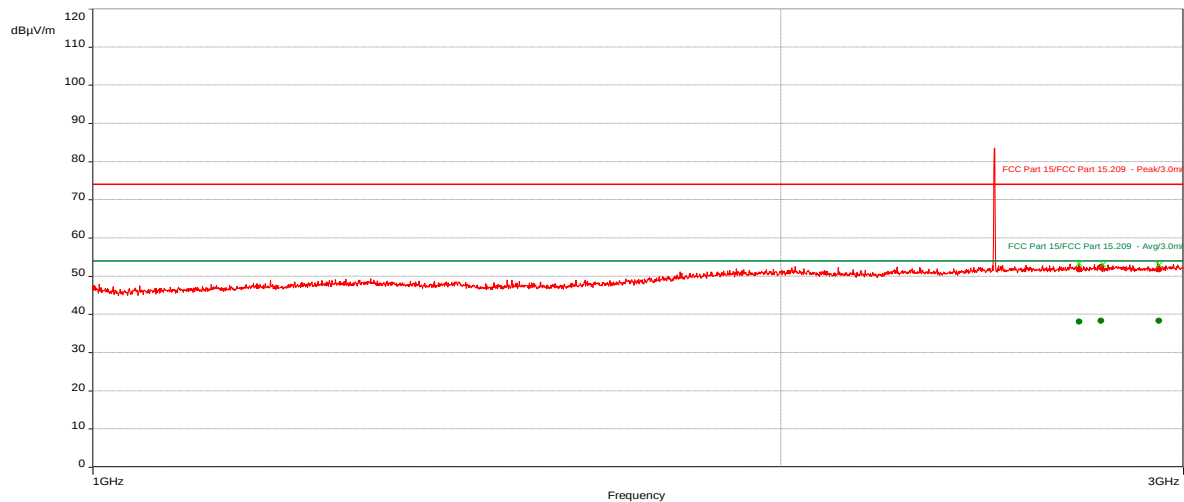
QuasiPeak (PASS) (6)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
30.9209	16.05	29.54	-13.49	320.80	2.15	Vertical	120k	0.10	-13.26
32.3832	15.67	29.54	-13.87	1.30	2.99	Vertical	120k	0.10	-14.20
48.3854	23.79	29.54	-5.75	309.80	2.67	Vertical	120k	0.10	-24.83
61.3623	13.32	29.54	-16.22	256.00	4.00	Vertical	120k	0.10	-25.58
687.5768	15.57	35.56	-19.99	44.70	4.00	Vertical	120k	0.10	-10.25
702.0689	15.68	35.56	-19.88	109.60	2.13	Vertical	120k	0.10	-9.94

BLE (Plastic Enclosure, Without Keypad), High Channel, 1-3 GHz, Test Distance at 3m, (V/H Polarities)

Test Information:

Date and Time	11/22/2024 8:33:31 AM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	35 %
Atmospheric Pressure	986 mbar
Comments	Scan 65_BLE Tx High (Plastic Without Keypad), RE 1 to 3 GHz (Used PRE12 + 10 dB Attenuator)

Graph:**Results:****Peak (PASS) (3)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2701.822	51.82	74.00	-22.18	152.50	1.98	Horizontal	1M	1.00	6.91
2761.698	52.31	74.00	-21.69	360.00	1.98	Vertical	1M	1.00	7.10
2927.349	51.78	74.00	-22.22	113.30	3.05	Vertical	1M	1.00	7.21

AVG (PASS) (3)

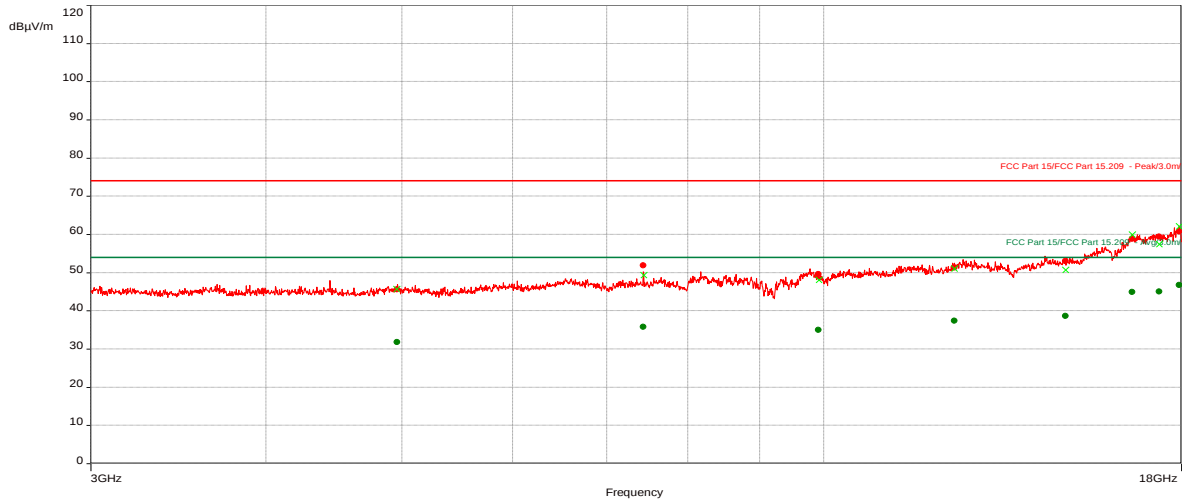
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2701.822	38.16	54.00	-15.84	152.50	1.98	Horizontal	1M	1.00	6.91
2761.698	38.28	54.00	-15.72	360.00	1.98	Vertical	1M	1.00	7.10
2927.349	38.36	54.00	-15.64	113.30	3.05	Vertical	1M	1.00	7.21

Notes: The 2.4 GHz notch filter was not available. A 10 dB attenuator was used at the input of the pre-amp to reduce the fundamental signal. The highest peak on the plot is the fundamental signal.

BLE (Plastic Enclosure, Without Keypad), High Channel, 3-18 GHz, Test Distance at 3m, (V/H Polarities)

Test Information:

Date and Time	11/12/2024 10:47:14 AM
Client and Project Number	Sargent Assa Abloy
Engineer	kouma Sinn
Temperature	23 deg C
Humidity	34 %
Atmospheric Pressure	999 mbars
Comments	Scan 39 BLE Tx High (Plastic- No Keypad), POE Powered, RE 3-18 GHz 3m

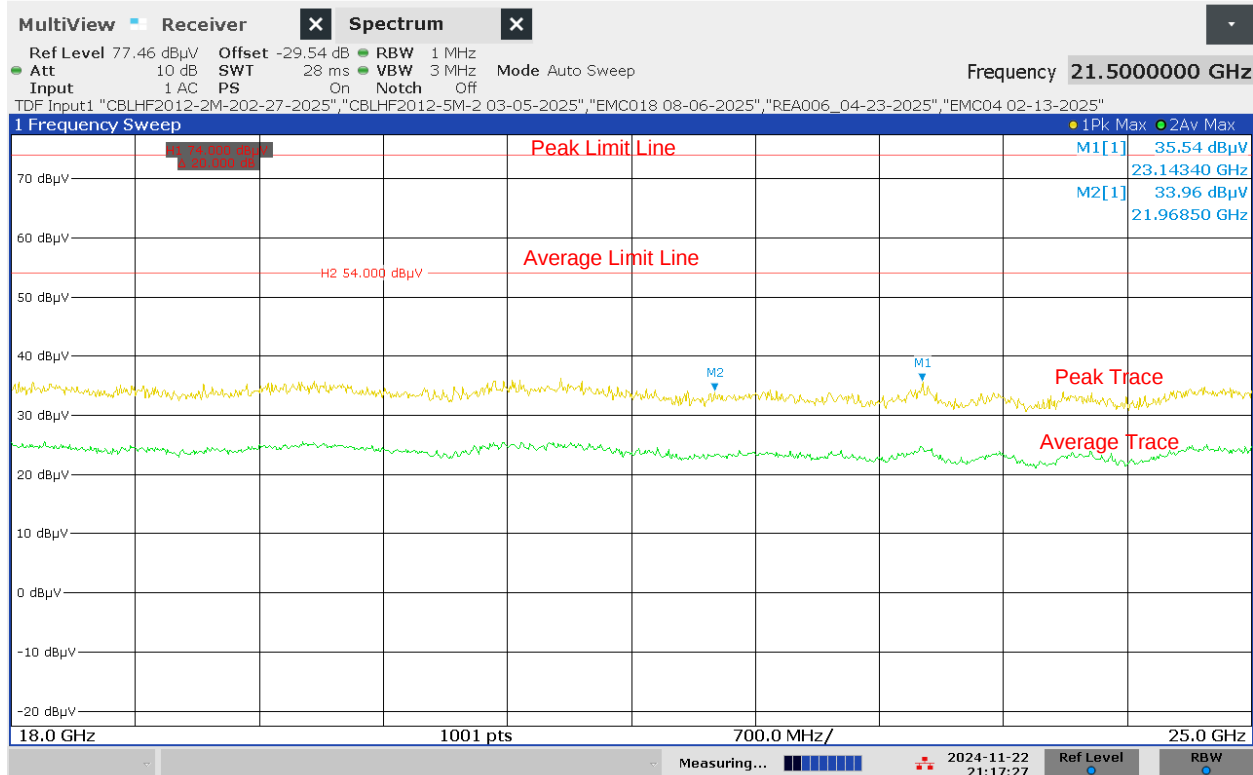
Graph:**Results:****Peak (PASS) (8)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
4960.935	45.66	74.00	-28.34	360.00	1.00	Horizontal	1M	1.00	-9.42
7438.491	51.96	74.00	-22.04	360.00	1.00	Vertical	1M	1.00	-5.19
9916.746	49.68	74.00	-24.32	0.00	4.00	Vertical	1M	1.00	-2.19
12400.886	51.32	74.00	-22.68	0.00	1.00	Vertical	1M	1.00	2.35
14881.559	53.03	74.00	-20.97	360.00	1.00	Horizontal	1M	1.00	3.99
16604.347	58.91	74.00	-15.09	360.00	4.00	Horizontal	1M	1.00	7.56
17357.78	59.43	74.00	-14.57	265.70	4.00	Horizontal	1M	1.00	8.17
17941.938	60.77	74.00	-13.23	360.00	1.00	Horizontal	1M	1.00	8.76

AVG (PASS) (8)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
4960.935	31.79	54.00	-22.21	360.00	1.00	Horizontal	1M	1.00	-9.42
7438.491	35.88	54.00	-18.12	360.00	1.00	Vertical	1M	1.00	-5.19
9916.746	35.07	54.00	-18.93	0.00	4.00	Vertical	1M	1.00	-2.19
12400.886	37.47	54.00	-16.53	0.00	1.00	Vertical	1M	1.00	2.35
14881.559	38.67	54.00	-15.33	360.00	1.00	Horizontal	1M	1.00	3.99
16604.347	44.97	54.00	-9.03	360.00	4.00	Horizontal	1M	1.00	7.56
17357.78	45.04	54.00	-8.96	265.70	4.00	Horizontal	1M	1.00	8.17
17941.938	46.73	54.00	-7.27	360.00	1.00	Horizontal	1M	1.00	8.76

BLE (Plastic Enclosure, Without Keypad), High Channel, 18-25 GHz, Test Distance at 10cm, (V/H Polarities)



09:17:28 PM 11/22/2024

Product Standard: CFR47 FCC Part 15.247, RSS-247				Limit applied: See Report Section 10.2 Pretest Verification w/BB source: Yes			
Test Date	Test Personnel/ Initials	Supervising Engineer/ Initials	Input Voltage	Mode	Atmospheric Data		
					Temp C°	Relative Humidity %	Atmospheric Pressure mbar
10/01/2024	Kouma Sinn <i>KPS</i>	N/A	Battery Powered	Continuous Transmitting	23	45	1011
10/09/2024	Kouma Sinn <i>KPS</i>	N/A	Battery Powered	Continuous Transmitting	22	42	1003
10/10/2024	Kouma Sinn <i>KPS</i>	N/A	Battery Powered	Continuous Transmitting	22	39	1005
10/14/2024	Kouma Sinn <i>KPS</i>	N/A	Battery Powered	Continuous Transmitting	24	35	995
10/15/2024	Kouma Sinn <i>KPS</i>	N/A	Battery Powered	Continuous Transmitting	24	34	999
10/23/2024	Kouma Sinn <i>KPS</i>	N/A	Battery Powered	Continuous Transmitting	27	34	1003
10/24/2024	Kouma Sinn <i>KPS</i>	N/A	Battery Powered	Continuous Transmitting	26	38	1002
10/25/2024	Kouma Sinn <i>KPS</i>	N/A	Battery Powered	Continuous Transmitting	24	34	1011
11/01/2024	Kouma Sinn <i>KPS</i>	N/A	Battery Powered	Continuous Transmitting	21	41	1000
11/08/2024	Kouma Sinn <i>KPS</i>	N/A	Battery Powered	Continuous Transmitting	23	35	1003
11/12/2024	Kouma Sinn <i>KPS</i>	N/A	Battery Powered	Continuous Transmitting	23	34	999
11/18/2024	Kouma Sinn <i>KPS</i>	N/A	Battery Powered	Continuous Transmitting	22	22	1000
11/20/2024	Kouma Sinn <i>KPS</i>	N/A	Battery Powered	Continuous Transmitting	22	26	1000
11/22/2024	Kouma Sinn <i>KPS</i>	N/A	Battery Powered	Continuous Transmitting	23	35	986

Deviations, Additions, or Exclusions: None

11 Digital Device Radiated Spurious Emissions

11.1 Method

Tests are performed in accordance with FCC Part 15 Subpart B, ISED ICES-003, and ANSI C 63.4.

TEST SITE: 10m ALSE

The 10m ALSE is 13m (Length) x 21m (Depth) x 10m (Height) with the effective size in terms of space from the tips of the absorber is 12m (Length) x 20m (Depth) x 8.5m (Height). This chamber achieves broadband performance using a unique arrangement of hybrid and ferrite tile absorber. This chamber has a built in 3m diameter turntable (Embedded type). The metal structure of the table makes electrical connection around the entire circumference of the turntable to the ground plane with a metal brush type connection. The turntable is located on one end of the chamber and the antennas are mounted 3 and 10 meters away at the other end of the chamber on the adjustable an Antenna Mast. The antenna mast is a non-conductive bore sighted type with remote control of antenna height and polarization. The Antenna Mast and the turntable can be remotely controlled through the controller located in the adjacent Control room. A Styrofoam table 80 cm high is used for table-top equipment.

