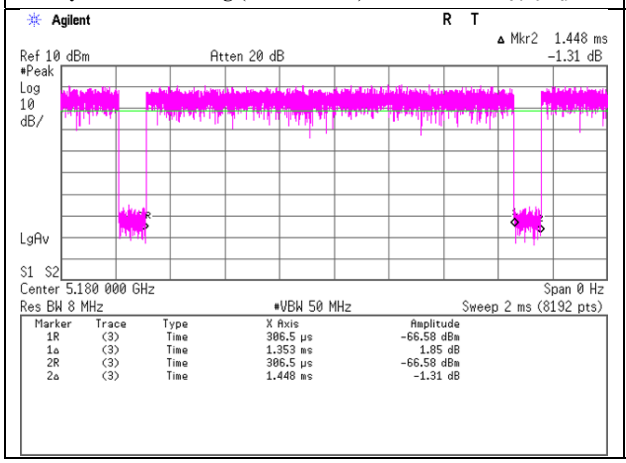
Burst rate confirmation
(SAR Power)

Report No.	12804674H	
Test place	Ise EMC Lab. No.6 Measurement Room	
Date	September 4, 2019	October 26, 2019
Temperature / Humidity	22 deg. C / 60 % RH	22 deg. C / 54 % RH
Engineer	Takumi Shimada	Takafumi Noguchi
Mode	Tx	

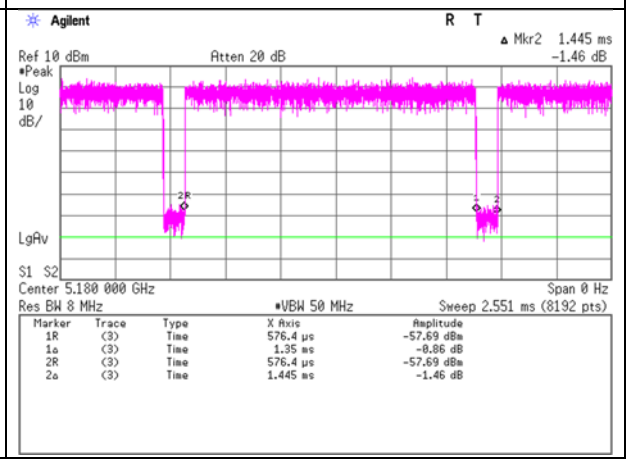
11ac-20 MCS 0 SISO Antenna 1

Tx on / (Tx on + Tx off) =	0.934
Tx on / (Tx on + Tx off) * 100 =	93.4 %
Duty factor = 10 * log (1.448 / 1.353) =	0.29 dB



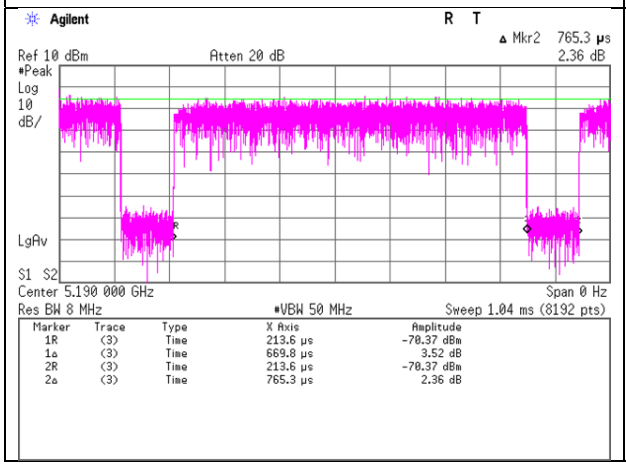
11ac-20 MCS 0 MIMO Antenna 1

Tx on / (Tx on + Tx off) =	0.934
Tx on / (Tx on + Tx off) * 100 =	93.4 %
Duty factor = 10 * log (1.445 / 1.35) =	0.30 dB



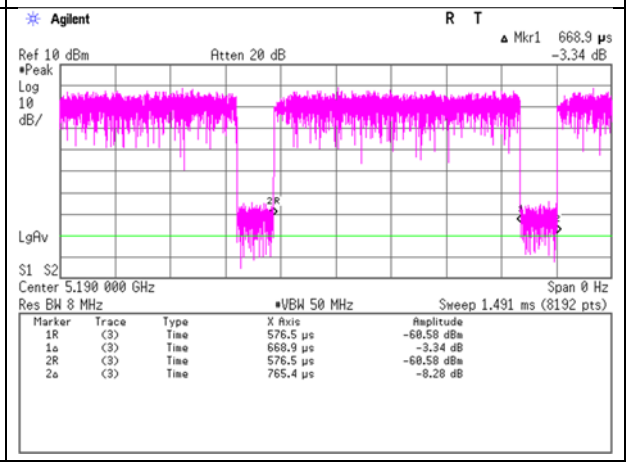
11n-40 MCS 0 SISO Antenna 1

Tx on / (Tx on + Tx off) =	0.875
Tx on / (Tx on + Tx off) * 100 =	87.5 %
Duty factor = 10 * log (0.7653 / 0.6698) =	0.58 dB



11n-40 MCS 0 MIMO Antenna 1

Tx on / (Tx on + Tx off) =	0.874
Tx on / (Tx on + Tx off) * 100 =	87.4 %
Duty factor = 10 * log (0.7654 / 0.6689) =	0.59 dB

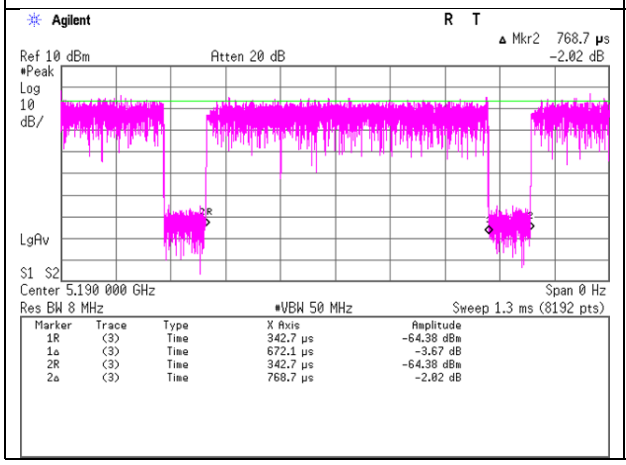


Burst rate confirmation
(SAR Power)

Report No.	12804674H	
Test place	Ise EMC Lab. No.6 Measurement Room	
Date	September 4, 2019	October 26, 2019
Temperature / Humidity	22 deg. C / 60 % RH	22 deg. C / 54 % RH
Engineer	Takumi Shimada	Takafumi Noguchi
Mode	Tx	

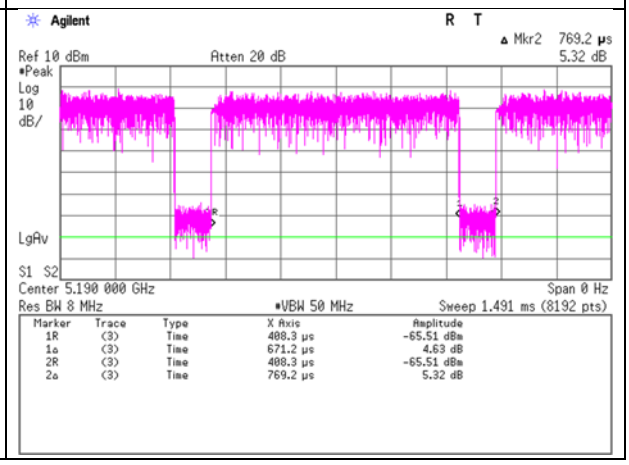
11ac-40 MCS 0 SISO Antenna 1

Tx on / (Tx on + Tx off) =	0.874
Tx on / (Tx on + Tx off) * 100 =	87.4 %
Duty factor = 10 * log (0.7687 / 0.6721) =	0.58 dB



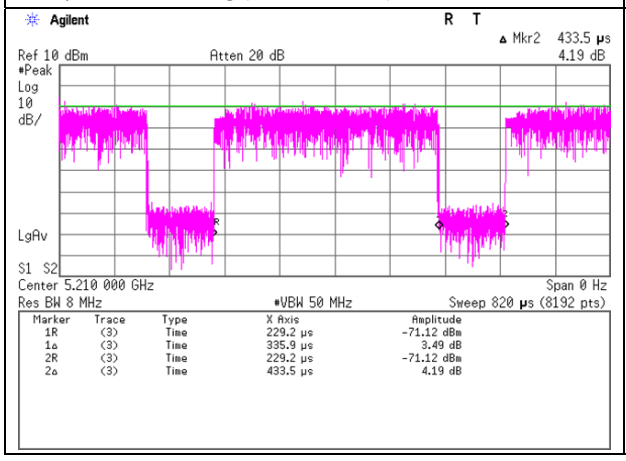
11ac-40 MCS 0 MIMO Antenna 1

Tx on / (Tx on + Tx off) =	0.873
Tx on / (Tx on + Tx off) * 100 =	87.3 %
Duty factor = 10 * log (0.7692 / 0.6712) =	0.59 dB



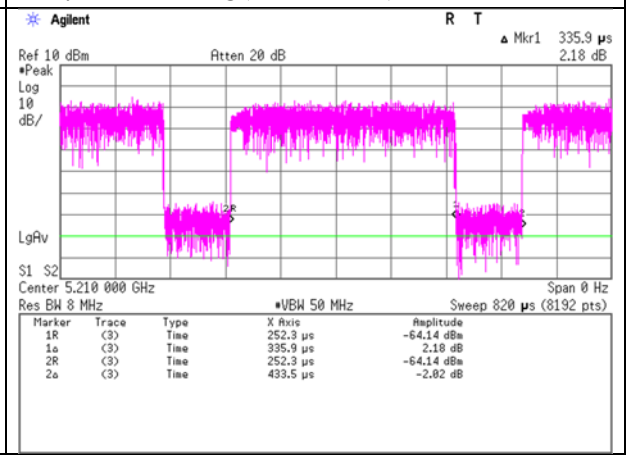
11ac-80 MCS 0 SISO Antenna 1

Tx on / (Tx on + Tx off) =	0.775
Tx on / (Tx on + Tx off) * 100 =	77.5 %
Duty factor = 10 * log (0.4335 / 0.3359) =	1.11 dB



11ac-80 MCS 0 MIMO Antenna 2

Tx on / (Tx on + Tx off) =	0.775
Tx on / (Tx on + Tx off) * 100 =	77.5 %
Duty factor = 10 * log (0.4335 / 0.3359) =	1.11 dB



Maximum Power Spectral Density

Report No.	12804674H		
Test place	Ise EMC Lab. No.6 Measurement Room		
Date	September 3, 2019	November 15, 2019	November 15, 2019
Temperature / Humidity	24 deg. C / 64 % RH	24 deg. C / 40 % RH	24 deg. C / 40 % RH
Engineer	Takumi Shimada	Yuta Moriya	Yuta Moriya
Mode	Tx 11a		