Measurement Uncertainty

Measurement	Frequency Range	Expanded Uncertainty (k=2)	Ucisp
Radiated Emissions, 10m	30-1000 MHz	4.6dB	6.3 dB
Radiated Emissions, 3m	30-1000 MHz	5.3 dB	6.3 dB
Radiated Emissions, 3m	1-6 GHz	4.5 dB	5.2 dB
Radiated Emissions, 3m	6-15 GHz	5.2 dB	5.5 dB
Radiated Emissions, 3m	15-18 GHz	5.0 dB	5.5 dB
Radiated Emissions, 3m	18-40 GHz	5.0 dB	5.5 dB

As shown in the table above our radiated emissions U_{lab} is less than the corresponding U_{CISPR} reference value in CISPR 16-4-2 Table 1, hence the compliance of the product is only based on the measured value, and no measurement uncertainty correction is required, based on CISPR 22 and CISPR 11 (for 2006 and later revisions) Clause 11.

Sample Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CF - AG$$

Where

FS = Field Strength in dB μ V/m

RA = Receiver Amplitude (including preamplifier) in dB μ V

CF = Cable Attenuation Factor in dB

AF = Antenna Factor in dB

AG = Amplifier Gain in dB

In the following table(s), the reading shown on the data table reflects the preamplifier gain. An example for the calculations in the following table is as follows.

Assume a receiver reading of 52.0 dB μ V is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted, giving a field strength of 32 dB μ V/m. This

value in dB μ V/m was converted to its corresponding level in μ V/m.

RA = 52.0 dB μ V

AF = 7.4 dB/m

CF = 1.6 dB

AG = 29.0 dB

FS = 32 dB μ V/m

To convert from dB μ V to μ V or mV the following was used:

$UF = 10^{(NF / 20)}$ where UF = Net Reading in μ V
NF = Net Reading in dB μ V

Example:

FS = RA + AF + CF – AG = 52.0 + 7.4 + 1.6 – 29.0 = 32.0

UF = $10^{(32 \text{ dB}\mu\text{V} / 20)} = 39.8 \mu\text{V/m}$

Alternately, when BAT-EMC Emission Software is used, the “Level” includes all losses and gains and is compared directly in the “Margin” column to the “Limit”. The “Correction” includes Antenna Factor, Preamp, and Cable Loss. These are already accounted for in the “Level” column.

11.2 Limit

§15.109 Radiated emission limits.

The field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values.

Frequency of emission (MHz)	Field strength (microvolts/meter)	Field strength (dB μ V/m)
30-88	100	40.00
88-216	150	43.52
216-960	200	46.02
Above 960	500	54.00

Notes: The limits for ISSED ICES-003 are the same as the FCC limits above.

11.3 Test Equipment Used:

Test equipment used from 30-1000 MHz

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV007'	Weather Station Vantage Vue	Davis	6250	MS191212003	03/27/2024	03/27/2025
ROS014'	Receiver 1Hz-44GHz	Rhode & Schwarz	ESW 44	103232	06/10/2024	06/10/2025
145-420'	Receiver to floor cable	Utiflex	UFB311A-2-0591-70070	145-420	02/27/2024	02/27/2025
HS003'	10m under floor cable	Huber-Schuner	10m-1	HS003	02/27/2024	02/27/2025
IW006'	DC-18GHz cable 8.4m long	Insulated Wire	2800-NPS	IW006	05/23/2024	05/23/2025
HS001'	DC-18GHz cable 1.5m long	Huber & Suhner	SucoFlex 106A	HS001	01/30/2024	01/30/2025
145145'	Broadband Hybrid Antenna 30 MHz - 3 GHz	Sunol Sciences Corp.	JB3	A122313	07/11/2024	07/11/2025
PRE10'	30-1000MHz pre-amp	ITS	PRE10	PRE10	02/27/2024	02/27/2025

Test equipment used from 1-13 GHz

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV007'	Weather Station Vantage Vue	Davis	6250	MS191212003	03/27/2024	03/27/2025
ROS014'	Receiver 1Hz-44GHz	Rhode & Schwarz	ESW 44	103232	06/10/2024	06/10/2025
145-420'	Receiver to floor cable	Utiflex	UFB311A-2-0591-70070	145-420	02/27/2024	02/27/2025
145-414'	Cable 145-414	Huber + Suhner	3m Track A cable	145-414	07/15/2024	07/15/2025
145-422'	10Amp Pre-amp to under floor	Utiflex	UFB311A-0-2756-70070	145-422	03/26/2024	03/26/2025
IW003'	8.4 meter cable	Insulated Wire	2800-NPS	003	01/17/2024	01/17/2025
ETS002	1-18GHz DRG Horn Antenna	ETS Lindgren	3117	00143260	09/04/2024	09/04/2025
BONN001	1-18GHz low noise pre-amp	Bonn	BLMA 0118-M	1811749	07/24/2024	07/24/2025

Software Utilized:

Name	Manufacturer	Version
BAT-EMC	Nexio	2023.0.9.0

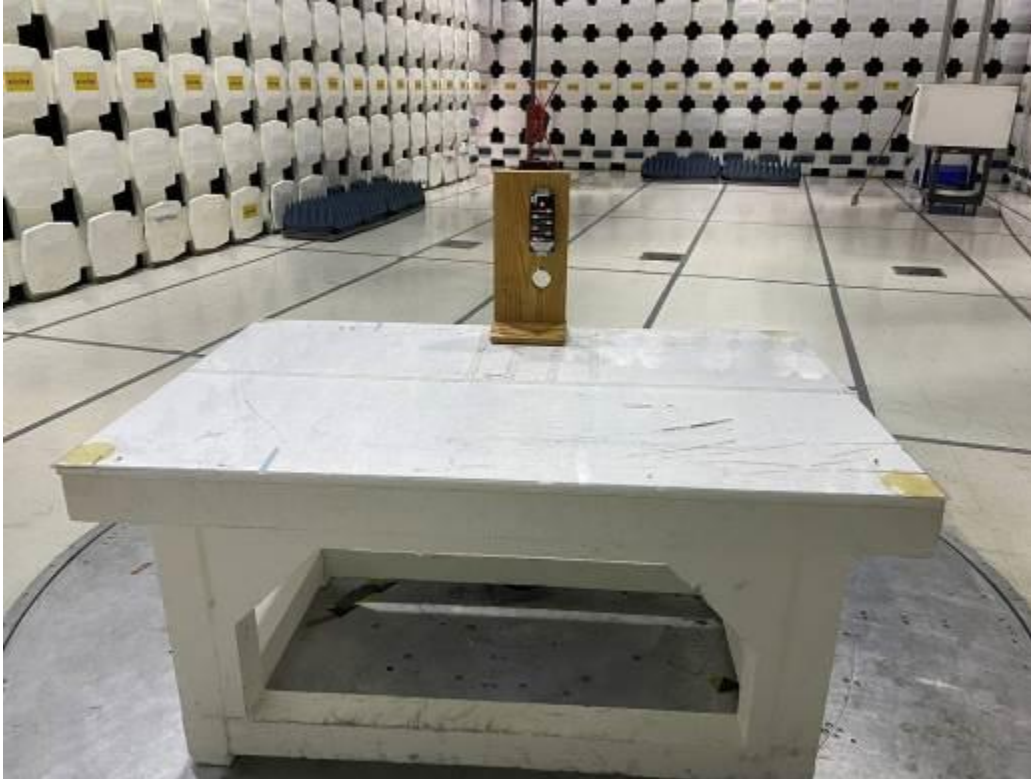
11.4 Results:

The sample tested was found to Comply.

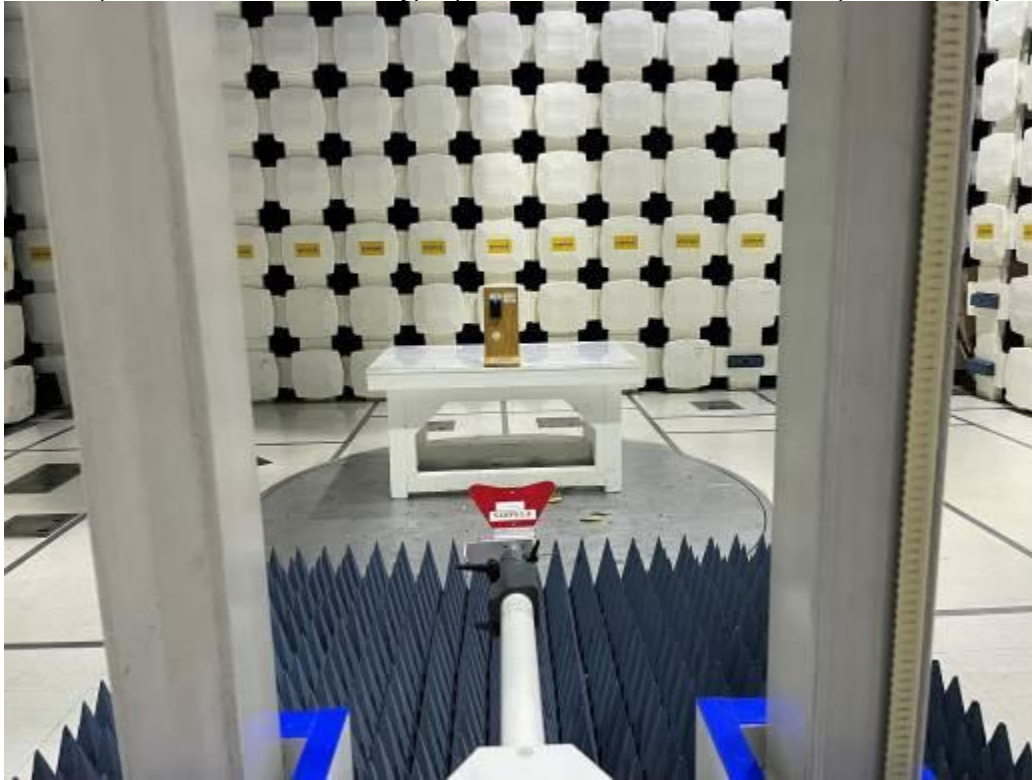
11.5 Setup Photographs:

===Battery Powered===

BLE (Plastic Enclosure, With Keypad), Radio in Idle, 30-1000 MHz, at 10m, (V/H Polarities)



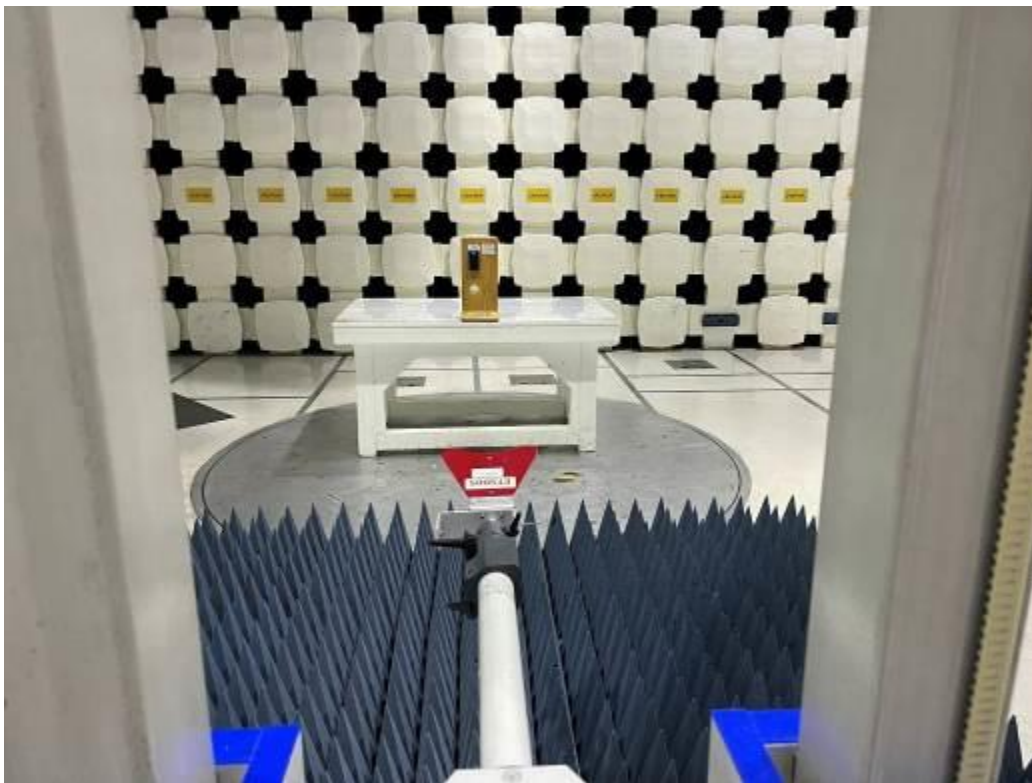
BLE (Plastic Enclosure, With Keypad), Radio in Idle, 1-13 GHz, at 3m, (V/H Polarities)



BLE (Metal Enclosure, With Keypad), Radio in Idle, 30-1000 MHz, at 10m, (V/H Polarities)



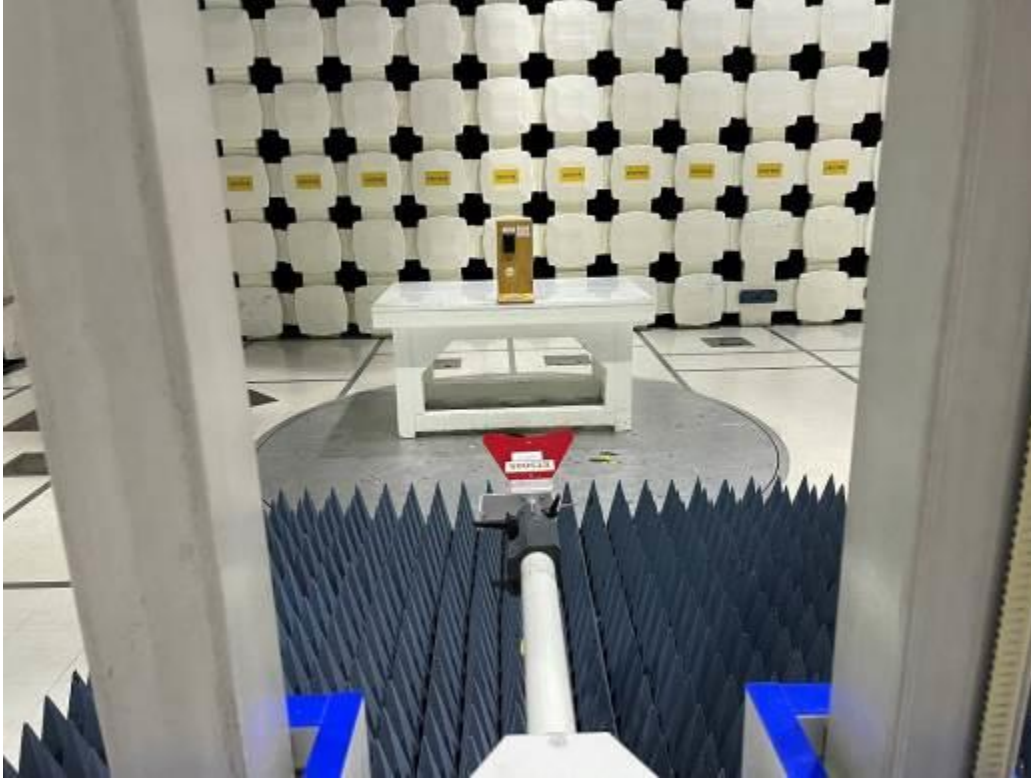
BLE (Metal Enclosure, With Keypad), Radio in Idle, 1-13 GHz, at 3m, (V/H Polarities)



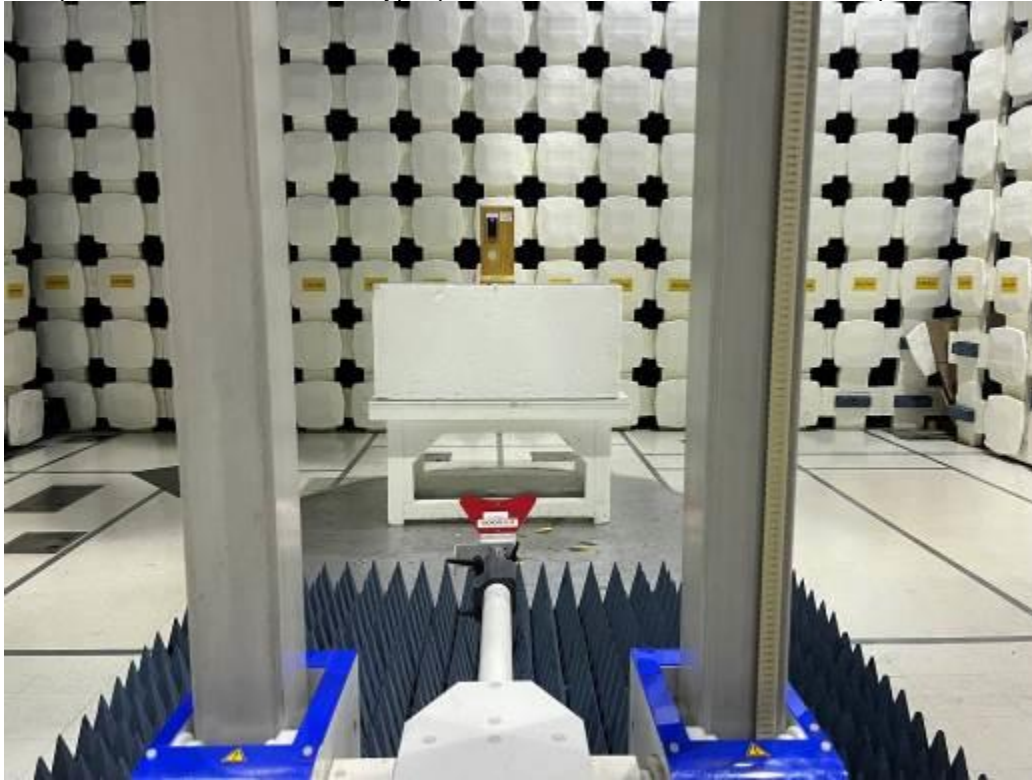
BLE (Plastic Enclosure, Without Keypad), Radio in Idle, 30-1000 MHz, at 10m, (V/H Polarities)



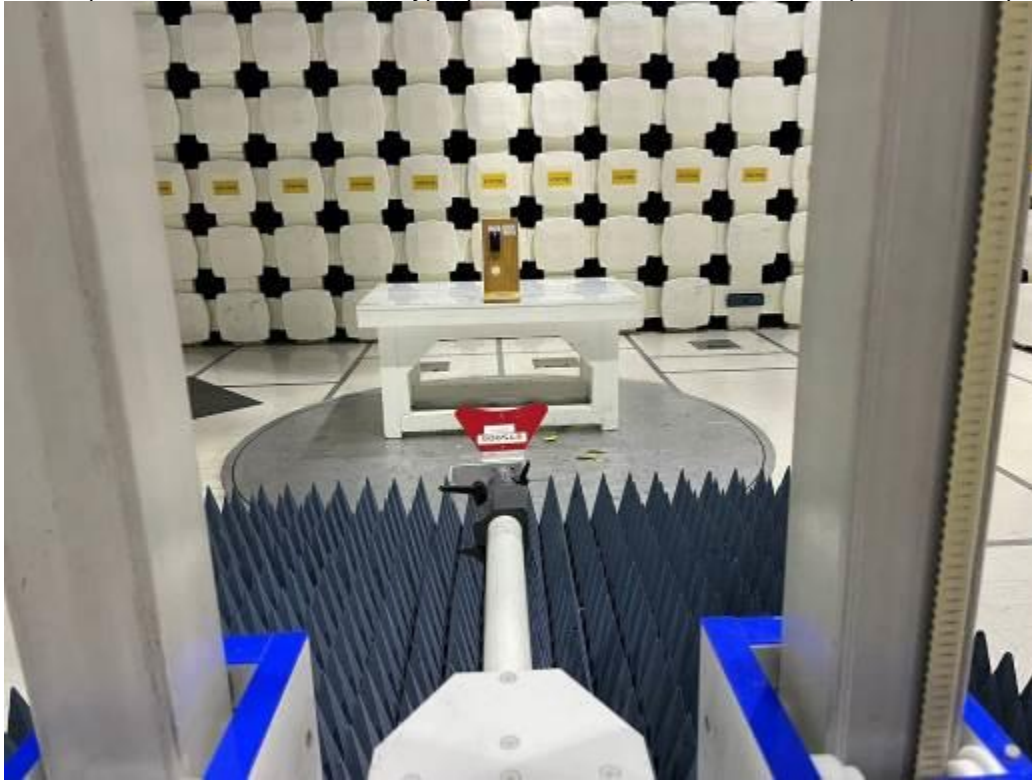
BLE (Plastic Enclosure, Without Keypad), Radio in Idle, 1-13 GHz, at 3m, (V/H Polarities)



BLE (Metal Enclosure, Without Keypad), Radio in Idle, 30-1000 MHz, at 10m, (V/H Polarities)

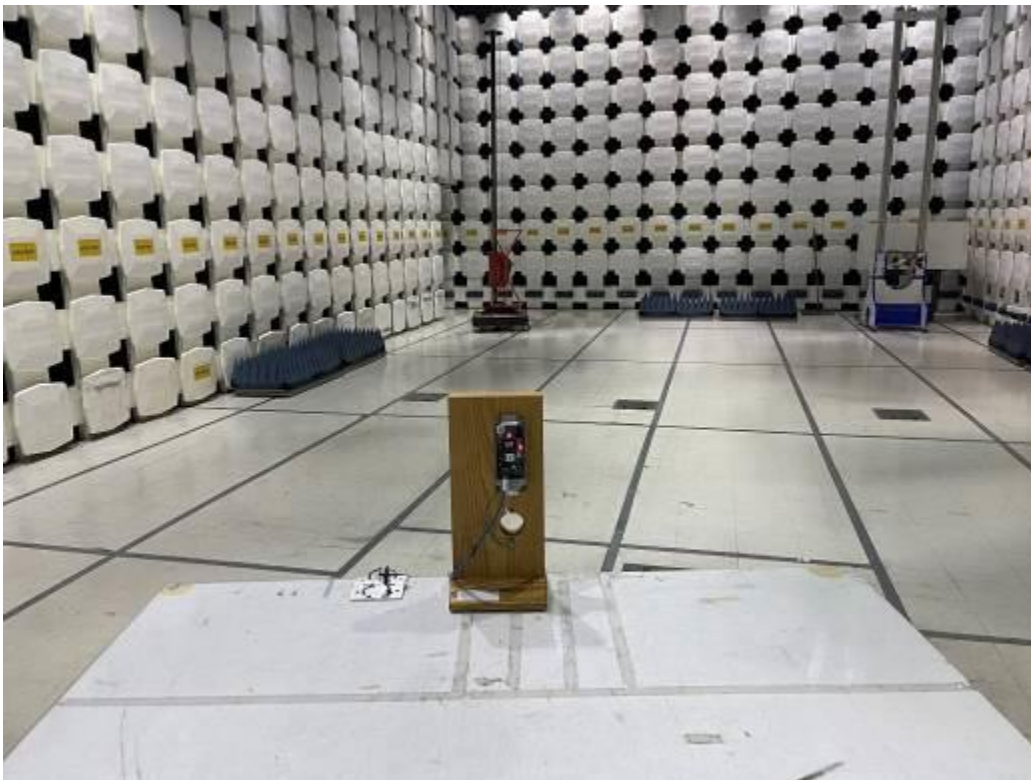


BLE (Metal Enclosure, Without Keypad), Radio in Idle, 1-13 GHz, at 3m, (V/H Polarities)



===Battery Powered===

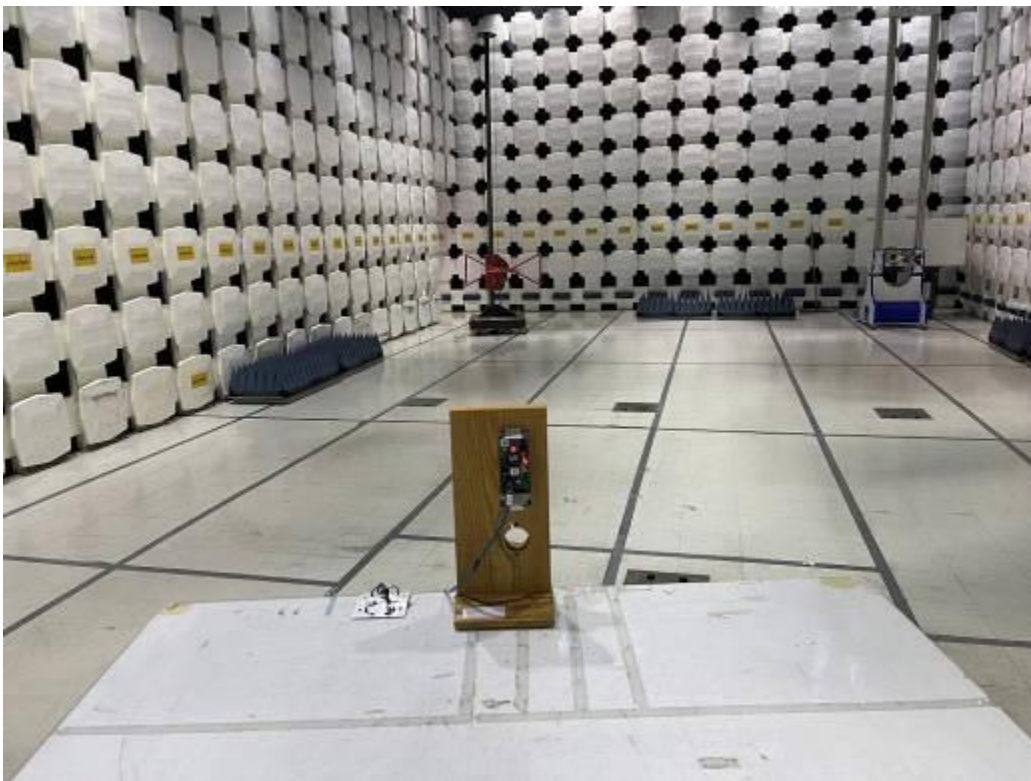
BLE (Plastic Enclosure, With Keypad), Radio in Idle, 30-1000 MHz, at 10m, (V/H Polarities)



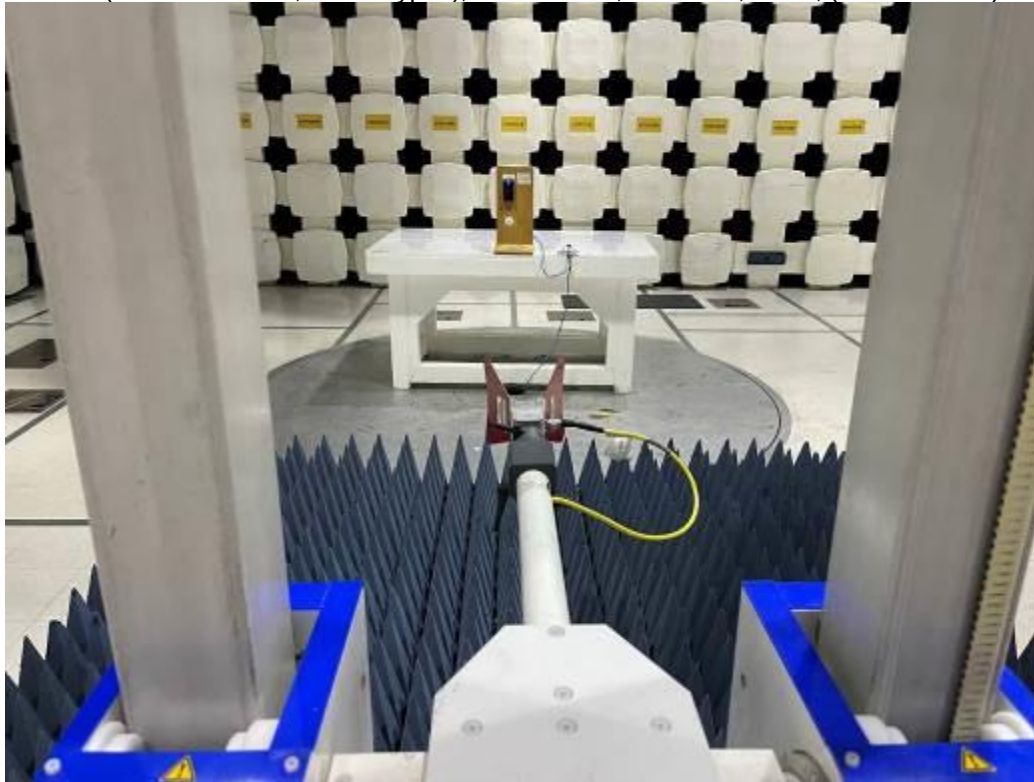
BLE (Plastic Enclosure, With Keypad), Radio in Idle, 1-13 GHz, at 3m, (V/H Polarities)