Antenna 1

Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	PSD Reading [dBm /MHz]	Cable Loss [dB]	Atten. Loss [dB]	Duty Factor [dB]	Antenna Gain [dBi]	RBW Correction Factor [dB]	PSD (Conducted) Result [dBm /MHz]	PSD (Conducted) Limit [dBm /MHz]	PSD (Conducted) Margin [dB]	PSD (e.i.r.p.) Result [dBm /MHz]	PSD (e.i.r.p.) Limit [dBm /MHz]	PSD (e.i.r.p.) Margin [dB]
5180	-17.44	4.90	10.06	1.72	-2.9	0.00	-0.76	11.00	11.76	-3.66	17.00	20.66
5220	-16.83	4.91	10.06	1.72	-2.9	0.00	-0.14	11.00	11.14	-3.04	17.00	20.04
5240	-17.01	4.92	10.06	1.72	-2.9	0.00	-0.31	11.00	11.31	-3.21	17.00	20.21
5260	-16.81	4.92	10.06	1.72	-2.9	0.00	-0.11	11.00	11.11	-3.01	17.00	20.01
5300	-16.92	4.93	10.06	1.72	-2.9	0.00	-0.21	11.00	11.21	-3.11	17.00	20.11
5320	-16.89	4.93	10.06	1.72	-2.9	0.00	-0.18	11.00	11.18	-3.08	17.00	20.08
5500	-17.26	4.97	10.06	1.72	-2.9	0.00	-0.51	11.00	11.51	-3.41	17.00	20.41
5580	-17.02	4.98	10.06	1.72	-2.9	0.00	-0.26	11.00	11.26	-3.16	17.00	20.16
5700	-17.01	5.01	10.06	1.72	-2.9	0.00	-0.22	11.00	11.22	-3.12	17.00	20.12
5720	-14.73	2.90	10.12	1.72	-2.9	0.00	0.01	11.00	10.99	-2.89	17.00	19.89
5745	-19.75	5.02	10.06	1.72	-2.9	0.27	-2.68	30.00	32.68	-5.58	36.00	41.58
5785	-19.25	5.03	10.06	1.72	-2.9	0.27	-2.17	30.00	32.17	-5.07	36.00	41.07
5825	-19.74	5.03	10.06	1.72	-2.9	0.27	-2.66	30.00	32.66	-5.56	36.00	41.56

Sample Calculation:
PSD: Power Spectral Density
The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.
RBW Correction Factor = 10 * log (Specified bandwidth / Measured bandwidth)
PSD Result (Conducted) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty Factor + RBW Correct
PSD Result (e.i.r.p.) = Conducted PSD Result + Antenna Gain

Maximum Power Spectral Density

Report No.	12804674H	
Test place	Ise EMC Lab. No.6 Measurement Room	
Date	September 3, 2019	November 15, 2019
Temperature / Humidity	24 deg. C / 64 % RH	24 deg. C / 40 % RH
Engineer	Takumi Shimada	Yuta Moriya
Mode	Tx 11n-20	

Antenna 1+2

Applied limit: 15.407, mobile and portable client device

Tested Frequency	PSD (Conducted)						PSD (e.i.r.p.)					
	Antenna			Result	Limit	Margin	Antenna			Result	Limit	Margin
	1	2	Sum				1	2	Sum			
[MHz]	[mW/MHz]	[mW/MHz]	[mW/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]	[mW/MHz]	[mW/MHz]	[mW/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]
5180	0.84	0.76	1.60	2.05	11.00	8.95	0.43	0.39	0.82	-0.85	17.00	17.85
5220	0.94	0.79	1.73	2.39	11.00	8.61	0.48	0.41	0.89	-0.51	17.00	17.51
5240	0.83	0.77	1.61	2.06	11.00	8.94	0.43	0.40	0.82	-0.84	17.00	17.84
5260	0.90	0.83	1.72	2.36	11.00	8.64	0.46	0.42	0.88	-0.54	17.00	17.54
5300	0.83	0.81	1.63	2.13	11.00	8.87	0.42	0.41	0.84	-0.77	17.00	17.77
5320	0.84	0.73	1.57	1.95	11.00	9.05	0.43	0.37	0.80	-0.95	17.00	17.95
5500	0.81	0.71	1.52	1.81	11.00	9.19	0.41	0.36	0.78	-1.09	17.00	18.09
5580	0.88	0.81	1.69	2.28	11.00	8.72	0.45	0.42	0.87	-0.62	17.00	17.62
5700	0.96	0.84	1.80	2.55	11.00	8.45	0.49	0.43	0.92	-0.35	17.00	17.35
5720	0.94	0.87	1.82	2.59	11.00	8.41	0.48	0.45	0.93	-0.31	17.00	17.31
5745	0.50	0.44	0.94	-0.25	30.00	30.25	0.26	0.23	0.48	-3.15	36.00	39.15
5785	0.57	0.48	1.05	0.20	30.00	29.80	0.29	0.25	0.54	-2.70	36.00	38.70
5825	0.54	0.46	1.00	0.00	30.00	30.00	0.28	0.23	0.51	-2.90	36.00	38.90

			Antenna 1						Antenna 2					
Tested Frequency	Duty Factor	RBW Correction Factor	PSD Reading	Cable Loss	Atten. Loss	Antenna Gain	PSD Result Cond.	PSD Result e.i.r.p.	PSD Reading	Cable Loss	Atten. Loss	Antenna Gain	PSD Result Cond.	PSD Result e.i.r.p.
[MHz]	[dB]	[dB]	[dBm/MHz]	[dB]	[dB]	[dBi]	[dBm/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]	[dB]	[dBi]	[dBm/MHz]	[dBm/MHz]
5180	1.94	0.00	-17.66	4.90	10.06	-2.9	-0.76	-3.66	-18.07	4.90	10.06	-2.9	-1.17	-4.07
5220	1.94	0.00	-17.17	4.91	10.06	-2.9	-0.26	-3.16	-17.92	4.91	10.06	-2.9	-1.01	-3.91
5240	1.94	0.00	-17.71	4.92	10.06	-2.9	-0.79	-3.69	-18.04	4.92	10.06	-2.9	-1.12	-4.02
5260	1.94	0.00	-17.40	4.92	10.06	-2.9	-0.48	-3.38	-17.74	4.92	10.06	-2.9	-0.82	-3.72
5300	1.94	0.00	-17.76	4.93	10.06	-2.9	-0.83	-3.73	-17.87	4.93	10.06	-2.9	-0.94	-3.84
5320	1.94	0.00	-17.70	4.93	10.06	-2.9	-0.77	-3.67	-18.30	4.93	10.06	-2.9	-1.37	-4.27
5500	1.94	0.00	-17.89	4.97	10.06	-2.9	-0.92	-3.82	-18.46	4.97	10.06	-2.9	-1.49	-4.39
5580	1.94	0.00	-17.54	4.98	10.06	-2.9	-0.56	-3.46	-17.89	4.98	10.06	-2.9	-0.91	-3.81
5700	1.94	0.00	-17.18	5.01	10.06	-2.9	-0.17	-3.07	-17.78	5.01	10.06	-2.9	-0.77	-3.67
5720	1.94	0.00	-15.21	2.90	10.12	-2.9	-0.25	-3.15	-15.55	2.90	10.12	-2.9	-0.59	-3.49
5745	1.94	0.27	-20.27	5.02	10.06	-2.9	-2.98	-5.88	-20.85	5.02	10.06	-2.9	-3.56	-6.46
5785	1.94	0.27	-19.76	5.03	10.06	-2.9	-2.46	-5.36	-20.48	5.03	10.06	-2.9	-3.18	-6.08
5825	1.94	0.27	-19.95	5.03	10.06	-2.9	-2.65	-5.55	-20.70	5.03	10.06	-2.9	-3.40	-6.30

Sample Calculation:
PSD: Power Spectral Density
The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.
RBW Correction Factor = 10 * log (Specified bandwidth / Measured bandwidth)
PSD Result (Conducted) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty Factor + RBW Correction Factor
PSD Result (e.i.r.p.) = Conducted PSD Result + Antenna Gain

Maximum Power Spectral Density

Report No.	12804674H	
Test place	Ise EMC Lab. No.6 Measurement Room	
Date	September 3, 2019	November 15, 2019
Temperature / Humidity	24 deg. C / 64 % RH	24 deg. C / 40 % RH
Engineer	Takumi Shimada	Yuta Moriya
Mode	Tx 11ac-20	

Antenna 1+2

Applied limit: 15.407, mobile and portable client device

Tested Frequency	PSD (Conducted)						PSD (e.i.r.p.)					
	Antenna			Result	Limit	Margin	Antenna			Result	Limit	Margin
	1	2	Sum				1	2	Sum			
[MHz]	[mW/MHz]	[mW/MHz]	[mW/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]	[mW/MHz]	[mW/MHz]	[mW/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]
5180	0.83	0.75	1.58	1.98	11.00	9.02	0.42	0.39	0.81	-0.92	17.00	17.92
5220	0.88	0.88	1.77	2.47	11.00	8.53	0.45	0.45	0.91	-0.43	17.00	17.43
5240	1.03	0.76	1.78	2.51	11.00	8.49	0.53	0.39	0.91	-0.39	17.00	17.39
5260	0.93	0.85	1.78	2.51	11.00	8.49	0.48	0.44	0.91	-0.39	17.00	17.39
5300	0.86	0.79	1.65	2.17	11.00	8.83	0.44	0.40	0.85	-0.73	17.00	17.73
5320	0.82	0.77	1.59	2.02	11.00	8.98	0.42	0.40	0.82	-0.88	17.00	17.88
5500	0.84	0.78	1.61	2.08	11.00	8.92	0.43	0.40	0.83	-0.82	17.00	17.82
5580	0.87	0.74	1.62	2.09	11.00	8.91	0.45	0.38	0.83	-0.81	17.00	17.81
5700	0.91	0.91	1.82	2.61	11.00	8.39	0.47	0.47	0.93	-0.29	17.00	17.29
5720	1.03	0.89	1.92	2.82	11.00	8.18	0.53	0.45	0.98	-0.08	17.00	17.08
5745	0.51	0.43	0.95	-0.24	30.00	30.24	0.26	0.22	0.49	-3.14	36.00	39.14
5785	0.54	0.45	0.99	-0.04	30.00	30.04	0.28	0.23	0.51	-2.94	36.00	38.94
5825	0.54	0.44	0.98	-0.07	30.00	30.07	0.28	0.23	0.50	-2.97	36.00	38.97

			Antenna 1						Antenna 2					
Tested Frequency	Duty Factor	RBW Correction Factor	PSD Reading	Cable Loss	Atten. Loss	Antenna Gain	PSD Result Cond.	PSD Result e.i.r.p.	PSD Reading	Cable Loss	Atten. Loss	Antenna Gain	PSD Result Cond.	PSD Result e.i.r.p.
[MHz]	[dB]	[dB]	[dBm/MHz]	[dB]	[dB]	[dBi]	[dBm/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]	[dB]	[dBi]	[dBm/MHz]	[dBm/MHz]
5180	1.91	0.00	-17.70	4.90	10.06	-2.9	-0.83	-3.73	-18.11	4.90	10.06	-2.9	-1.24	-4.14
5220	1.91	0.00	-17.42	4.91	10.06	-2.9	-0.54	-3.44	-17.42	4.91	10.06	-2.9	-0.54	-3.44
5240	1.91	0.00	-16.78	4.92	10.06	-2.9	0.11	-2.79	-18.10	4.92	10.06	-2.9	-1.21	-4.11
5260	1.91	0.00	-17.21	4.92	10.06	-2.9	-0.32	-3.22	-17.58	4.92	10.06	-2.9	-0.69	-3.59
5300	1.91	0.00	-17.54	4.93	10.06	-2.9	-0.64	-3.54	-17.95	4.93	10.06	-2.9	-1.05	-3.95
5320	1.91	0.00	-17.75	4.93	10.06	-2.9	-0.85	-3.75	-18.03	4.93	10.06	-2.9	-1.13	-4.03
5500	1.91	0.00	-17.71	4.97	10.06	-2.9	-0.77	-3.67	-18.04	4.97	10.06	-2.9	-1.10	-4.00
5580	1.91	0.00	-17.53	4.98	10.06	-2.9	-0.58	-3.48	-18.24	4.98	10.06	-2.9	-1.29	-4.19
5700	1.91	0.00	-17.39	5.01	10.06	-2.9	-0.41	-3.31	-17.38	5.01	10.06	-2.9	-0.40	-3.30
5720	1.91	0.00	-14.81	2.90	10.12	-2.9	0.12	-2.78	-15.46	2.90	10.12	-2.9	-0.53	-3.43
5745	1.91	0.27	-20.15	5.02	10.06	-2.9	-2.89	-5.79	-20.89	5.02	10.06	-2.9	-3.63	-6.53
5785	1.91	0.27	-19.97	5.03	10.06	-2.9	-2.70	-5.60	-20.70	5.03	10.06	-2.9	-3.43	-6.33
5825	1.91	0.27	-19.93	5.03	10.06	-2.9	-2.66	-5.56	-20.82	5.03	10.06	-2.9	-3.55	-6.45

Sample Calculation:
PSD: Power Spectral Density
The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.
RBW Correction Factor = 10 * log (Specified bandwidth / Measured bandwidth)
PSD Result (Conducted) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty Factor + RBW Correction Factor
PSD Result (e.i.r.p.) = Conducted PSD Result + Antenna Gain

Maximum Power Spectral Density

Report No.	12804674H	
Test place	Ise EMC Lab. No.6 Measurement Room	
Date	September 3, 2019	November 15, 2019
Temperature / Humidity	24 deg. C / 64 % RH	24 deg. C / 40 % RH
Engineer	Takumi Shimada	Yuta Moriya
Mode	Tx 11n-40	

Antenna 1+2 Applied limit: 15.407, mobile and portable client device

Tested Frequency	PSD (Conducted)						PSD (e.i.r.p.)					
	Antenna			Result	Limit	Margin	Antenna			Result	Limit	Margin
	1	2	Sum				1	2	Sum			
[MHz]	[mW/MHz]	[mW/MHz]	[mW/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]	[mW/MHz]	[mW/MHz]	[mW/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]
5190	0.31	0.25	0.56	-2.53	11.00	13.53	0.16	0.13	0.29	-5.43	17.00	22.43
5230	0.27	0.26	0.53	-2.79	11.00	13.79	0.14	0.13	0.27	-5.69	17.00	22.69
5270	0.28	0.27	0.55	-2.61	11.00	13.61	0.14	0.14	0.28	-5.51	17.00	22.51
5310	0.26	0.25	0.51	-2.96	11.00	13.96	0.13	0.13	0.26	-5.86	17.00	22.86
5510	0.28	0.26	0.54	-2.67	11.00	13.67	0.14	0.13	0.28	-5.57	17.00	22.57
5550	0.30	0.26	0.56	-2.54	11.00	13.54	0.15	0.13	0.29	-5.44	17.00	22.44
5670	0.29	0.26	0.55	-2.58	11.00	13.58	0.15	0.14	0.28	-5.48	17.00	22.48
5710	0.33	0.38	0.71	-1.49	11.00	12.49	0.17	0.20	0.36	-4.39	17.00	21.39
5755	0.19	0.16	0.35	-4.54	30.00	34.54	0.10	0.08	0.18	-7.44	36.00	43.44
5795	0.17	0.16	0.34	-4.74	30.00	34.74	0.09	0.08	0.17	-7.64	36.00	43.64

			Antenna 1						Antenna 2					
Tested Frequency	Duty Factor	RBW Correction Factor	PSD Reading	Cable Loss	Atten. Loss	Antenna Gain	PSD Result Cond.	PSD Result e.i.r.p.	PSD Reading	Cable Loss	Atten. Loss	Antenna Gain	PSD Result Cond.	PSD Result e.i.r.p.
[MHz]	[dB]	[dB]	[dBm/MHz]	[dB]	[dB]	[dBi]	[dBm/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]	[dB]	[dBi]	[dBm/MHz]	[dBm/MHz]
5190	2.72	0.00	-22.83	4.90	10.06	-2.90	-5.15	-8.05	-23.66	4.90	10.06	-2.90	-5.98	-8.88
5230	2.72	0.00	-23.44	4.91	10.06	-2.90	-5.75	-8.65	-23.54	4.91	10.06	-2.90	-5.85	-8.75
5270	2.72	0.00	-23.21	4.92	10.06	-2.90	-5.51	-8.41	-23.43	4.92	10.06	-2.90	-5.73	-8.63
5310	2.72	0.00	-23.63	4.93	10.06	-2.90	-5.92	-8.82	-23.74	4.93	10.06	-2.90	-6.03	-8.93
5510	2.72	0.00	-23.29	4.97	10.06	-2.90	-5.54	-8.44	-23.57	4.97	10.06	-2.90	-5.82	-8.72
5550	2.72	0.00	-23.06	4.98	10.06	-2.90	-5.30	-8.20	-23.58	4.98	10.06	-2.90	-5.82	-8.72
5670	2.72	0.00	-23.19	5.00	10.06	-2.90	-5.41	-8.31	-23.55	5.00	10.06	-2.90	-5.77	-8.67
5710	2.72	0.00	-20.61	2.90	10.12	-2.90	-4.87	-7.77	-19.89	2.90	10.12	-2.90	-4.15	-7.05
5755	2.72	0.27	-25.24	5.02	10.06	-2.90	-7.17	-10.07	-26.03	5.02	10.06	-2.90	-7.96	-10.86
5795	2.72	0.27	-25.68	5.03	10.06	-2.90	-7.60	-10.50	-25.99	5.03	10.06	-2.90	-7.91	-10.81

Sample Calculation:
PSD: Power Spectral Density
The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.
RBW Correction Factor = 10 * log (Specified bandwidth / Measured bandwidth)
PSD Result (Conducted) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty Factor + RBW Correction Factor
PSD Result (e.i.r.p.) = Conducted PSD Result + Antenna Gain

Maximum Power Spectral Density

Report No.	12804674H	
Test place	Ise EMC Lab. No.6 Measurement Room	
Date	September 3, 2019	November 15, 2019
Temperature / Humidity	24 deg. C / 64 % RH	24 deg. C / 40 % RH
Engineer	Takumi Shimada	Yuta Moriya
Mode	Tx 11ac-40	

Antenna 1+2 Applied limit: 15.407, mobile and portable client device

Tested Frequency	PSD (Conducted)						PSD (e.i.r.p.)					
	Antenna			Result	Limit	Margin	Antenna			Result	Limit	Margin
	1	2	Sum				1	2	Sum			
[MHz]	[mW/MHz]	[mW/MHz]	[mW/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]	[mW/MHz]	[mW/MHz]	[mW/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]
5190	0.24	0.25	0.48	-3.18	11.00	14.18	0.12	0.13	0.25	-6.08	17.00	23.08
5230	0.24	0.27	0.51	-2.92	11.00	13.92	0.12	0.14	0.26	-5.82	17.00	22.82
5270	0.24	0.25	0.49	-3.09	11.00	14.09	0.12	0.13	0.25	-5.99	17.00	22.99
5310	0.25	0.23	0.48	-3.16	11.00	14.16	0.13	0.12	0.25	-6.06	17.00	23.06
5510	0.28	0.24	0.52	-2.84	11.00	13.84	0.15	0.12	0.27	-5.74	17.00	22.74
5550	0.27	0.22	0.49	-3.08	11.00	14.08	0.14	0.11	0.25	-5.98	17.00	22.98
5670	0.27	0.23	0.50	-3.02	11.00	14.02	0.14	0.12	0.26	-5.92	17.00	22.92
5710	0.29	0.26	0.55	-2.56	11.00	13.56	0.15	0.14	0.28	-5.46	17.00	22.46
5755	0.14	0.13	0.27	-5.62	30.00	35.62	0.07	0.07	0.14	-8.52	36.00	44.52
5795	0.16	0.14	0.30	-5.22	30.00	35.22	0.08	0.07	0.15	-8.12	36.00	44.12

			Antenna 1						**Antenna 2**					
Tested Frequency	Duty Factor	RBW Correction Factor	PSD Reading	Cable Loss	Atten. Loss	Antenna Gain	PSD Result Cond.	PSD Result e.i.r.p.	PSD Reading	Cable Loss	Atten. Loss	Antenna Gain	PSD Result Cond.	PSD Result e.i.r.p.
[MHz]	[dB]	[dB]	[dBm/MHz]	[dB]	[dB]	[dBi]	[dBm/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]	[dB]	[dBi]	[dBm/MHz]	[dBm/MHz]
5190	1.04	0.00	-22.28	4.90	10.06	-2.90	-6.28	-9.18	-22.10	4.90	10.06	-2.90	-6.10	-9.00
5230	1.04	0.00	-22.19	4.91	10.06	-2.90	-6.18	-9.08	-21.71	4.91	10.06	-2.90	-5.70	-8.60
5270	1.04	0.00	-22.21	4.92	10.06	-2.90	-6.19	-9.09	-22.04	4.92	10.06	-2.90	-6.02	-8.92
5310	1.04	0.00	-22.07	4.93	10.06	-2.90	-6.04	-8.94	-22.33	4.93	10.06	-2.90	-6.30	-9.20
5510	1.04	0.00	-21.55	4.97	10.06	-2.90	-5.48	-8.38	-22.33	4.97	10.06	-2.90	-6.26	-9.16
5550	1.04	0.00	-21.73	4.98	10.06	-2.90	-5.65	-8.55	-22.65	4.98	10.06	-2.90	-6.57	-9.47
5670	1.04	0.00	-21.74	5.00	10.06	-2.90	-5.64	-8.54	-22.55	5.00	10.06	-2.90	-6.45	-9.35
5710	1.04	0.00	-19.42	2.90	10.12	-2.90	-5.36	-8.26	-19.85	2.90	10.12	-2.90	-5.79	-8.69
5755	1.04	0.27	-24.94	5.02	10.06	-2.90	-8.55	-11.45	-25.10	5.02	10.06	-2.90	-8.71	-11.61
5795	1.04	0.27	-24.42	5.03	10.06	-2.90	-8.02	-10.92	-24.85	5.03	10.06	-2.90	-8.45	-11.35

Sample Calculation:
PSD: Power Spectral Density
The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.
RBW Correction Factor = 10 * log (Specified bandwidth / Measured bandwidth)
PSD Result (Conducted) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty Factor + RBW Correction Factor
PSD Result (e.i.r.p.) = Conducted PSD Result + Antenna Gain

Maximum Power Spectral Density

Report No.	12804674H	
Test place	Ise EMC Lab. No.6 Measurement Room	
Date	September 3, 2019	November 15, 2019
Temperature / Humidity	24 deg. C / 64 % RH	24 deg. C / 40 % RH
Engineer	Takumi Shimada	Yuta Moriya
Mode	Tx 11ac-80	

Antenna 1+2

Applied limit: 15.407, mobile and portable client device

Tested Frequency	PSD (Conducted)						PSD (e.i.r.p.)					
	Antenna			Result	Limit	Margin	Antenna			Result	Limit	Margin
	1	2	Sum				1	2	Sum			
[MHz]	[mW/MHz]	[mW/MHz]	[mW/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]	[mW/MHz]	[mW/MHz]	[mW/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]
5210	0.11	0.11	0.22	-6.59	11.00	17.59	0.06	0.06	0.11	-9.49	17.00	26.49
5290	0.11	0.10	0.21	-6.78	11.00	17.78	0.06	0.05	0.11	-9.68	17.00	26.68
5530	0.11	0.11	0.21	-6.68	11.00	17.68	0.06	0.05	0.11	-9.58	17.00	26.58
5610	0.11	0.11	0.22	-6.50	11.00	17.50	0.06	0.06	0.11	-9.40	17.00	26.40
5690	0.12	0.12	0.24	-6.25	11.00	17.25	0.06	0.06	0.12	-9.15	17.00	26.15
5775	0.07	0.07	0.14	-8.61	30.00	38.61	0.03	0.04	0.07	-11.51	36.00	47.51