BLE (Metal Enclosure, With Keypad), Radio in Idle, 30-1000 MHz, at 10m, (V/H Polarities)



BLE (Metal Enclosure, With Keypad), Radio in Idle, 1-13 GHz, at 3m, (V/H Polarities)

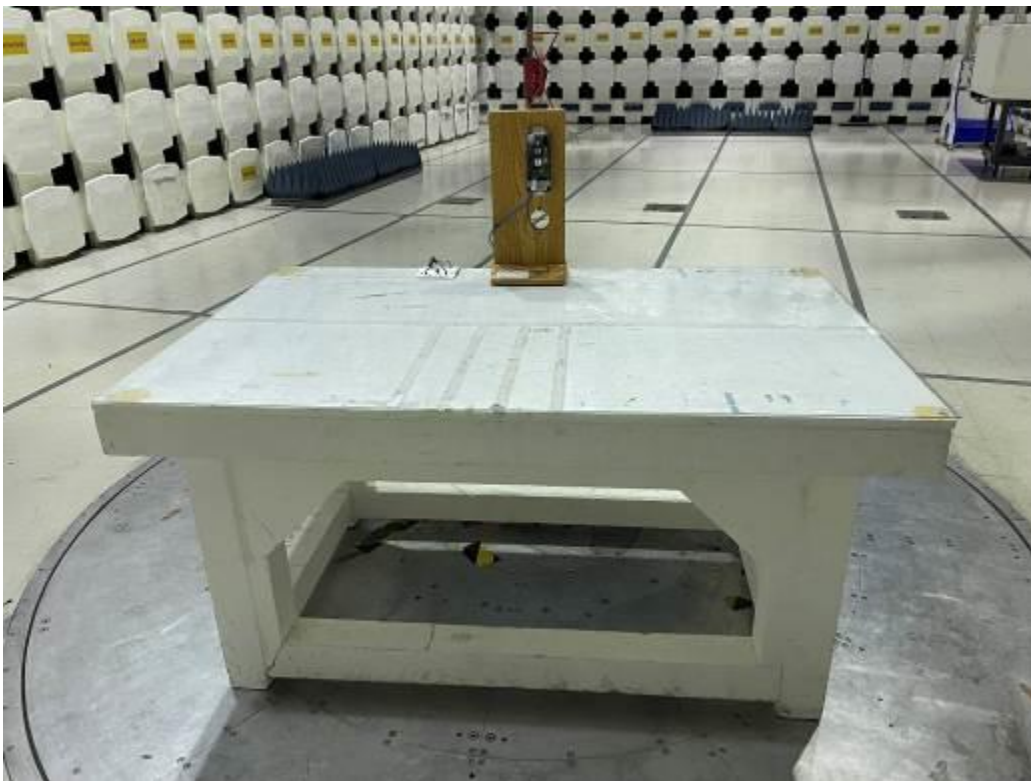


BLE (Plastic Enclosure, Without Keypad), Radio in Idle, 30-1000 MHz, at 10m, (V/H Polarities)

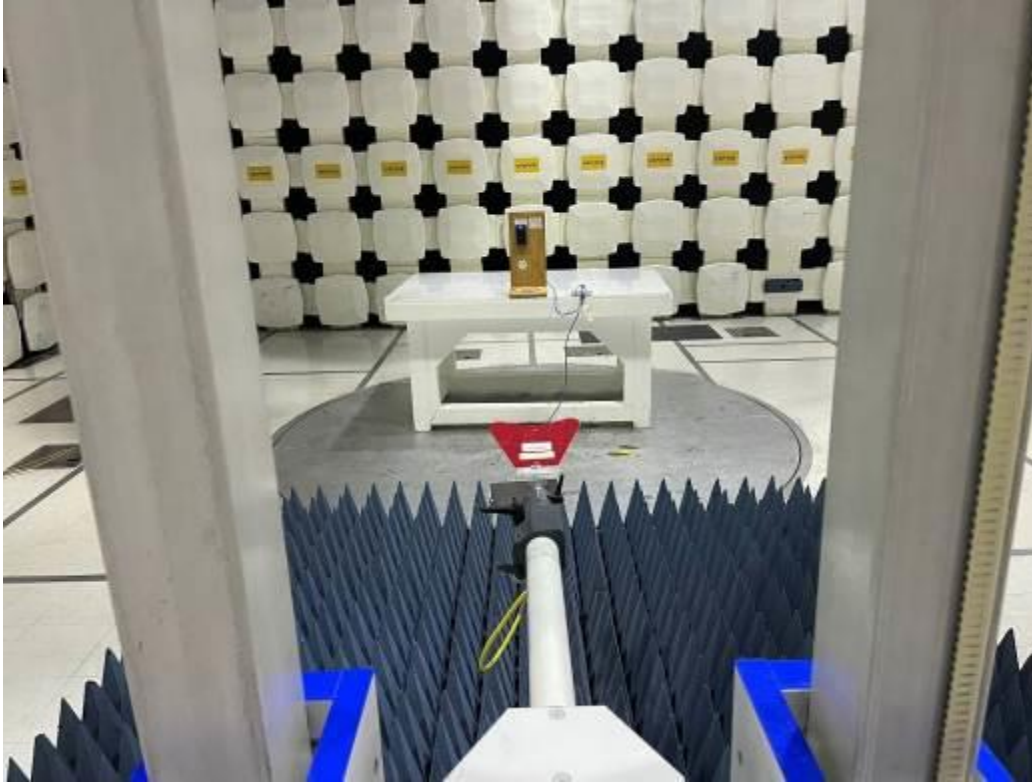


BLE (Plastic Enclosure, Without Keypad), Radio in Idle, 1-13 GHz, at 3m, (V/H Polarities)

BLE (Metal Enclosure, Without Keypad), Radio in Idle, 30-1000 MHz, at 10m, (V/H Polarities)



BLE (Metal Enclosure, Without Keypad), Radio in Idle, 1-13 GHz, at 3m, (V/H Polarities)



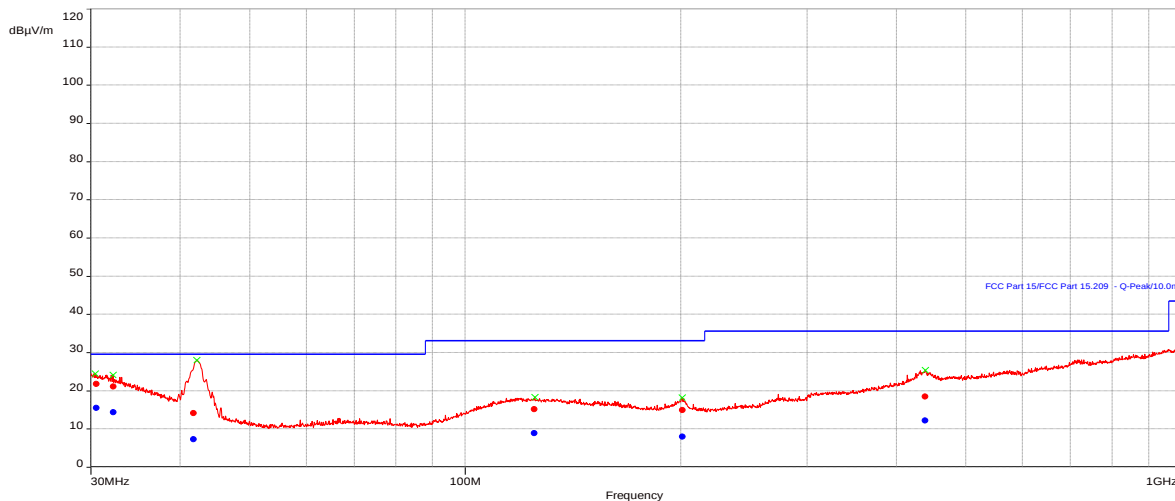
11.6 Plots/Data:

===Battery Powered===

BLE (Plastic Enclosure, With Keypad), Radio in Idle, 30-1000 MHz, at 10m, (V/H Polarities)

Test Information:

Date and Time	10/1/2024 2:32:43 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	45 %
Atmospheric Pressure	1011 mbars
Comments	Scan 40_BLE in idle mode (Plastic Enclosure - With Keypad), RE 30-1000MHz

Graph:**Results:****Peak (PASS) (6)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
30.5726	21.74	29.54	-7.80	28.40	2.16	Horizontal	120k	0.10	-13.12
32.2365	21.09	29.54	-8.45	55.20	3.49	Vertical	120k	0.10	-14.07
41.7685	14.17	29.54	-15.37	163.80	3.87	Horizontal	120k	0.10	-20.94
124.8889	15.13	33.06	-17.93	147.20	3.80	Horizontal	120k	0.10	-18.66
201.0473	14.96	33.06	-18.10	12.00	4.00	Vertical	120k	0.10	-19.70
438.7852	18.43	35.56	-17.13	239.60	4.00	Vertical	120k	0.10	-14.64

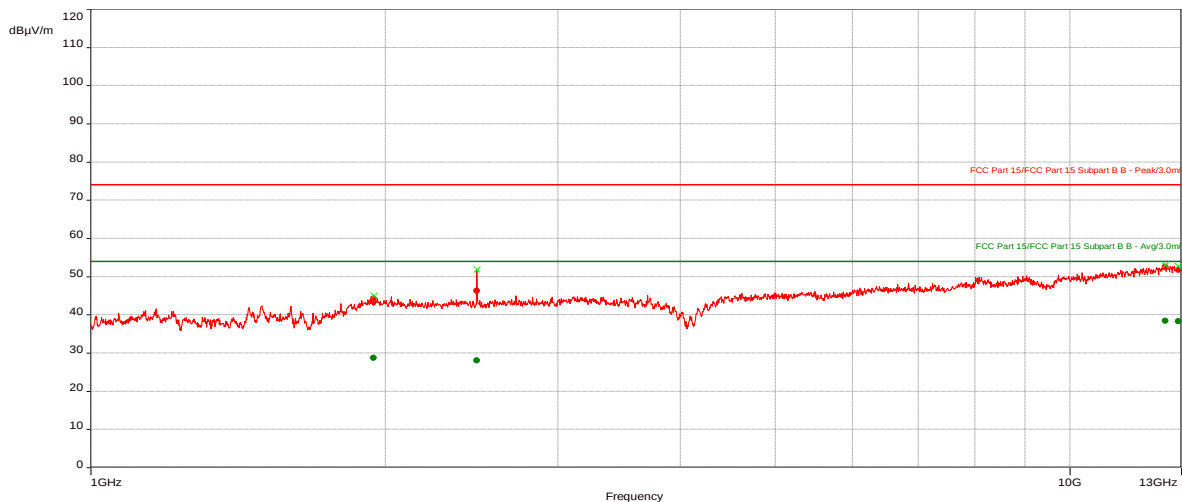
QuasiPeak (PASS) (6)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
30.5726	15.49	29.54	-14.05	28.40	2.16	Horizontal	120k	0.10	-13.12
32.2365	14.40	29.54	-15.14	55.20	3.49	Vertical	120k	0.10	-14.07
41.7685	7.34	29.54	-22.20	163.80	3.87	Horizontal	120k	0.10	-20.94
124.8889	8.90	33.06	-24.16	147.20	3.80	Horizontal	120k	0.10	-18.66
201.0473	8.04	33.06	-25.02	12.00	4.00	Vertical	120k	0.10	-19.70
438.7852	12.26	35.56	-23.30	239.60	4.00	Vertical	120k	0.10	-14.64

BLE (Plastic Enclosure, With Keypad), Radio in Idle, 1-13 GHz, at 3m, (V/H Polarities)

Test Information:

Date and Time	10/14/2024 1:57:24 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	24 deg C
Humidity	35 %
Atmospheric Pressure	995 mbars
Comments	Scan 80 BLE Rx-Idle High (Plastic Enclosure - With Keypad), RE 1-13 GHz

Graph:**Results:**

Peak (PASS) (4)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
1945.505	44.28	74.00	-29.72	212.30	3.94	Horizontal	1M	0.00	-15.88
2480.361	46.35	74.00	-27.65	212.30	3.94	Vertical	1M	0.00	-14.53
12514.141	52.55	74.00	-21.45	212.50	1.00	Horizontal	1M	0.00	2.29
12902.579	51.84	74.00	-22.16	0.00	1.00	Vertical	1M	0.00	2.28

AVG (PASS) (4)