			Antenna 1						Antenna 2					
Tested Frequency	Duty Factor	RBW Correction Factor	PSD Reading	Cable Loss	Atten. Loss	Antenna Gain	PSD Result Cond.	PSD Result e.i.r.p.	PSD Reading	Cable Loss	Atten. Loss	Antenna Gain	PSD Result Cond.	PSD Result e.i.r.p.
[MHz]	[dB]	[dB]	[dBm/MHz]	[dB]	[dB]	[dBi]	[dBm/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]	[dB]	[dBi]	[dBm/MHz]	[dBm/MHz]
5210	1.79	0.00	-26.30	4.91	10.06	-2.90	-9.54	-12.44	-26.43	4.91	10.06	-2.90	-9.67	-12.57
5290	1.79	0.00	-26.38	4.93	10.06	-2.90	-9.60	-12.50	-26.76	4.93	10.06	-2.90	-9.98	-12.88
5530	1.79	0.00	-26.49	4.97	10.06	-2.90	-9.67	-12.57	-26.54	4.97	10.06	-2.90	-9.72	-12.62
5610	1.79	0.00	-26.27	4.99	10.06	-2.90	-9.43	-12.33	-26.43	4.99	10.06	-2.90	-9.59	-12.49
5690	1.79	0.00	-24.00	2.90	10.12	-2.90	-9.19	-12.09	-24.15	2.90	10.12	-2.90	-9.34	-12.24
5775	1.79	0.27	-28.94	5.02	10.06	-2.90	-11.80	-14.70	-28.58	5.02	10.06	-2.90	-11.44	-14.34

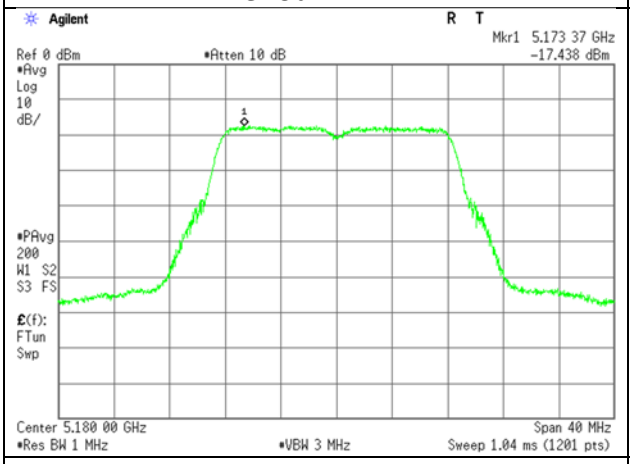
Sample Calculation:
PSD: Power Spectral Density
The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.
RBW Correction Factor = 10 * log (Specified bandwidth / Measured bandwidth)
PSD Result (Conducted) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty Factor + RBW Correction Factor
PSD Result (e.i.r.p.) = Conducted PSD Result + Antenna Gain

Maximum Power Spectral Density

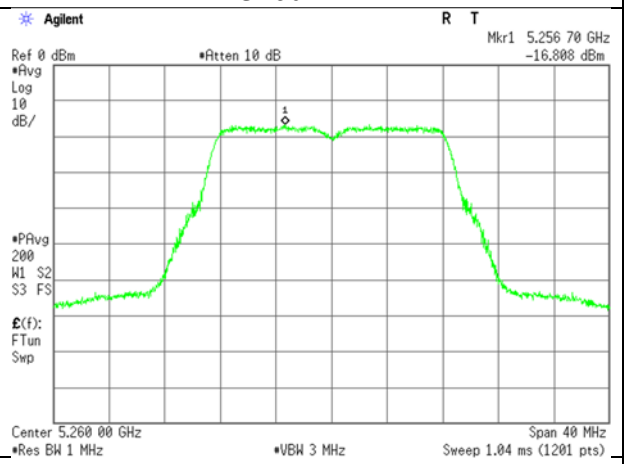
Report No.	12804674H
Test place	Ise EMC Lab. No.6 Measurement Room
Date	September 3, 2019
Temperature / Humidity	24 deg. C / 64 % RH
Engineer	Takumi Shimada
Mode	Tx 11a

11a, Antenna 1

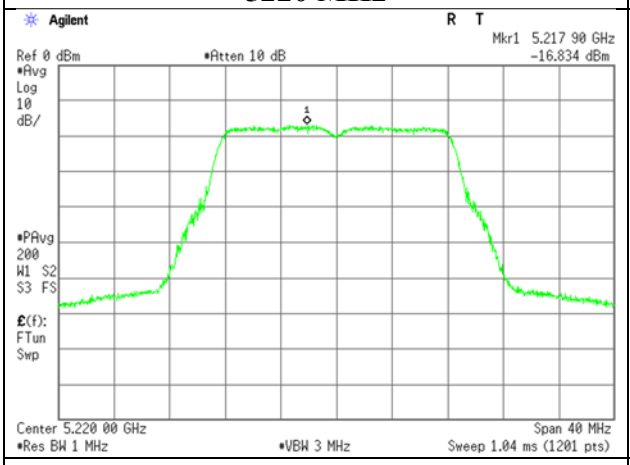
5180 MHz



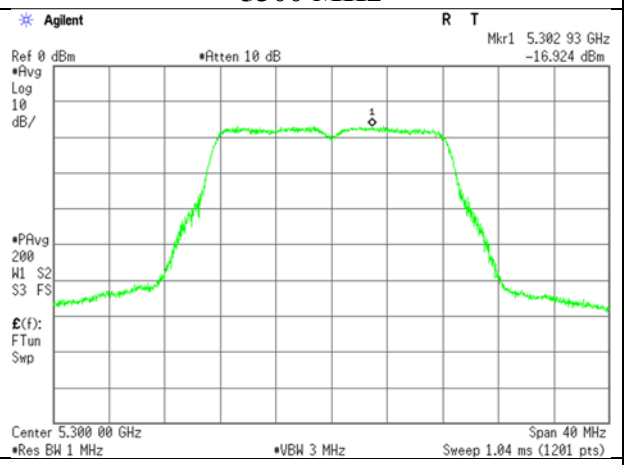
5260 MHz



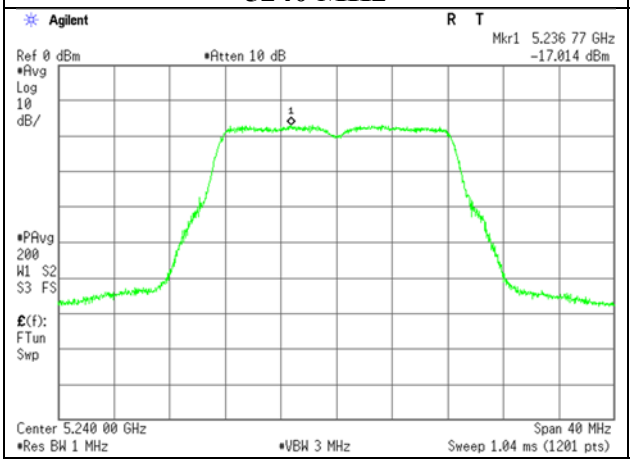
5220 MHz



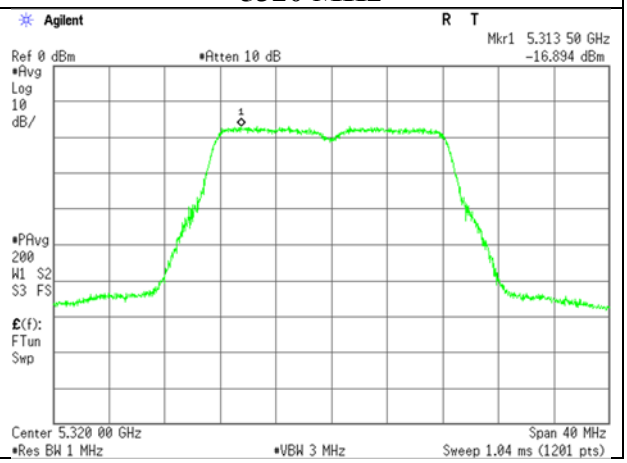
5300 MHz



5240 MHz



5320 MHz

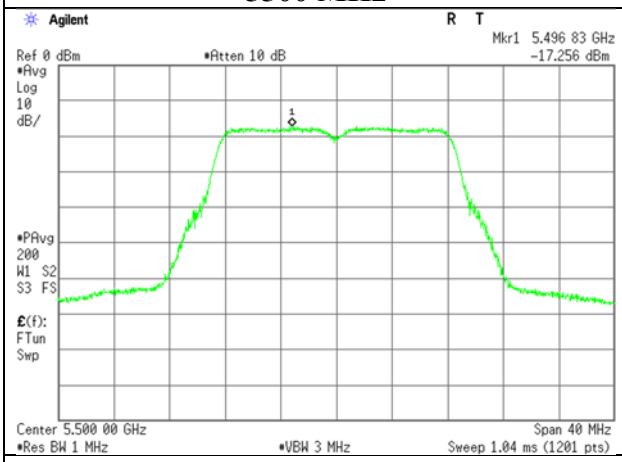


Maximum Power Spectral Density

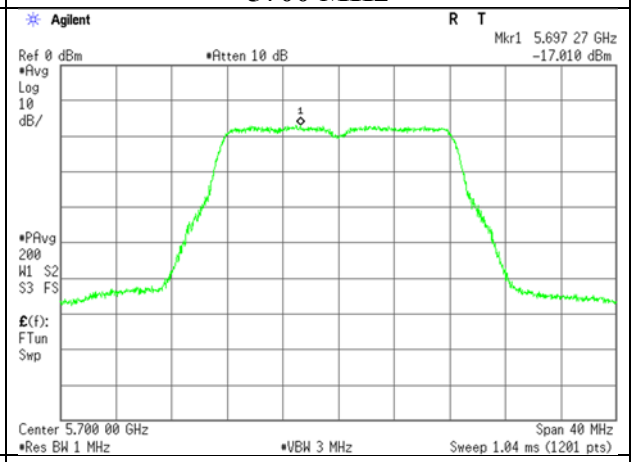
Report No.	12804674H	
Test place	Ise EMC Lab. No.6 Measurement Room	
Date	September 3, 2019	November 15, 2019
Temperature / Humidity	24 deg. C / 64 % RH	24 deg. C / 40 % RH
Engineer	Takumi Shimada	Yuta Moriya
Mode	Tx 11a	

11a, Antenna 1

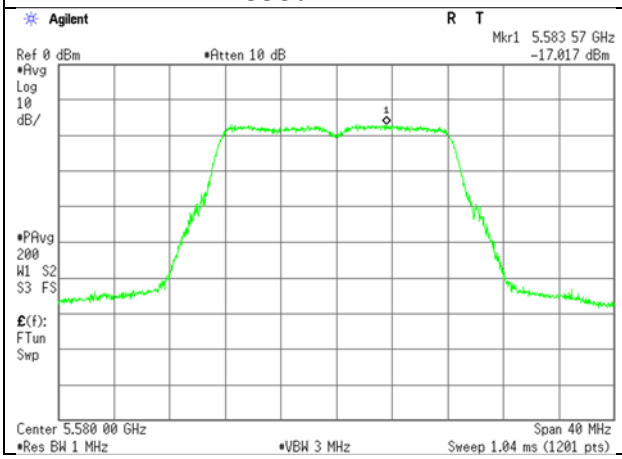
5500 MHz



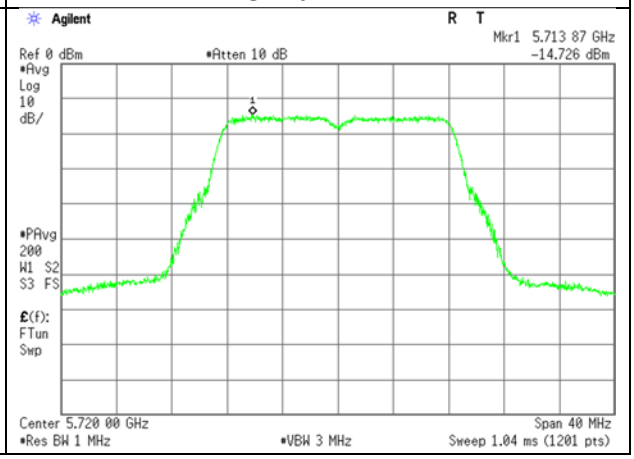
5700 MHz



5580 MHz



5720 MHz

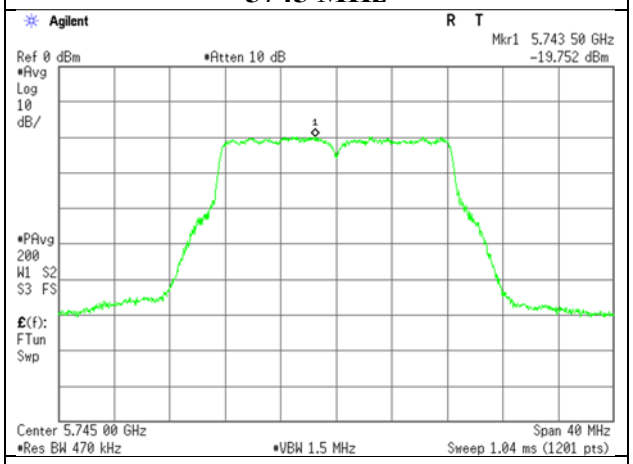


Maximum Power Spectral Density

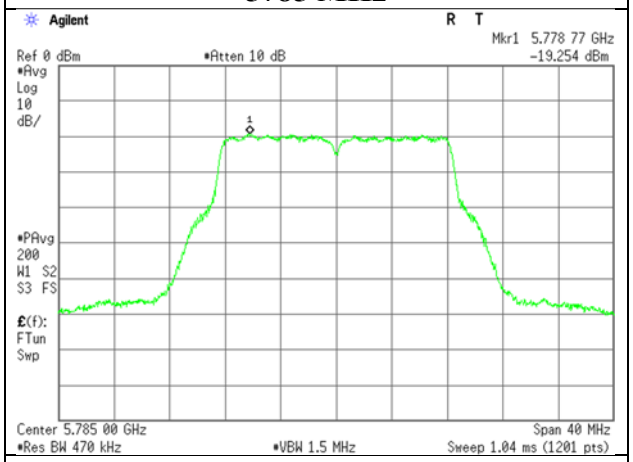
Report No.	12804674H
Test place	Ise EMC Lab. No.6 Measurement Room
Date	September 3, 2019
Temperature / Humidity	24 deg. C / 64 % RH
Engineer	Takumi Shimada
Mode	Tx 11a

11a, Antenna 1

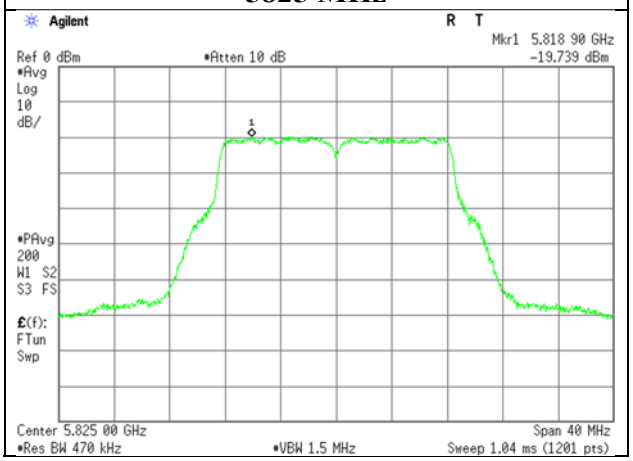
5745 MHz



5785 MHz



5825 MHz

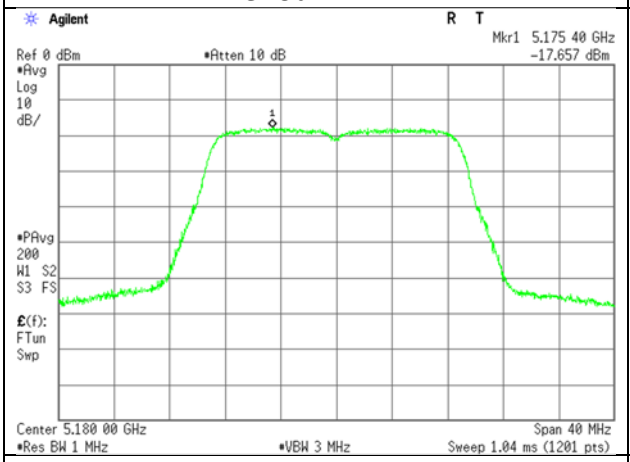


Maximum Power Spectral Density

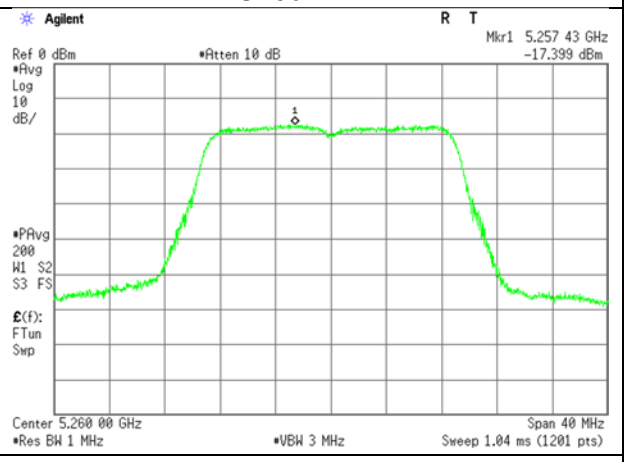
Report No.	12804674H
Test place	Ise EMC Lab. No.6 Measurement Room
Date	September 3, 2019
Temperature / Humidity	24 deg. C / 64 % RH
Engineer	Takumi Shimada
Mode	Tx 11n-20

11n-20, Antenna 1

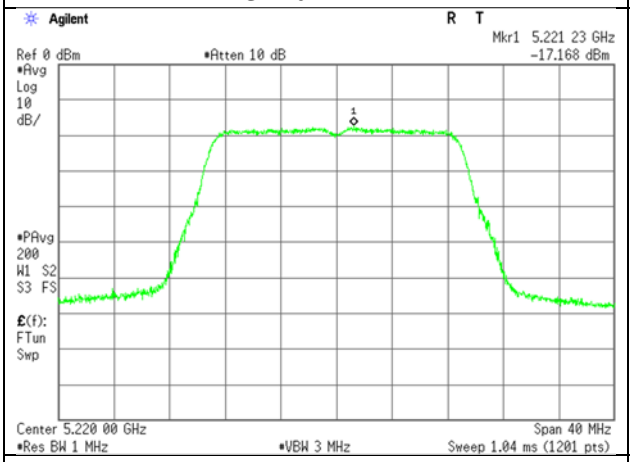
5180 MHz



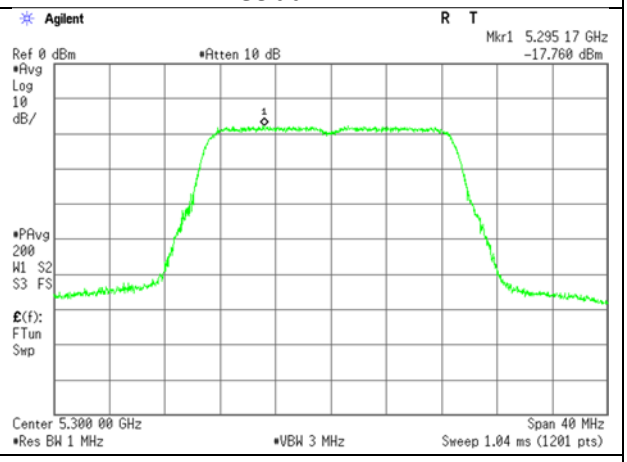
5260 MHz



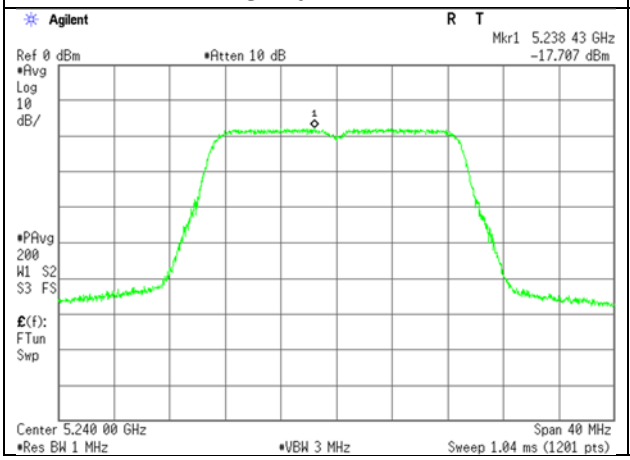
5220 MHz



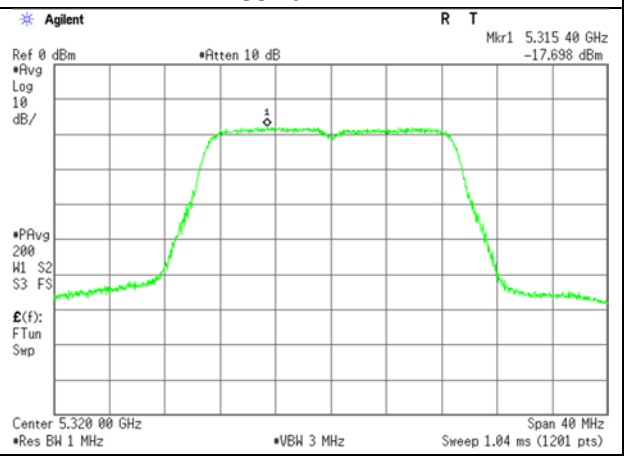
5300 MHz



5240 MHz



5320 MHz

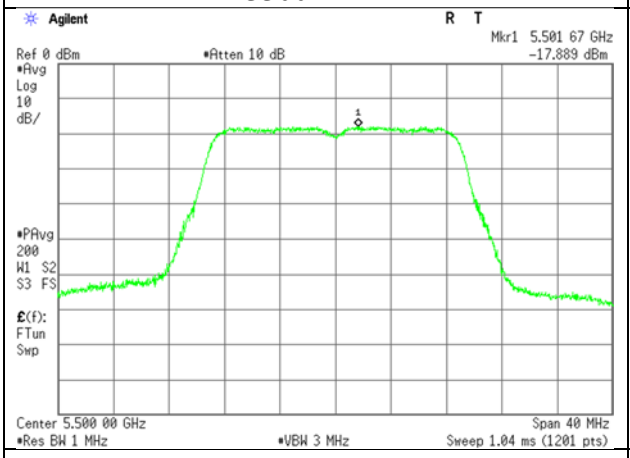


Maximum Power Spectral Density

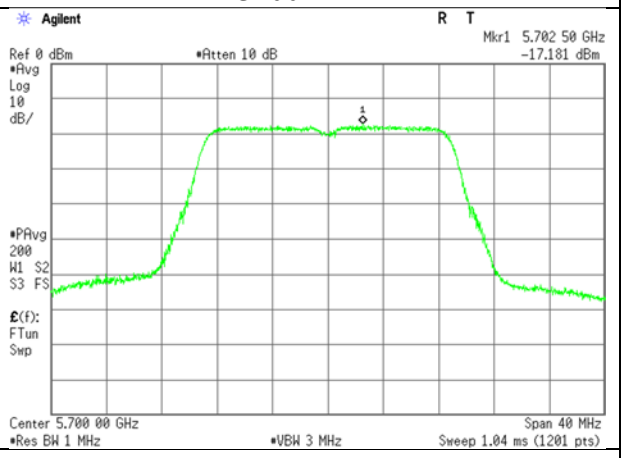
Report No.	12804674H	
Test place	Ise EMC Lab. No.6 Measurement Room	
Date	September 3, 2019	November 15, 2019
Temperature / Humidity	24 deg. C / 64 % RH	24 deg. C / 40 % RH
Engineer	Takumi Shimada	Yuta Moriya
Mode	Tx 11n-20	