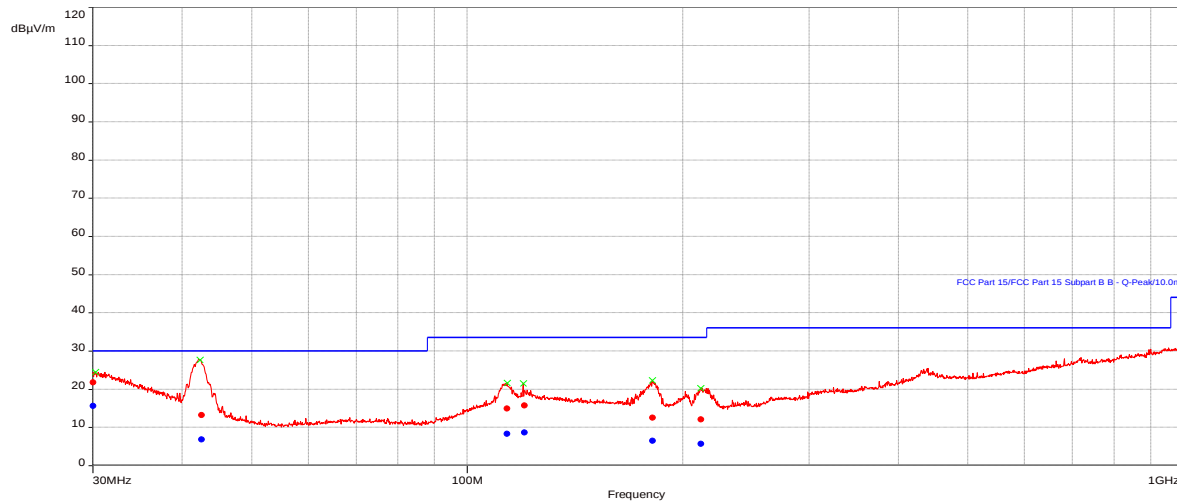
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
1945.505	28.71	54.00	-25.29	212.30	3.94	Horizontal	1M	0.00	-15.88
2480.361	28.11	54.00	-25.89	212.30	3.94	Vertical	1M	0.00	-14.53
12514.141	38.45	54.00	-15.55	212.50	1.00	Horizontal	1M	0.00	2.29
12902.579	38.33	54.00	-15.67	0.00	1.00	Vertical	1M	0.00	2.28

BLE & RFID (Metal Enclosure, With Keypad), Radio in Idle, 30-1000 MHz, at 10m, (V/H Polarities)

Test Information:

Date and Time	10/15/2024 9:37:31 AM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	24 deg C
Humidity	34 %
Atmospheric Pressure	999 mbars
Comments	Scan 84 BLE Rx-Idle High (Metal Enclosure - With Keypad), RE 30-1000 MHz

Graph:



Results:

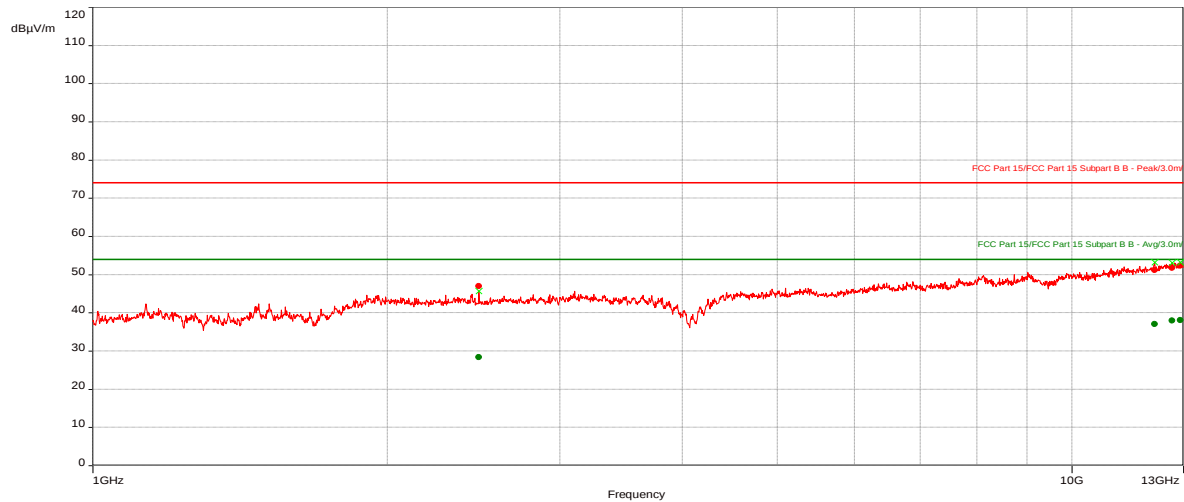
QuasiPeak (PASS) (6)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	RBW	Meas.Time(s)	Correction (dB)
30.0681	15.68	30.00	-14.32	93.70	2.06	Vertical	120000.00	120k	0.10	-12.92
42.577	6.80	30.00	-23.20	60.60	3.49	Horizontal	120000.00	120k	0.10	-21.54
113.6684	8.34	33.50	-25.16	185.50	4.00	Horizontal	120000.00	120k	0.10	-19.41
120.1683	8.73	33.50	-24.77	294.50	4.00	Horizontal	120000.00	120k	0.10	-18.80
181.5204	6.46	33.50	-27.04	218.10	2.97	Horizontal	120000.00	120k	0.10	-20.98
212.0469	5.76	33.50	-27.74	206.70	2.98	Horizontal	120000.00	120k	0.10	-21.64

BLE (Metal Enclosure, With Keypad), Radio in Idle, 1-13 GHz, at 3m, (V/H Polarities)

Test Information:

Date and Time	10/14/2024 2:29:58 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	24 deg C
Humidity	35 %
Atmospheric Pressure	995 mbars
Comments	Scan 81 BLE Rx-Idle High (Metal Enclosure - With Keypad), RE 1-13 GHz

Graph:**Results:****Peak (PASS) (4)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
2479.85	46.98	74.00	-27.02	360.00	3.94	Vertical	1M	1.00	-14.53
12154.302	51.23	74.00	-22.77	0.00	3.94	Horizontal	1M	1.00	1.43
12659.663	51.83	74.00	-22.17	0.00	1.00	Vertical	1M	1.00	2.23
12913.538	52.38	74.00	-21.62	0.00	3.94	Horizontal	1M	1.00	2.28

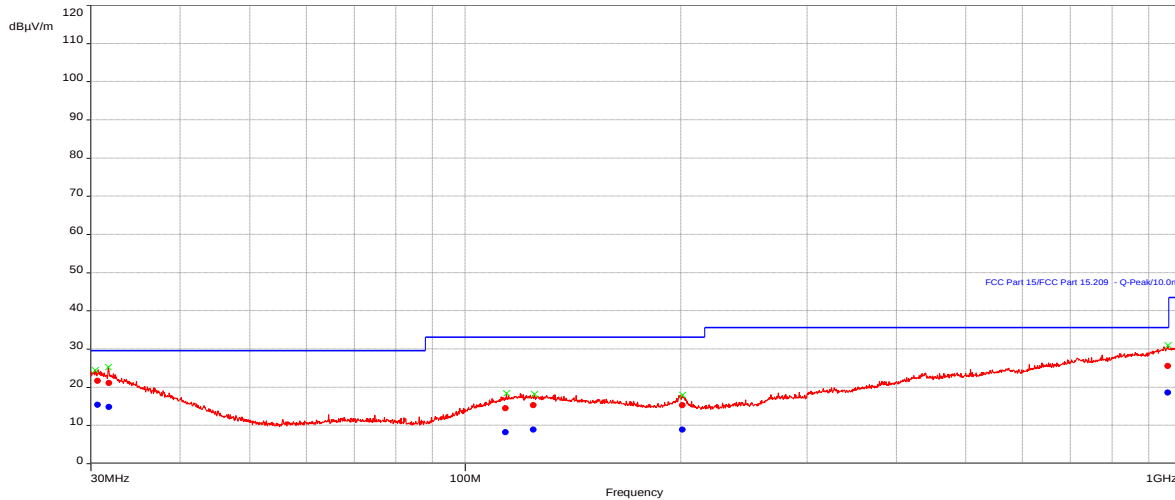
AVG (PASS) (4)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
2479.85	28.41	54.00	-25.59	360.00	3.94	Vertical	1M	1.00	-14.53
12154.302	37.03	54.00	-16.97	0.00	3.94	Horizontal	1M	1.00	1.43
12659.663	37.94	54.00	-16.06	0.00	1.00	Vertical	1M	1.00	2.23
12913.538	38.06	54.00	-15.94	0.00	3.94	Horizontal	1M	1.00	2.28

BLE (Plastic Enclosure, Without Keypad), Radio in Idle, 30-1000 MHz, at 10m, (V/H Polarities)

Test Information:

Date and Time	10/1/2024 12:19:23 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	45 %
Atmospheric Pressure	1011 mbars
Comments	Scan 36 BLE in idle mode (Plastic Enclosure - Without Keypad), RE 30-1000MHz

Graph:**Results:****Peak (PASS) (6)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
30.7013	21.68	29.54	-7.86	104.40	1.39	Vertical	120k	0.10	-13.17
31.8387	21.16	29.54	-8.38	125.90	1.68	Horizontal	120k	0.10	-13.77
113.812	14.46	33.06	-18.60	126.20	1.46	Horizontal	120k	0.10	-19.38
124.4979	15.31	33.06	-17.75	50.40	3.04	Horizontal	120k	0.10	-18.66
201.042	15.32	33.06	-17.74	218.20	2.09	Vertical	120k	0.10	-19.69
957.1917	25.55	35.56	-10.01	293.60	1.70	Vertical	120k	0.10	-5.65

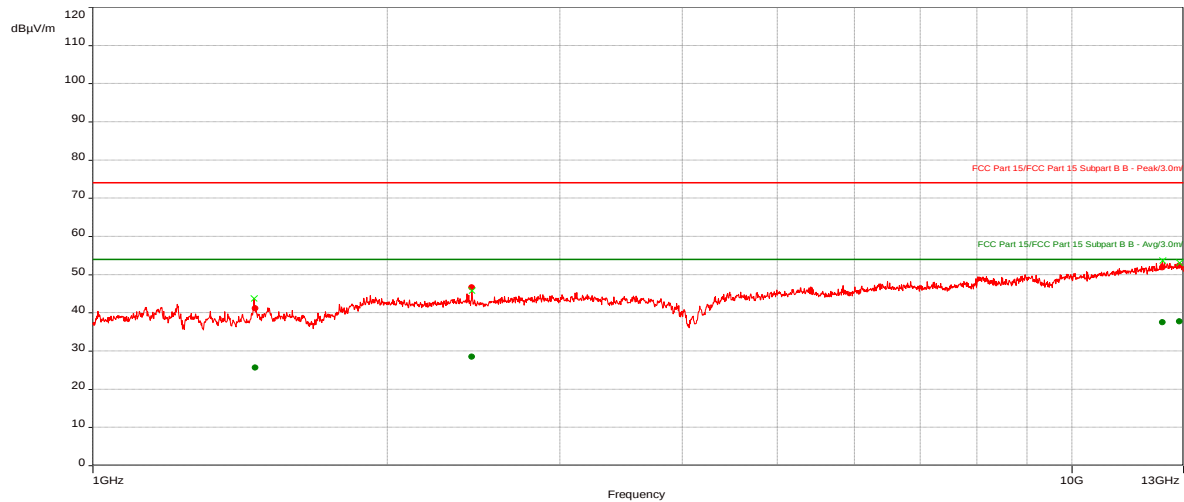
QuasiPeak (PASS) (6)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
30.7013	15.37	29.54	-14.17	104.40	1.39	Vertical	120k	0.10	-13.17
31.8387	14.80	29.54	-14.74	125.90	1.68	Horizontal	120k	0.10	-13.77
113.812	8.26	33.06	-24.80	126.20	1.46	Horizontal	120k	0.10	-19.38
124.4979	8.91	33.06	-24.15	50.40	3.04	Horizontal	120k	0.10	-18.66
201.042	8.88	33.06	-24.18	218.20	2.09	Vertical	120k	0.10	-19.69
957.1917	18.65	35.56	-16.91	293.60	1.70	Vertical	120k	0.10	-5.65

BLE (Plastic Enclosure, Without Keypad), Radio in Idle, 1-13 GHz, at 3m, (V/H Polarities)

Test Information:

Date and Time	10/14/2024 1:26:04 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	24 deg C
Humidity	35 %
Atmospheric Pressure	995 mbars
Comments	Scan 79 BLE Rx-Idle High (Plastic Enclosure - Without Keypad), RE 1-13 GHz

Graph:**Results:****Peak (PASS) (4)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
1464.99	41.19	74.00	-32.81	360.00	1.00	Horizontal	1M	0.00	-20.14
2439.573	46.68	74.00	-27.32	0.00	1.00	Vertical	1M	0.00	-14.55
12377.618	51.96	74.00	-22.04	212.20	1.00	Horizontal	1M	0.00	2.01
12885.081	52.34	74.00	-21.66	0.00	4.00	Vertical	1M	0.00	2.28

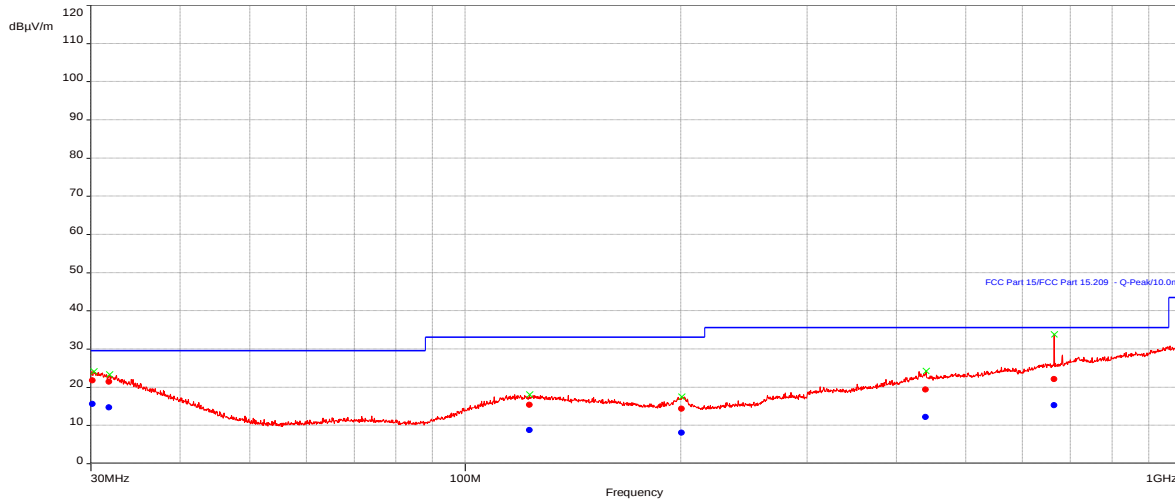
AVG (PASS) (4)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
1464.99	25.67	54.00	-28.33	360.00	1.00	Horizontal	1M	0.00	-20.14
2439.573	28.57	54.00	-25.43	0.00	1.00	Vertical	1M	0.00	-14.55
12377.618	37.53	54.00	-16.47	212.20	1.00	Horizontal	1M	0.00	2.01
12885.081	37.80	54.00	-16.20	0.00	4.00	Vertical	1M	0.00	2.28