11n-20, Antenna 1

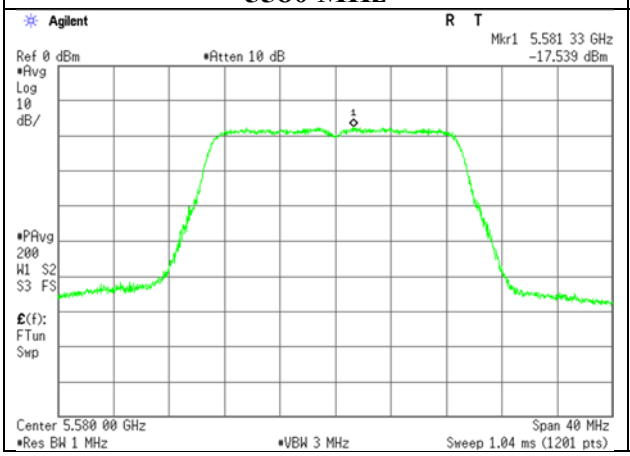
5500 MHz



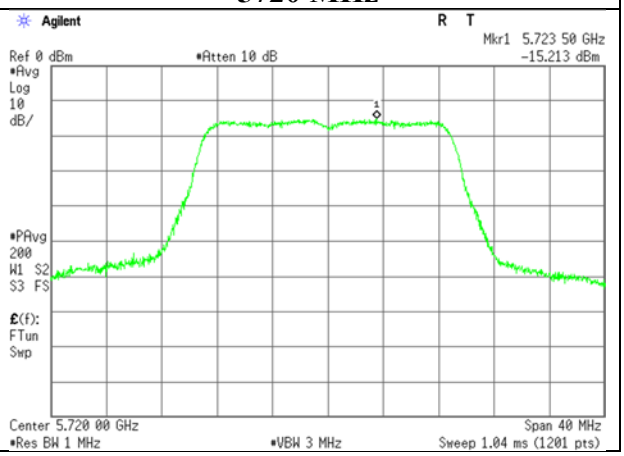
5700 MHz



5580 MHz



5720 MHz

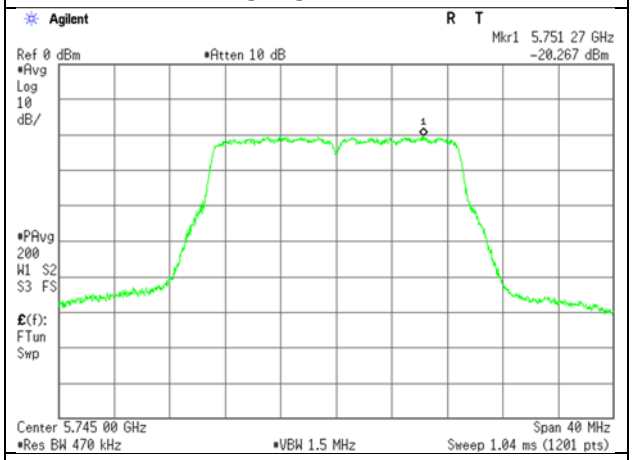


Maximum Power Spectral Density

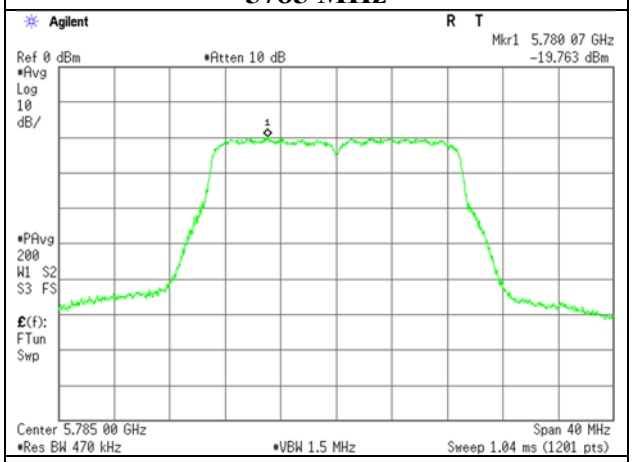
Report No.	12804674H
Test place	Ise EMC Lab. No.6 Measurement Room
Date	September 3, 2019
Temperature / Humidity	24 deg. C / 64 % RH
Engineer	Takumi Shimada
Mode	Tx 11n-20

11n-20, Antenna 1

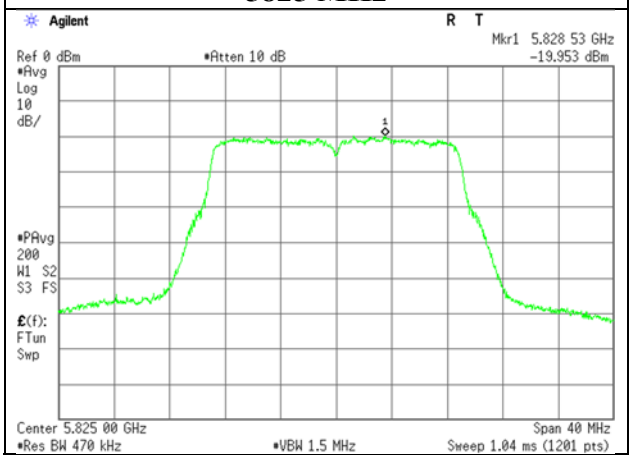
5745 MHz



5785 MHz



5825 MHz

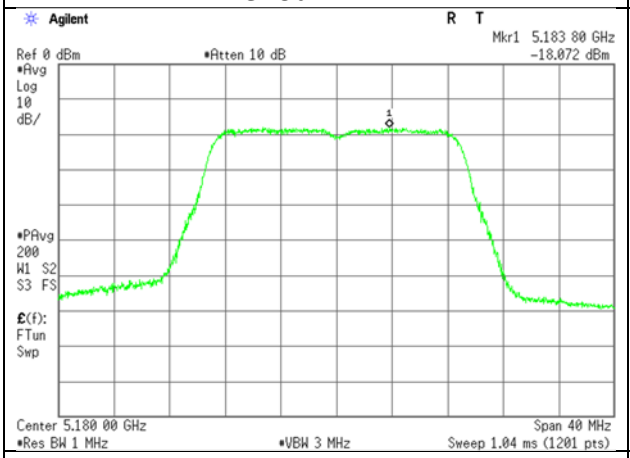


Maximum Power Spectral Density

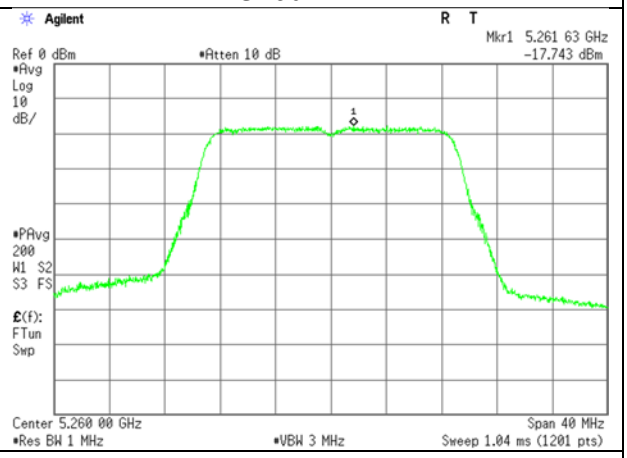
Report No.	12804674H
Test place	Ise EMC Lab. No.6 Measurement Room
Date	September 3, 2019
Temperature / Humidity	24 deg. C / 64 % RH
Engineer	Takumi Shimada
Mode	Tx 11n-20

11n-20, Antenna 2

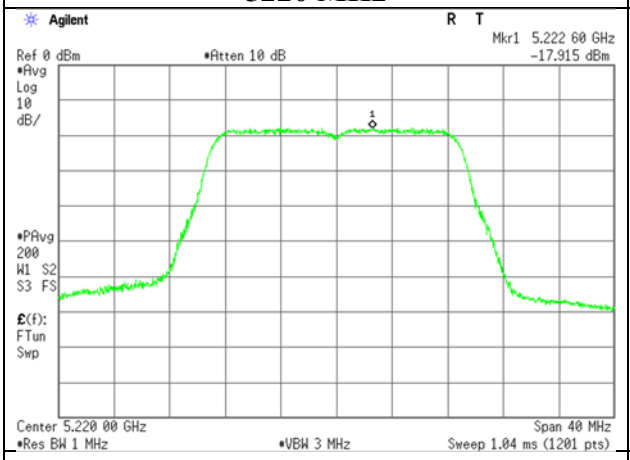
5180 MHz



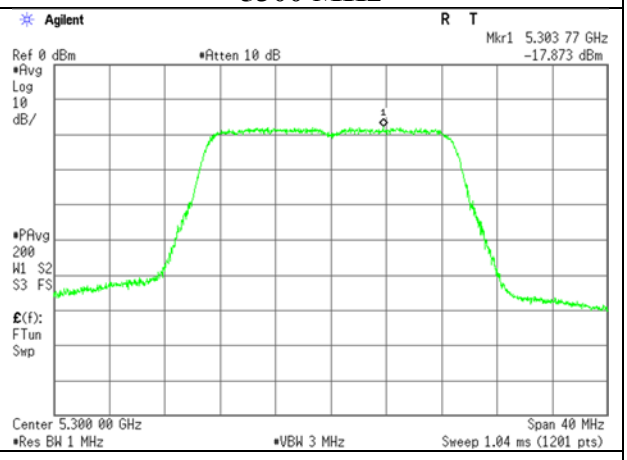
5260 MHz



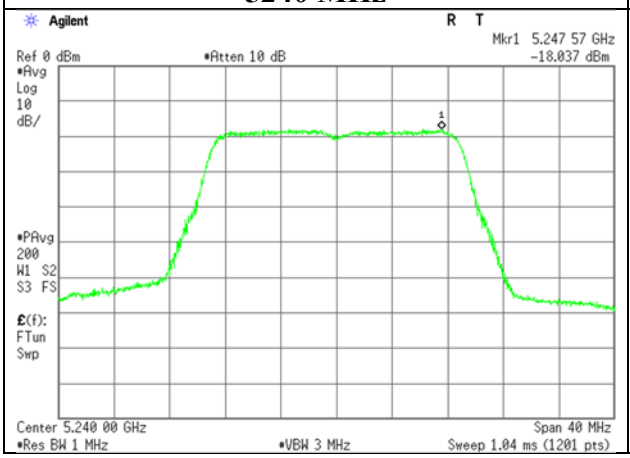
5220 MHz



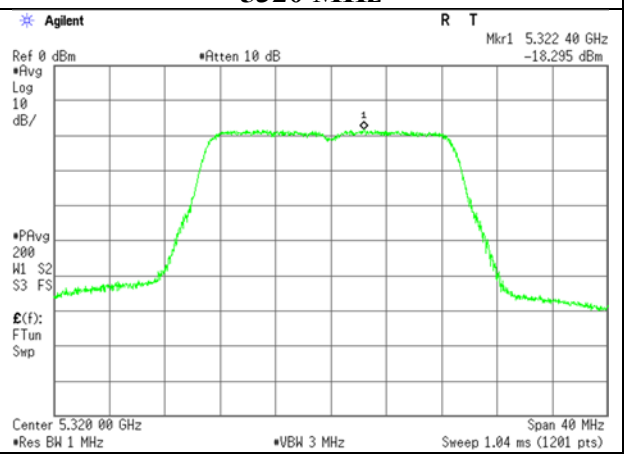
5300 MHz



5240 MHz



5320 MHz

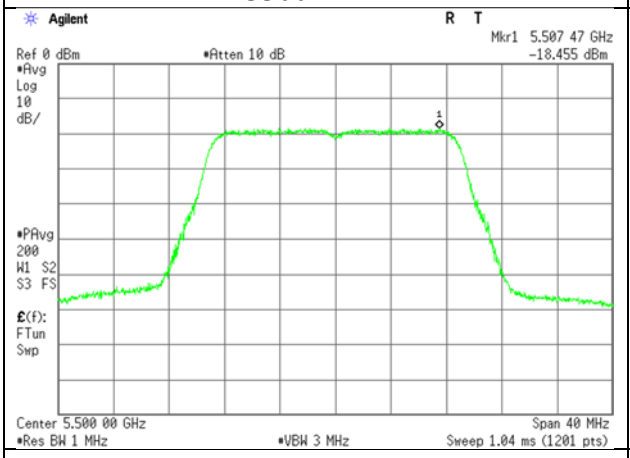


Maximum Power Spectral Density

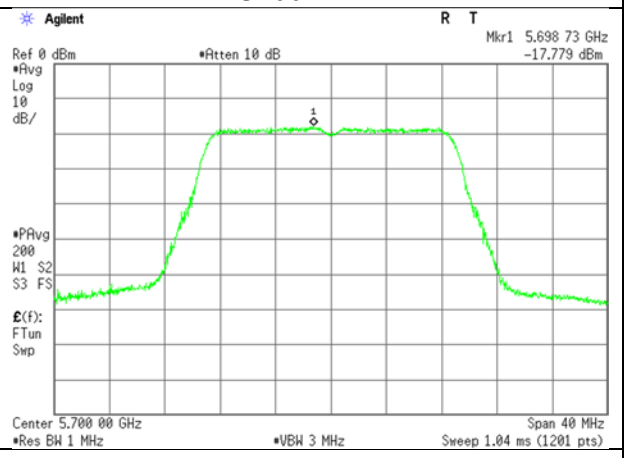
Report No.	12804674H	
Test place	Ise EMC Lab. No.6 Measurement Room	
Date	September 3, 2019	November 15, 2019
Temperature / Humidity	24 deg. C / 64 % RH	24 deg. C / 40 % RH
Engineer	Takumi Shimada	Yuta Moriya
Mode	Tx 11n-20	

11n-20, Antenna 2

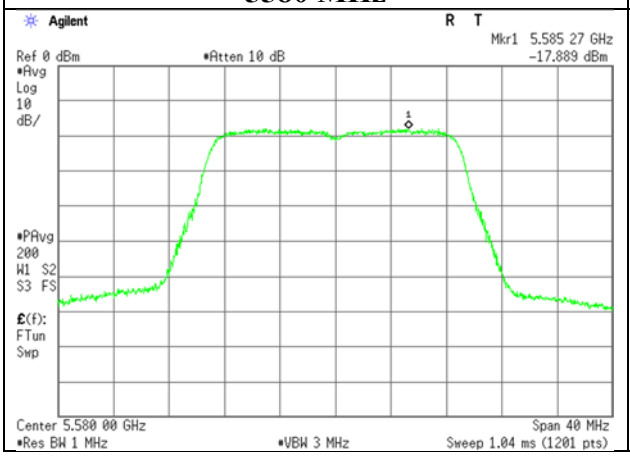
5500 MHz



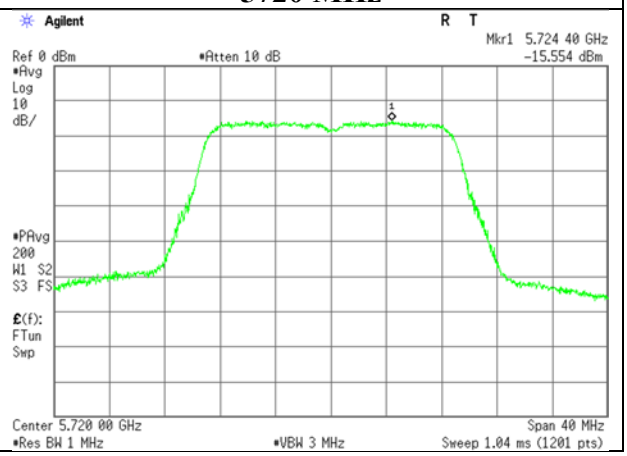
5700 MHz



5580 MHz



5720 MHz

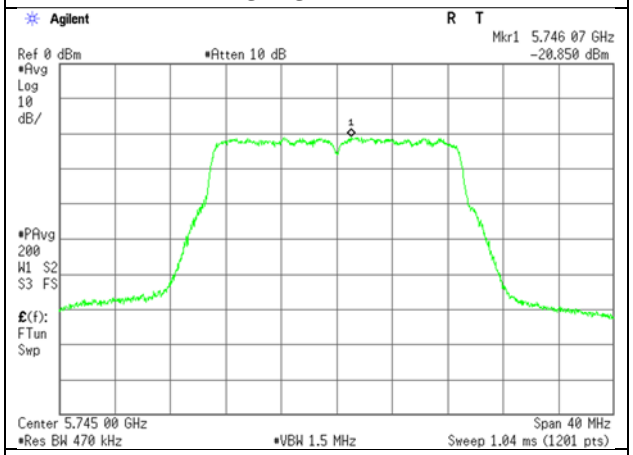


Maximum Power Spectral Density

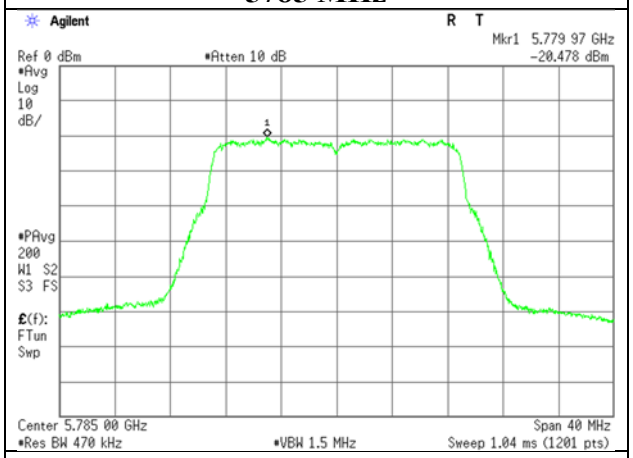
Report No.	12804674H
Test place	Ise EMC Lab. No.6 Measurement Room
Date	September 3, 2019
Temperature / Humidity	24 deg. C / 64 % RH
Engineer	Takumi Shimada
Mode	Tx 11n-20

11n-20, Antenna 2

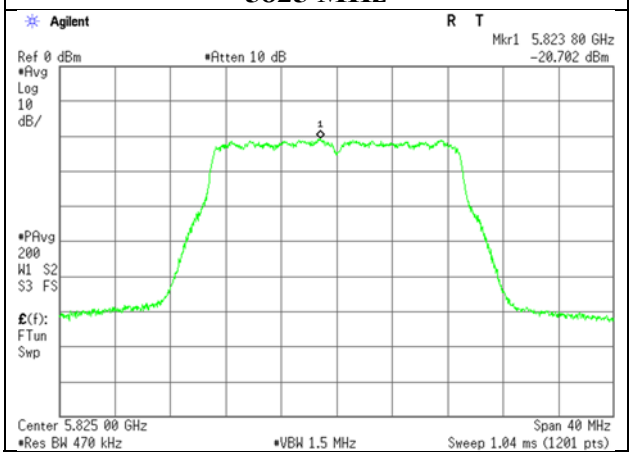
5745 MHz



5785 MHz



5825 MHz

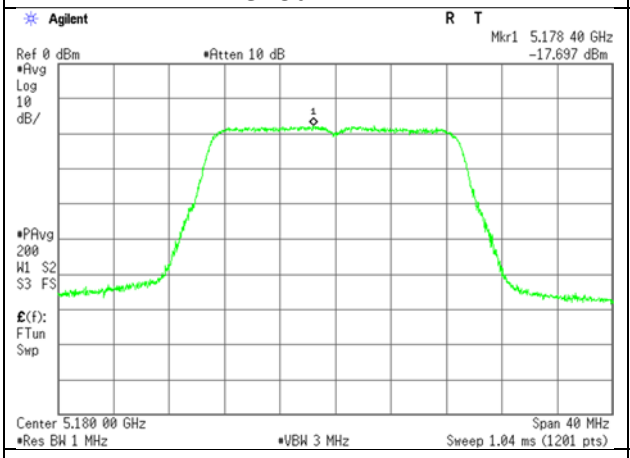


Maximum Power Spectral Density

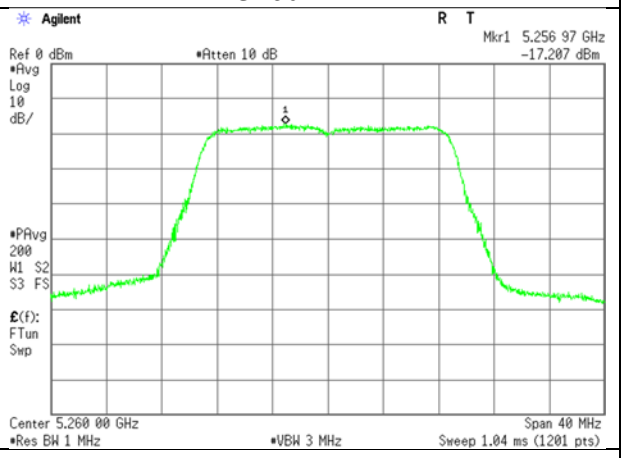
Report No.	12804674H
Test place	Ise EMC Lab. No.6 Measurement Room
Date	September 3, 2019
Temperature / Humidity	24 deg. C / 64 % RH
Engineer	Takumi Shimada
Mode	Tx 11ac-20