BLE (Metal Enclosure, Without Keypad), Radio in Idle, 30-1000 MHz, at 10m, (V/H Polarities)

Test Information:

Date and Time	10/1/2024 10:07:56 AM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	23 deg C
Humidity	45 %
Atmospheric Pressure	1011 mbars
Comments	Scan 32 BLE in idle mode (Metal Enclosure - Without Keypad), RE 30-1000MHz

Graph:**Results:****Peak (PASS) (6)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
30.1504	21.81	29.54	-7.73	326.40	1.61	Horizontal	120k	0.10	-12.95
31.8196	21.43	29.54	-8.11	115.40	3.28	Horizontal	120k	0.10	-13.76
122.9445	15.45	33.06	-17.61	234.90	3.59	Horizontal	120k	0.10	-18.77
200.427	14.43	33.06	-18.63	234.10	3.57	Vertical	120k	0.10	-19.63
439.7089	19.34	35.56	-16.22	120.40	3.64	Horizontal	120k	0.10	-14.63
664.387	22.17	35.56	-13.39	185.20	1.69	Vertical	120k	0.10	-10.49

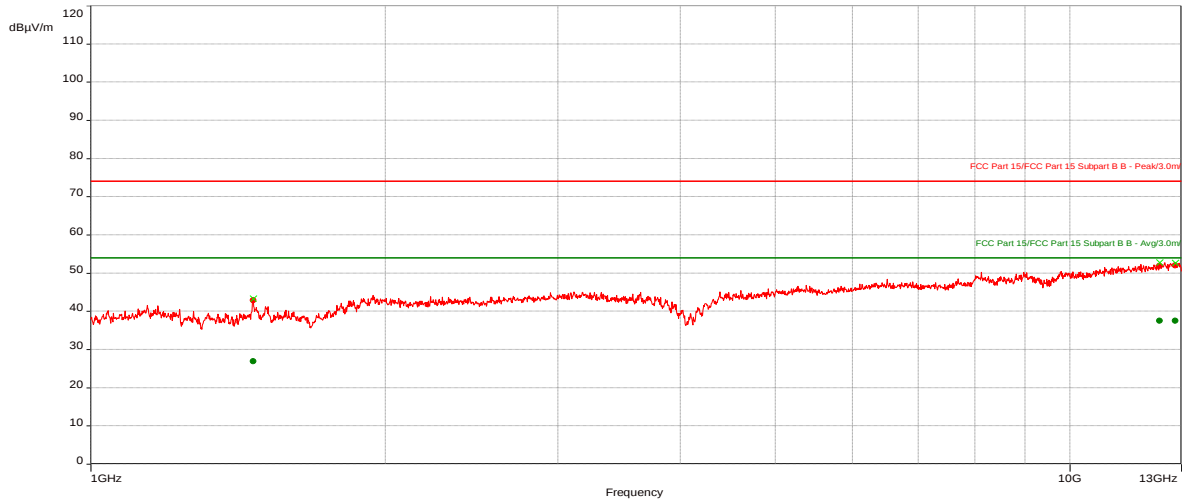
QuasiPeak (PASS) (6)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
30.1504	15.60	29.54	-13.94	326.40	1.61	Horizontal	120k	0.10	-12.95
31.8196	14.74	29.54	-14.80	115.40	3.28	Horizontal	120k	0.10	-13.76
122.9445	8.85	33.06	-24.21	234.90	3.59	Horizontal	120k	0.10	-18.77
200.427	8.10	33.06	-24.96	234.10	3.57	Vertical	120k	0.10	-19.63
439.7089	12.24	35.56	-23.32	120.40	3.64	Horizontal	120k	0.10	-14.63
664.387	15.32	35.56	-20.24	185.20	1.69	Vertical	120k	0.10	-10.49

BLE (Metal Enclosure, Without Keypad), Radio in Idle, 1-13 GHz, at 3m, (V/H Polarities)

Test Information:

Date and Time	10/14/2024 1:00:34 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	24 deg C
Humidity	35 %
Atmospheric Pressure	995 mbars
Comments	Scan 78 BLE Rx-Idle High (Metal Enclosure - Without Keypad), RE 1-13 GHz

Graph:**Results:****Peak (PASS) (3)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
1465.065	42.94	74.00	-32.81	0.00	1.00	Horizontal	1M	1.00	-20.14
12345.274	51.86	74.00	-27.32	360.00	4.00	Horizontal	1M	1.00	1.89
12820.406	52.02	74.00	-22.04	360.00	1.00	Vertical	1M	1.00	2.29

AVG (PASS) (3)

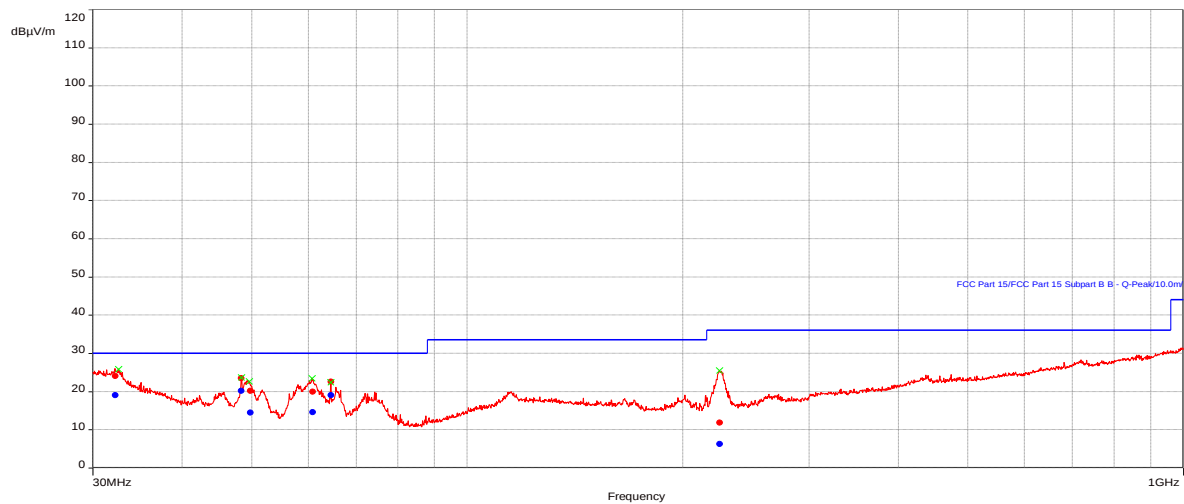
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
1465.065	26.97	54.00	-27.03	0.00	1.00	Horizontal	1M	1.00	-20.14
12345.274	37.59	54.00	-16.41	360.00	4.00	Horizontal	1M	1.00	1.89
12820.406	37.52	54.00	-16.48	360.00	1.00	Vertical	1M	1.00	2.29

===POE Powered===

BLE (Plastic Enclosure, With Keypad), Radio in Idle, 30-1000 MHz, at 10m, (V/H Polarities)

Test Information:

Date and Time	11/1/2024 8:16:14 AM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	21 C
Humidity	41 %
Atmospheric Pressure	1000 mbar
Comments	Scan 18 BLE Rx High-Idle (Plastic- Keypad), POE Powered, RE 30-1000 MHz, 10m

Graph:**Results:**

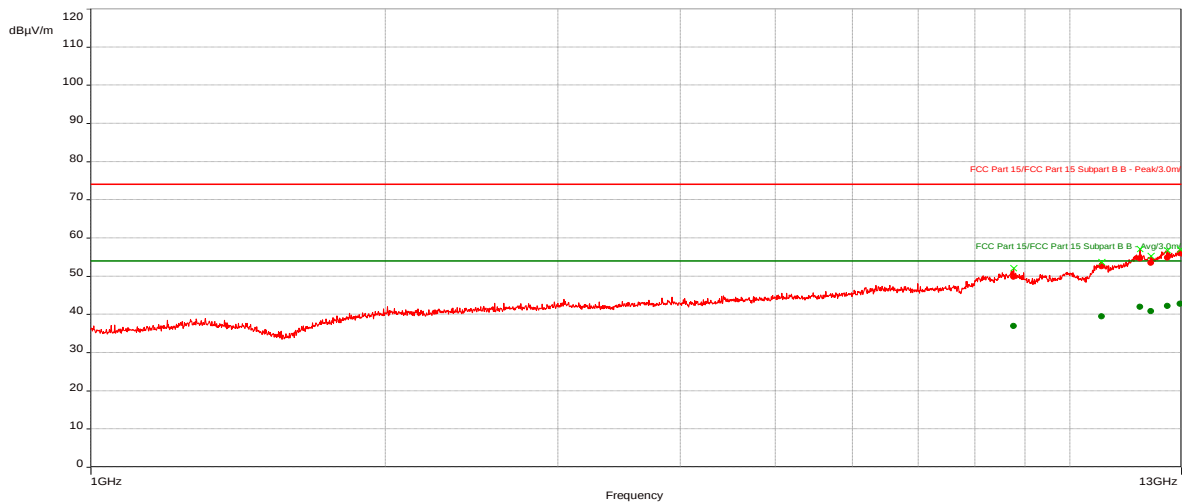
QuasiPeak (PASS) (6)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
32.2763	19.05	30.00	-10.95	158.40	1.39	Vertical	120k	0.10	-14.10
48.369	20.14	30.00	-9.86	217.30	1.31	Vertical	120k	0.10	-24.82
49.8295	14.51	30.00	-15.49	50.00	4.00	Vertical	120k	0.10	-25.30
60.8276	14.62	30.00	-15.38	104.20	4.00	Vertical	120k	0.10	-25.64
64.5165	19.05	30.00	-10.95	180.10	4.00	Vertical	120k	0.10	-25.34
225.1675	6.33	36.00	-29.67	212.80	3.72	Horizontal	120k	0.10	-21.19

BLE (Plastic Enclosure, With Keypad), Radio in Idle, 1-13 GHz, at 3m, (V/H Polarities)

Test Information:

Date and Time	11/20/2024 12:03:16 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	22 deg C
Humidity	26 %
Atmospheric Pressure	1000 mbars
Comments	Scan 59: BLE (Plastic Keypad), Rx-Idle Mode High Ch, RE 1 to 13 GHz (Used PRE12)

Graph:**Results:****Peak (PASS) (6)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
8758.613	49.91	74.00	-24.09	212.30	1.00	Vertical	1M	1.00	8.80
10780.548	52.56	74.00	-21.44	0.00	3.94	Vertical	1M	1.00	11.62
11797.965	54.62	74.00	-19.38	212.30	1.00	Vertical	1M	1.00	14.15
12096.517	53.49	74.00	-20.51	0.00	3.94	Vertical	1M	1.00	12.96
12579.606	54.91	74.00	-19.09	360.00	1.00	Vertical	1M	1.00	14.18
12960.084	56.01	74.00	-17.99	360.00	1.00	Horizontal	1M	1.00	14.88

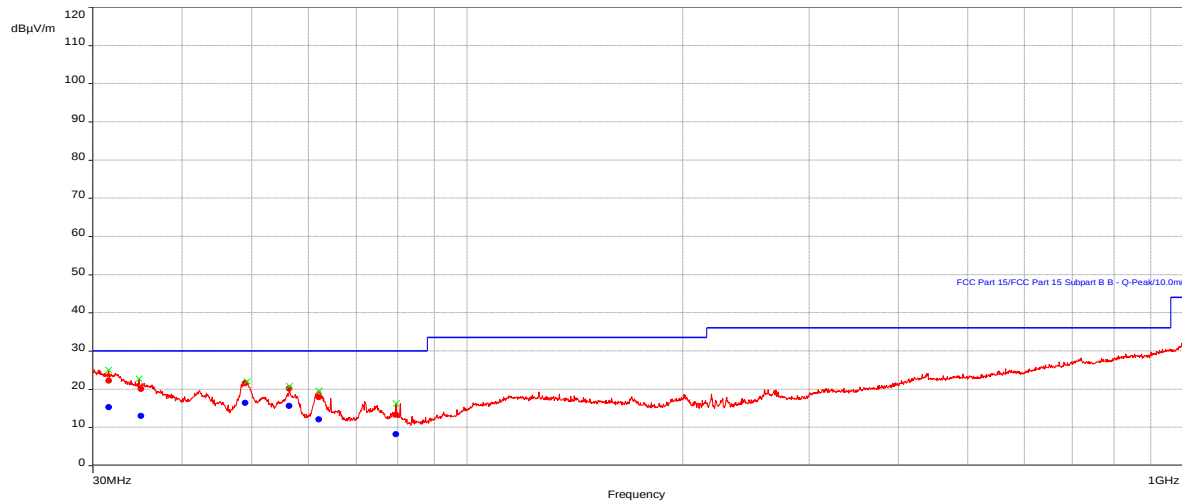
AVG (PASS) (6)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
8758.613	37.01	54.00	-16.99	212.30	1.00	Vertical	1M	1.00	8.80
10780.548	39.47	54.00	-14.53	0.00	3.94	Vertical	1M	1.00	11.62
11797.965	42.01	54.00	-11.99	212.30	1.00	Vertical	1M	1.00	14.15
12096.517	40.80	54.00	-13.20	0.00	3.94	Vertical	1M	1.00	12.96
12579.606	42.18	54.00	-11.82	360.00	1.00	Vertical	1M	1.00	14.18
12960.084	42.75	54.00	-11.25	360.00	1.00	Horizontal	1M	1.00	14.88

BLE (Metal Enclosure, With Keypad), Radio in Idle, 30-1000 MHz, at 10m, (V/H Polarities)

Test Information:

Date and Time	11/1/2024 11:49:12 AM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	21 C
Humidity	41 %
Atmospheric Pressure	1000 mbar
Comments	Scan 24 BLE Rx High-Idle (Metal- Keypad), POE Powered, RE 30-1000 MHz, 10m

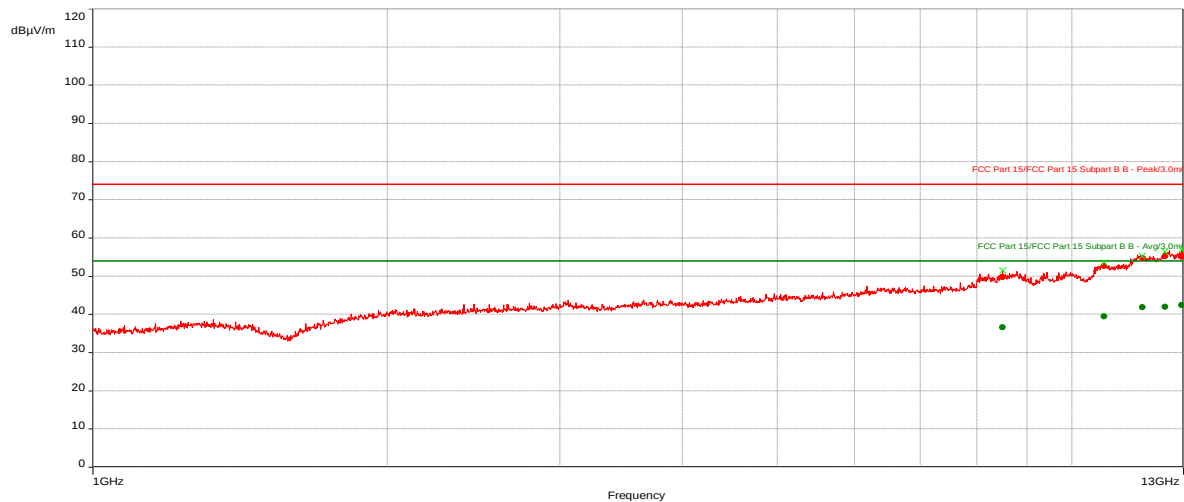
Graph:**Results:****QuasiPeak (PASS) (6)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
31.6213	15.31	30.00	-14.69	39.20	4.00	Vertical	120k	0.10	-13.64
35.0513	12.99	30.00	-17.01	114.70	2.54	Vertical	120k	0.10	-16.17
48.9458	16.41	30.00	-13.59	298.50	1.30	Vertical	120k	0.10	-25.04
56.442	15.69	30.00	-14.31	223.50	1.45	Vertical	120k	0.10	-25.97
62.064	12.13	30.00	-17.87	44.90	4.00	Vertical	120k	0.10	-25.50
79.5256	8.26	30.00	-21.74	360.00	4.00	Vertical	120k	0.10	-25.42

BLE (Metal Enclosure, With Keypad), Radio in Idle, 1-13 GHz, at 3m, (V/H Polarities)

Test Information:

Date and Time	11/20/2024 12:48:33 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	22 deg C
Humidity	26 %
Atmospheric Pressure	1000 mbars
Comments	Scan 60: BLE (Metal Keypad), Rx-Idle Mode High Ch, RE 1 to 13 GHz (Used PRE12)

Graph:**Results:****Peak (PASS) (5)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
8499.205	49.69	74.00	-24.31	0.00	1.00	Horizontal	1M	1.00	8.59
10789.37	52.70	74.00	-21.30	212.30	3.94	Horizontal	1M	1.00	11.66
11801.658	54.79	74.00	-19.21	360.00	1.00	Horizontal	1M	1.00	14.16
12446.732	55.16	74.00	-18.84	0.00	3.94	Vertical	1M	1.00	13.88
12942.085	55.13	74.00	-18.87	212.50	1.00	Horizontal	1M	1.00	14.86

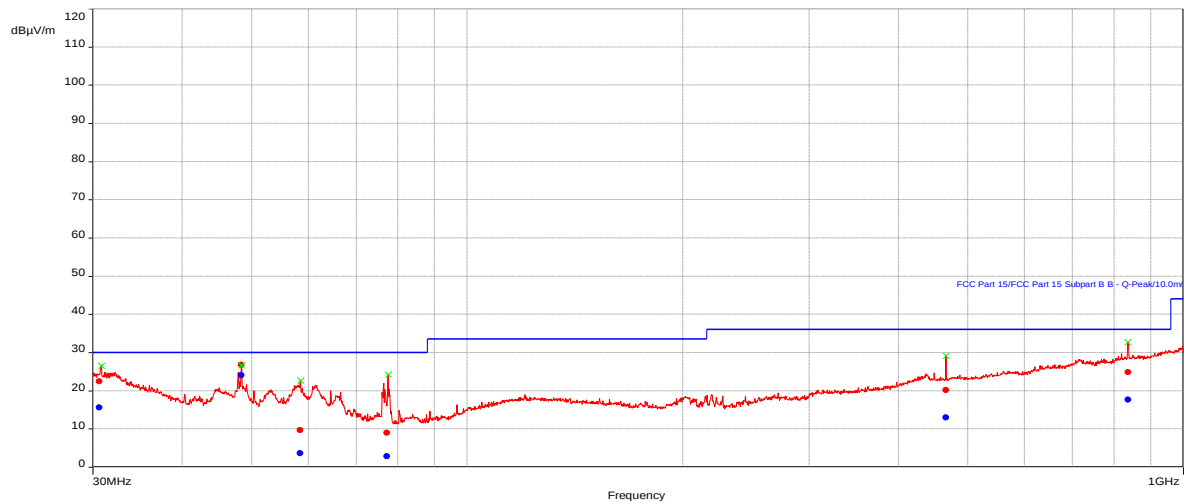
AVG (PASS) (5)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
8499.205	36.60	54.00	-17.40	0.00	1.00	Horizontal	1M	1.00	8.59
10789.37	39.48	54.00	-14.52	212.30	3.94	Horizontal	1M	1.00	11.66
11801.658	41.93	54.00	-12.07	360.00	1.00	Horizontal	1M	1.00	14.16
12446.732	42.00	54.00	-12.00	0.00	3.94	Vertical	1M	1.00	13.88
12942.085	42.42	54.00	-11.58	212.50	1.00	Horizontal	1M	1.00	14.86

BLE (Plastic Enclosure, Without Keypad), Radio in Idle, 30-1000 MHz, at 10m, (V/H Polarities)

Test Information:

Date and Time	10/25/2024 12:30:47 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	24 deg C
Humidity	34 %
Atmospheric Pressure	1011 mbars
Comments	Scan 7_BLE (Plastic - No Keypad) Rx-Idle High, POE Powered, RE 30-1000 MHz, 10m 64

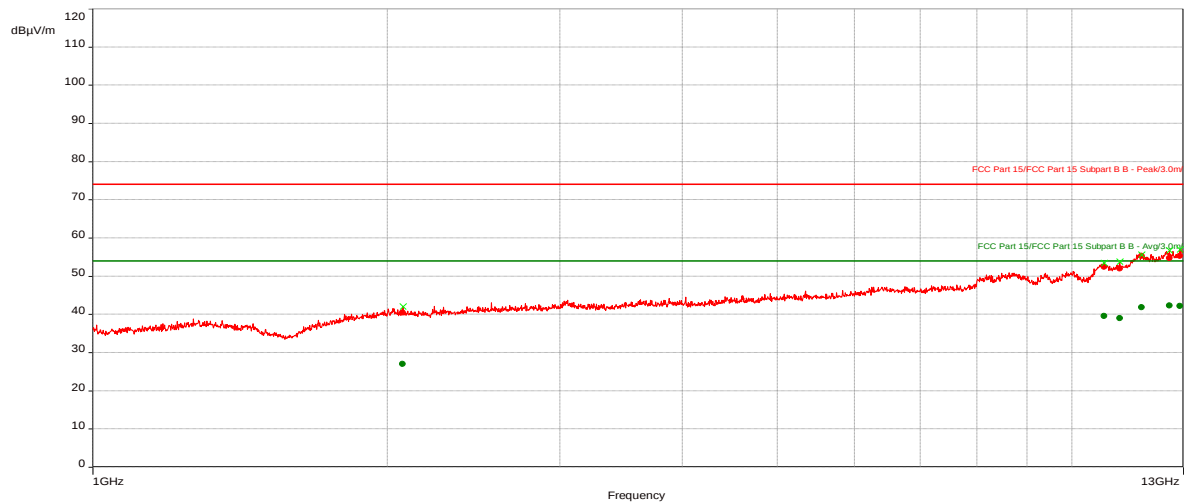
Graph:**Results:****QuasiPeak (PASS) (6)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time	Correction (dB)
30.6679	15.59	30.00	-14.41	114.60	4.00	Horizontal	120k	0.10	-13.16
48.3765	24.08	30.00	-5.92	310.50	1.30	Vertical	120k	0.10	-24.83
58.4596	3.67	30.00	-26.33	141.60	4.00	Horizontal	120k	0.10	-25.90
77.2297	2.92	30.00	-27.08	125.80	4.00	Horizontal	120k	0.10	-25.24
466.2158	12.97	36.00	-23.03	0.00	2.97	Horizontal	120k	0.10	-13.95
836.5661	17.74	36.00	-18.26	71.50	3.50	Horizontal	120k	0.10	-7.45

BLE (Plastic Enclosure, Without Keypad), Radio in Idle, 1-13 GHz, at 3m, (V/H Polarities)

Test Information:

Date and Time	11/20/2024 2:03:55 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	22 deg C
Humidity	26 %
Atmospheric Pressure	1000 mbars
Comments	Scan 62: BLE (Plastic Without Keypad), Rx-Idle Mode High Ch, RE 1 to 13 GHz (Used PRE12)

Graph:**Results:****Peak (PASS) (6)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2072.317	40.45	74.00	-33.55	0.00	1.00	Vertical	1M	1.00	-3.91
10793.882	52.54	74.00	-21.46	0.00	4.00	Vertical	1M	1.00	11.68
11196.026	51.99	74.00	-22.01	360.00	1.00	Horizontal	1M	1.00	11.52
11782.306	55.29	74.00	-18.71	0.00	4.00	Horizontal	1M	1.00	13.99
12577.547	54.76	74.00	-19.24	360.00	4.00	Horizontal	1M	1.00	14.18
12890.255	55.30	74.00	-18.70	360.00	4.00	Horizontal	1M	1.00	14.80

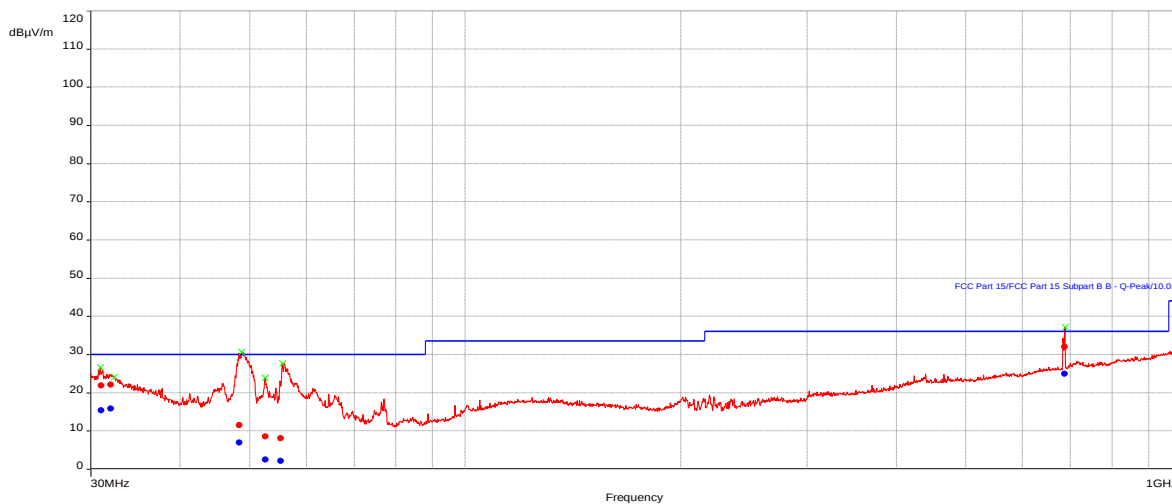
AVG (PASS) (6)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time (s)	Correction (dB)
2072.317	27.01	54.00	-26.99	0.00	1.00	Vertical	1M	1.00	-3.91
10793.882	39.59	54.00	-14.41	0.00	4.00	Vertical	1M	1.00	11.68
11196.026	38.97	54.00	-15.03	360.00	1.00	Horizontal	1M	1.00	11.52
11782.306	41.82	54.00	-12.18	0.00	4.00	Horizontal	1M	1.00	13.99
12577.547	42.29	54.00	-11.71	360.00	4.00	Horizontal	1M	1.00	14.18
12890.255	42.19	54.00	-11.81	360.00	4.00	Horizontal	1M	1.00	14.80

BLE (Metal Enclosure, Without Keypad), Radio in Idle, 30-1000 MHz, at 10m, (V/H Polarities)

Test Information:

Date and Time	10/25/2024 3:15:23 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	24 deg C
Humidity	34 %
Atmospheric Pressure	1011 mbars
Comments	Scan 12_BLE (Metal - No Keypad), Rx-Idle High, POE Powered, RE 30-1000 MHz, 10m 64

Graph:**Results:**

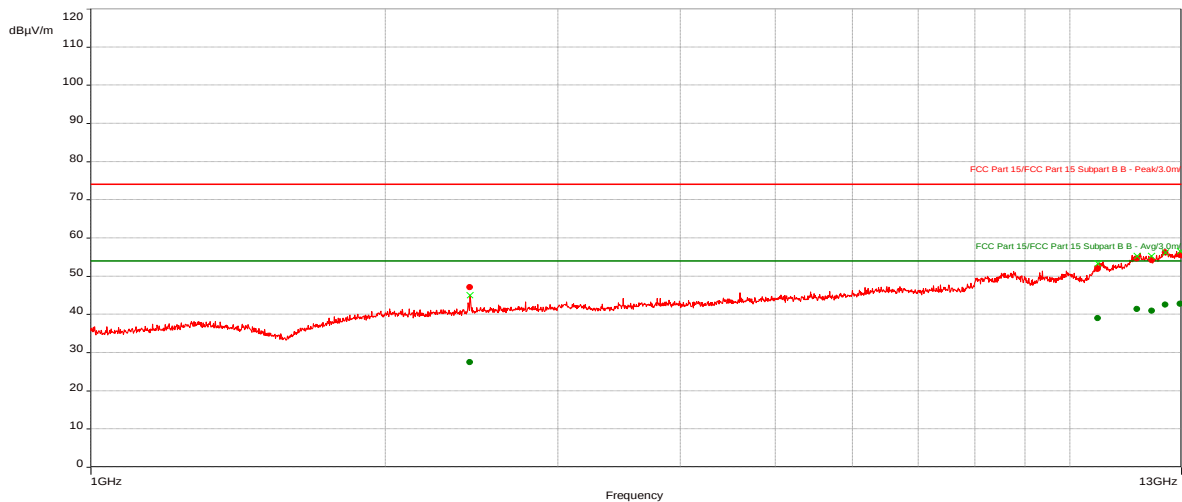
QuasiPeak (PASS) (6)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Meas.Time(s)	Correction (dB)
31.0348	15.43	30.00	-14.57	245.10	3.19	Horizontal	120k	0.10	-13.31
32.0138	15.86	30.00	-14.14	141.90	4.00	Vertical	120k	0.10	-13.88
48.3758	6.93	30.00	-23.07	120.30	3.86	Horizontal	120k	0.10	-24.83
52.6603	2.49	30.00	-27.51	272.00	1.99	Horizontal	120k	0.10	-25.89
55.2727	2.13	30.00	-27.87	71.60	3.59	Horizontal	120k	0.10	-26.06
687.461	24.96	36.00	-11.04	87.90	2.28	Vertical	120k	0.10	-10.23

BLE (Metal Enclosure, Without Keypad), Radio in Idle, 1-13 GHz, at 3m, (V/H Polarities)

Test Information:

Date and Time	11/20/2024 1:24:12 PM
Client and Project Number	Sargent Assa Abloy
Engineer	Kouma Sinn
Temperature	22 deg C
Humidity	26 %
Atmospheric Pressure	1000 mbars
Comments	Scan 61: BLE (Metal Without Keypad), Rx-Idle Mode High Ch, RE 1 to 13 GHz (Used PRE12)

Graph:**Results:****Peak (PASS) (6)**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
2439.475	47.14	74.00	-26.86	212.40	3.94	Vertical	1M	-3.17
10675.372	51.95	74.00	-22.05	0.00	4.00	Horizontal	1M	11.14
11710.836	54.67	74.00	-19.33	360.00	1.00	Horizontal	1M	13.34
12121.244	54.23	74.00	-19.77	212.60	4.00	Horizontal	1M	12.95
12513.483	56.21	74.00	-17.79	212.40	4.00	Vertical	1M	14.07
12962.129	55.52	74.00	-18.48	360.00	4.00	Vertical	1M	14.88

AVG (PASS) (6)

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW	Correction (dB)
2439.475	27.49	54.00	-26.51	212.40	3.94	Vertical	1M	-3.17
10675.372	38.97	54.00	-15.03	0.00	4.00	Horizontal	1M	11.14
11710.836	41.42	54.00	-12.58	360.00	1.00	Horizontal	1M	13.34
12121.244	40.92	54.00	-13.08	212.60	4.00	Horizontal	1M	12.95
12513.483	42.54	54.00	-11.46	212.40	4.00	Vertical	1M	14.07
12962.129	42.80	54.00	-11.20	360.00	4.00	Vertical	1M	14.88

Product Standard: FCC 47CFR15 Part 15 Subpart B, ISED ICES-003					Limit applied: See Report Section 11.2 Pretest Verification w/BB source: Yes		
Test Date	Test Personnel/ Initials	Supervising Engineer/ Initials	Input Voltage	Mode	Atmospheric Data		
					Temp C°	Relative Humidity %	Atmospheric Pressure mbar
09/14/2024	Kouma Sinn <i>KPS</i>	N/A	Internal battery	Idle	26	41	1012
10/01/2024	Kouma Sinn <i>KPS</i>	N/A	Internal battery	Idle	23	45	1011
10/15/2024	Kouma Sinn <i>KPS</i>	N/A	Internal battery	Idle	24	34	999

Deviations, Additions, or Exclusions: None

12 AC Mains Line Conducted Emissions

12.1 Method

Tests are performed in accordance with ANSI C63.4.

TEST SITE: EMC Lab

The EMC Lab has one Semi-anechoic Chamber and one Shielded Chamber. AC Mains Power is available at 120, 230, and 277 Single Phase; 208, 400, and 480 3-Phase. Large reference ground-planes are installed in the general lab area to facilitate EMC work not requiring a shielded environment.

Measurement Uncertainty

Measurement	Frequency Range	Expanded Uncertainty (k=2)	U _{CISPR}
AC Line Conducted Emissions	150 kHz - 30 MHz	2.8 dB	3.4 dB
Telco Port Emissions	150 kHz - 30 MHz	4.1 dB	5.0 dB
AC Line Conducted Emissions	9 kHz - 150 MHz	2.4 dB	3.4 dB

As shown in the table above our conducted emissions U_{lab} is less than the corresponding U_{CISPR} reference value in CISPR 16-4-2 Table 1, hence the compliance of the product is only based on the measured value, and no measurement uncertainty correction is required, based on CISPR 22 and CISPR 11 (for 2006 and later revisions) Clause 11.

Sample Calculations

The following is how net line-conducted readings were determined:

$$NF = RF + LF + CF + AF$$

Where NF = Net Reading in dB μ V

RF = Reading from receiver in dB μ V

LF = LISN or ISN Correction Factor in dB

CF = Cable Correction Factor in dB

AF = Attenuator Loss Factor in dB

To convert from dB μ V to μ V or mV the following was used:

$$UF = 10^{(NF / 20)} \text{ where } UF = \text{Net Reading in } \mu\text{V}$$

NF = Net Reading in dB μ V

Example:

$$NF = RF + LF + CF + AF = 28.5 + 0.2 + 0.4 + 20.0 = 49.1 \text{ dB}\mu\text{V}$$

$$UF = 10^{(49.1 \text{ dB}\mu\text{V} / 20)} = 285.1 \mu\text{V/m}$$

When BAT-EMC Emission Software is used, the “Level” includes all losses and gains and is compared directly in the “Margin” column to the “Limit”. The “Correction” includes LISN Factor, Attenuator, and Cable Loss. These are already accounted for in the “Level” column.

12.2 Test Equipment Used:

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV009'	weather station	Davis Instruments	6351 Vantage VUE	DAV009	04/05/2024	04/05/2025
ROS012'	EPL receiver 5kHz-30MHz ID#1350.4444K10-100953-Wj	Rhode & Schwarz	EPL	100953	02/05/2024	02/05/2025
LISN53'	Single Phase LISN 20 Amp	Com Power	LI-220C	20070071	12/22/2023	12/22/2024
CBLBNC2012-2'	50 Ohm Coaxial Cable	Pomona	RG-58 C/U	CBLBNC2012-2	04/23/2024	04/23/2025
WEI31'	10 dB 18GHz 5W Attenuator	Weinschel	WA2-10-0403	WEI31	01/17/2024	01/17/2025

Software Utilized:

Name	Manufacturer	Version
BAT-EMC	Nexio	2023.0.9.3

12.3 Results:

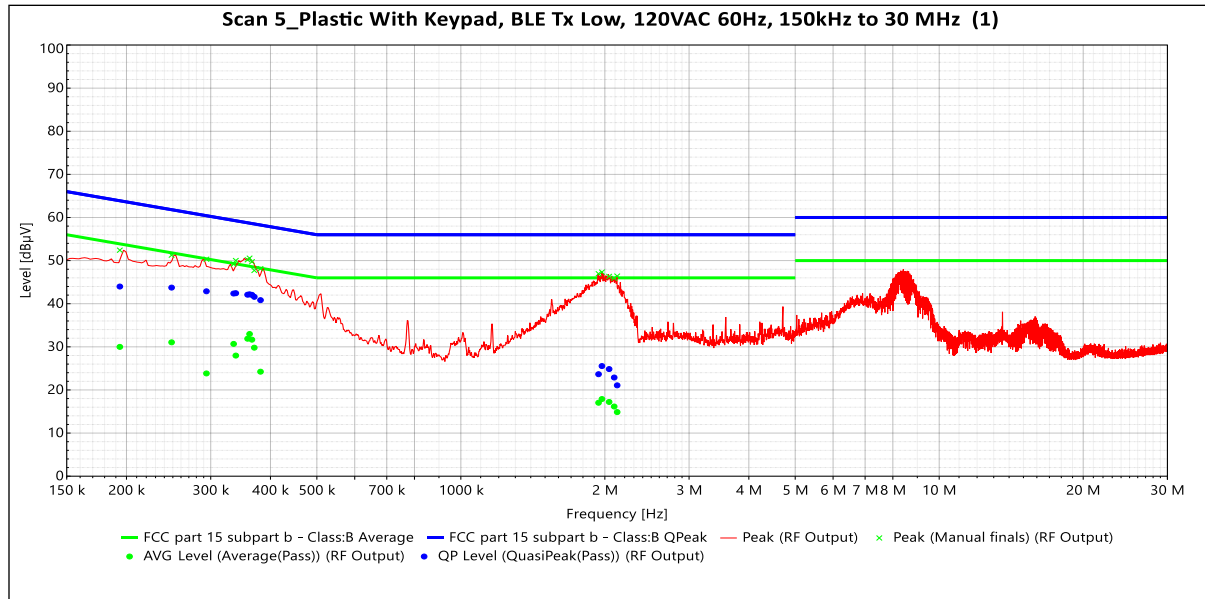
The sample tested was found to Comply.

12.4 Setup Photographs:

12.5 Plots/Data:

DATE	11/22/2024
ENGINEER	Kouma Sinn
CLIENT AND PROJECT	Sargent

EUT: Line conducted emissions



Intertek

Report Number: 105838170BOX-001.BLE

Issued: 12/12/2024

Final source: Average(Pass)

Frequency	Line	Correction (dB)	AVG Level (dBμV)	AVG Limit (dBμV)	AVG Margin (dB)	RBW (Hz)	Meas.Time (s)
193.694 kHz	Phase 1	9.77	29.99	53.92	-23.93	9 kHz	5
248.505 kHz	Phase 1	9.76	31.05	51.79	-20.74	9 kHz	5
293.886 kHz	Phase 1	9.76	23.83	50.41	-26.58	9 kHz	5
334.995 kHz	Phase 1	9.76	30.68	49.34	-18.66	9 kHz	5
338.505 kHz	Phase 1	9.76	27.97	49.23	-21.26	9 kHz	5
358.247 kHz	Phase 1	9.76	31.88	48.75	-16.86	9 kHz	5
361.71 kHz	Phase 1	9.76	32.98	48.69	-15.72	9 kHz	5
365.832 kHz	Phase 1	9.76	31.66	48.59	-16.93	9 kHz	5
370.005 kHz	Phase 1	9.76	29.81	48.49	-18.68	9 kHz	5
381.255 kHz	Phase 1	9.76	24.24	48.24	-24.01	9 kHz	5
1.940196 MHz	Phase 1	9.80	17.04	46.00	-28.97	9 kHz	5
1.97212 MHz	Phase 1	9.80	17.89	46.00	-28.11	9 kHz	5
2.041763 MHz	Phase 1	9.80	17.22	46.00	-28.78	9 kHz	5
2.092245 MHz	Phase 1	9.81	16.16	46.00	-29.84	9 kHz	5
2.122486 MHz	Phase 1	9.81	14.87	46.00	-31.13	9 kHz	5

Final source: QuasiPeak(Pass)

Frequency	Line	Correction (dB)	RBW (Hz)	Meas.Time (s)	QP Level (dBμV)	QP Limit (dBμV)	QP Margin (dB)
193.694 kHz	Phase 1	9.77	9 kHz	5	43.99	63.92	-19.93
248.505 kHz	Phase 1	9.76	9 kHz	5	43.74	61.79	-18.05
293.886 kHz	Phase 1	9.76	9 kHz	5	42.88	60.41	-17.53
334.995 kHz	Phase 1	9.76	9 kHz	5	42.37	59.34	-16.97
338.505 kHz	Phase 1	9.76	9 kHz	5	42.44	59.23	-16.79
358.247 kHz	Phase 1	9.76	9 kHz	5	42.09	58.75	-16.65
361.71 kHz	Phase 1	9.76	9 kHz	5	42.18	58.69	-16.52
365.832 kHz	Phase 1	9.76	9 kHz	5	42.05	58.59	-16.54
370.005 kHz	Phase 1	9.76	9 kHz	5	41.60	58.49	-16.89
381.255 kHz	Phase 1	9.76	9 kHz	5	40.83	58.24	-17.41
1.940196 MHz	Phase 1	9.80	9 kHz	5	23.65	56.00	-32.35
1.97212 MHz	Phase 1	9.80	9 kHz	5	25.54	56.00	-30.46
2.041763 MHz	Phase 1	9.80	9 kHz	5	24.84	56.00	-31.16
2.092245 MHz	Phase 1	9.81	9 kHz	5	22.88	56.00	-33.12
2.122486 MHz	Phase 1	9.81	9 kHz	5	21.07	56.00	-34.93

Product Standard: CFR47 FCC Part 15 Subpart B, ICES-003				Limit applied: All Class B Pretest Verification w/ signal generator: Ye			
Test Date	Test Personnel/ Initials	Supervising Engineer/ Initials	Input Voltage	Mode	Atmospheric Data		
					Temp C°	Relative Humidity %	Atmospheric Pressure mbar
11/22/2024	Kouma Sinn <i>KPS</i>	N/A	120VAC 60Hz	Continuous Transmitting	24	33	998

Deviations, Additions, or Exclusions: None

13 Revision History

Revision Level	Date	Report Number	Prepared By	Reviewed By	Notes
0	12/12/2024	105838170BOX-001.BLE	KPS <i>KPS</i>	VFV <i>VFV</i>	Original Issue