11ac-20, Antenna 1

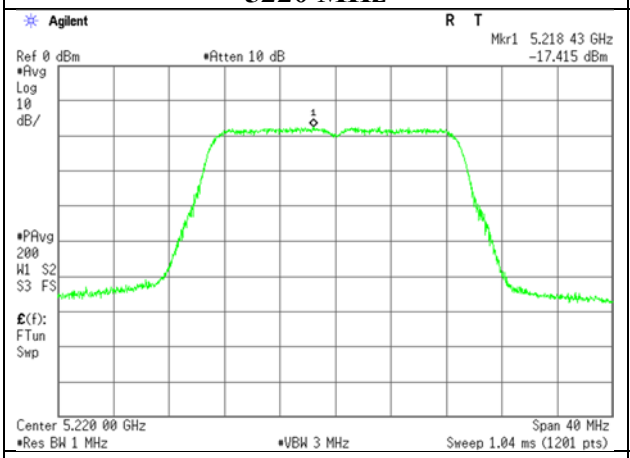
5180 MHz



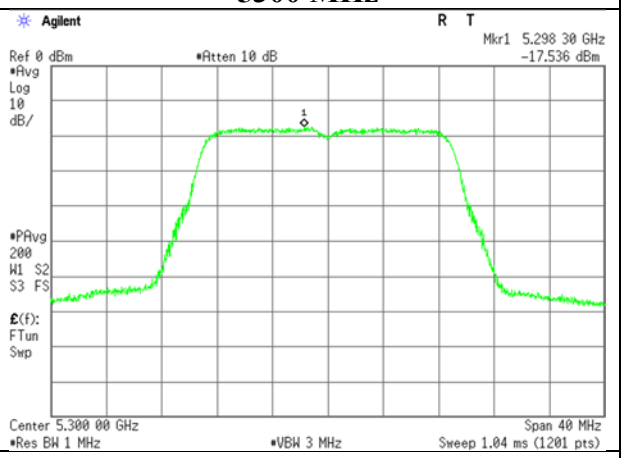
5260 MHz



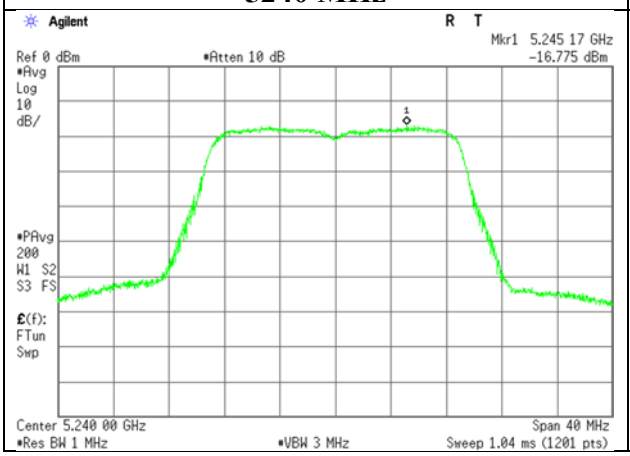
5220 MHz



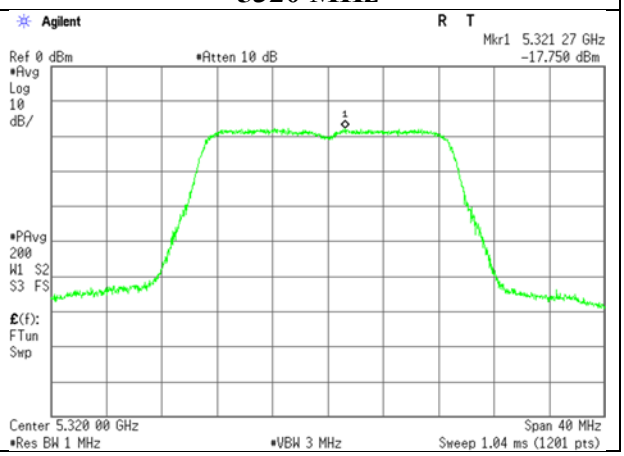
5300 MHz



5240 MHz



5320 MHz

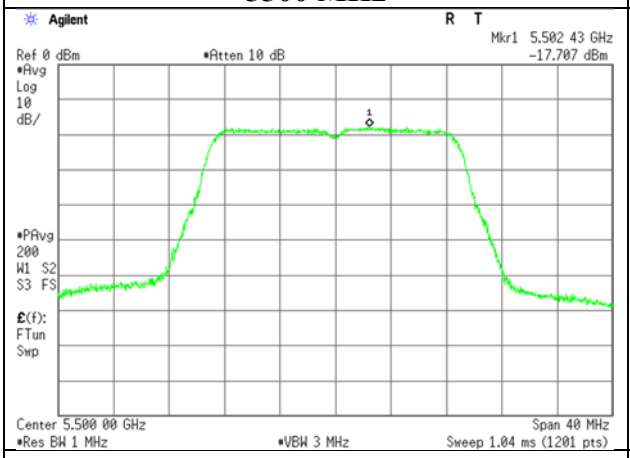


Maximum Power Spectral Density

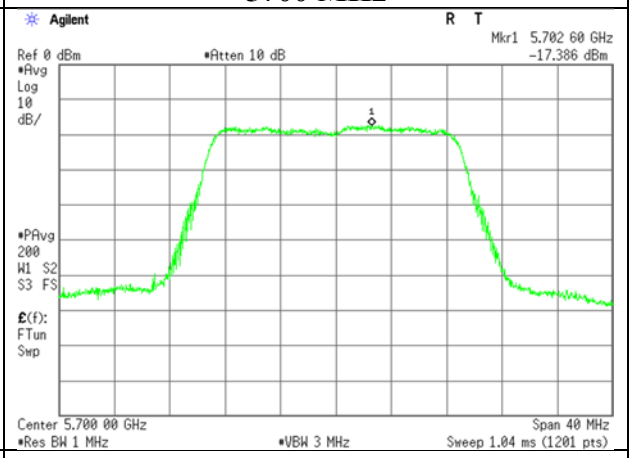
Report No.	12804674H	
Test place	Ise EMC Lab. No.6 Measurement Room	
Date	September 3, 2019	November 15, 2019
Temperature / Humidity	24 deg. C / 64 % RH	24 deg. C / 40 % RH
Engineer	Takumi Shimada	Yuta Moriya
Mode	Tx 11ac-20	

11ac-20, Antenna 1

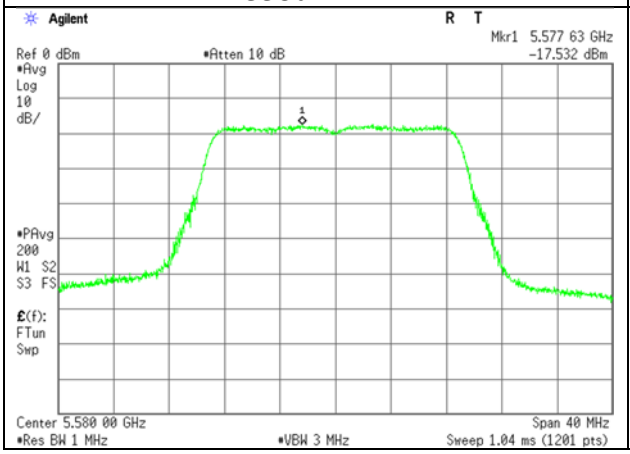
5500 MHz



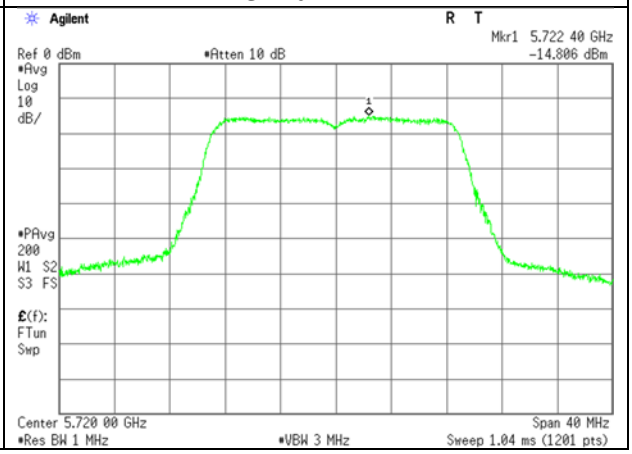
5700 MHz



5580 MHz



5720 MHz

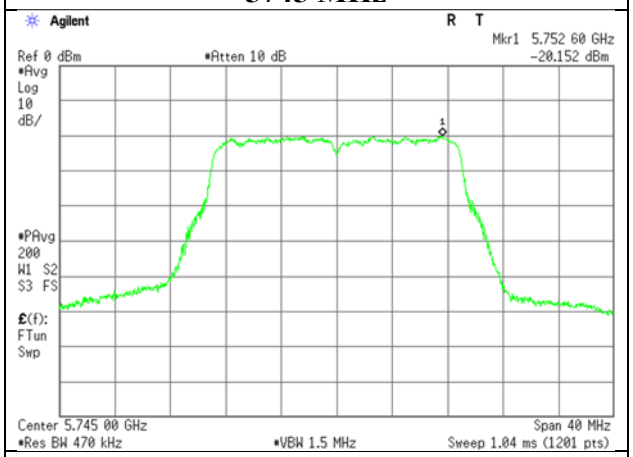


Maximum Power Spectral Density

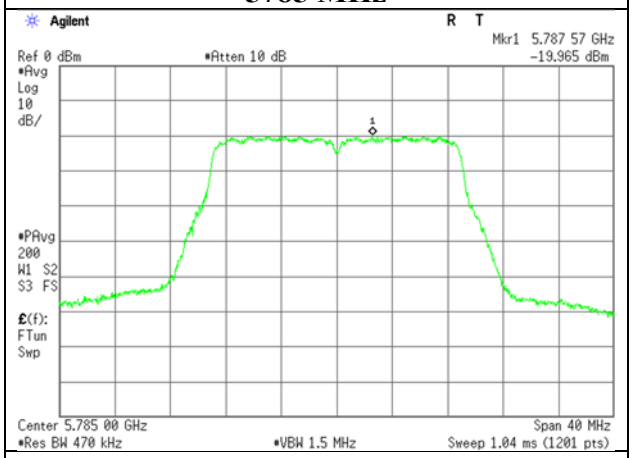
Report No.	12804674H
Test place	Ise EMC Lab. No.6 Measurement Room
Date	September 3, 2019
Temperature / Humidity	24 deg. C / 64 % RH
Engineer	Takumi Shimada
Mode	Tx 11ac-20

11ac-20, Antenna 1

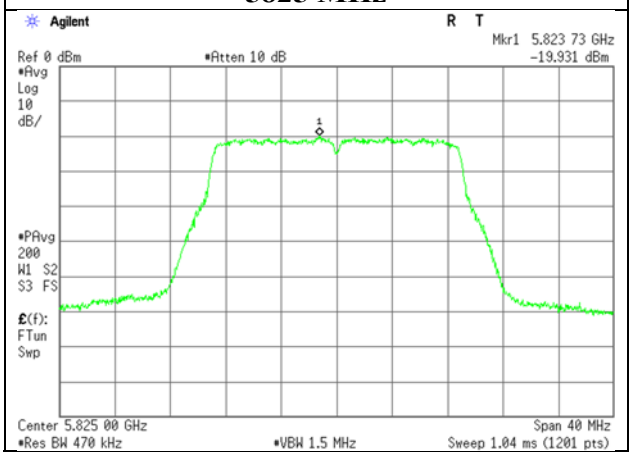
5745 MHz



5785 MHz



5825 MHz

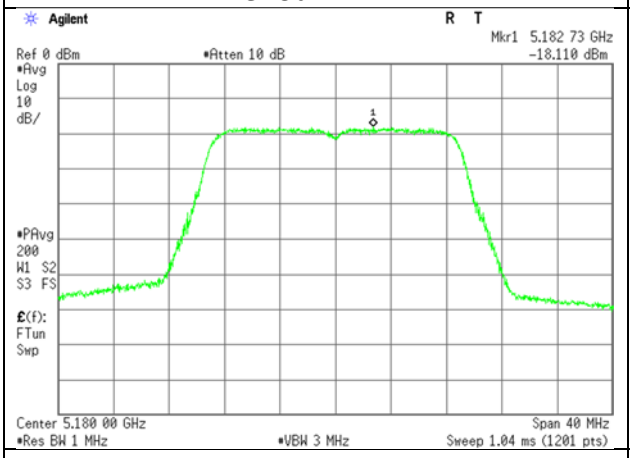


Maximum Power Spectral Density

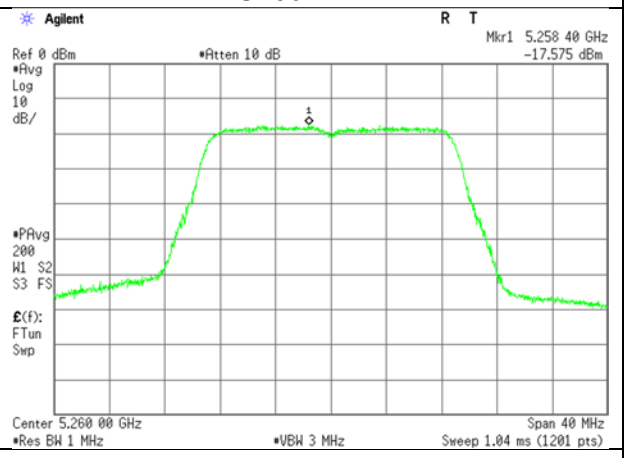
Report No.	12804674H
Test place	Ise EMC Lab. No.6 Measurement Room
Date	September 3, 2019
Temperature / Humidity	24 deg. C / 64 % RH
Engineer	Takumi Shimada
Mode	Tx 11ac-20

11ac-20, Antenna 2

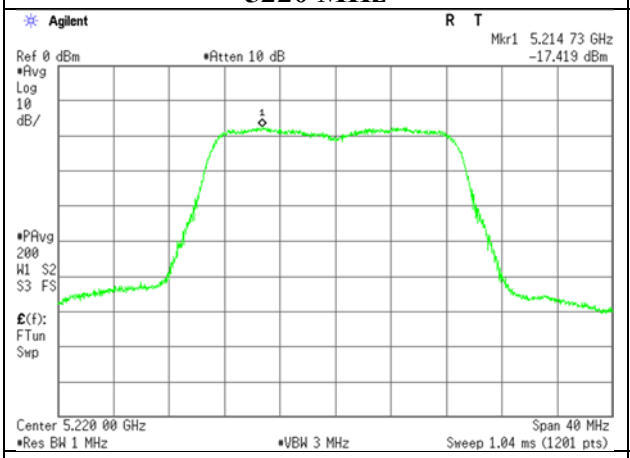
5180 MHz



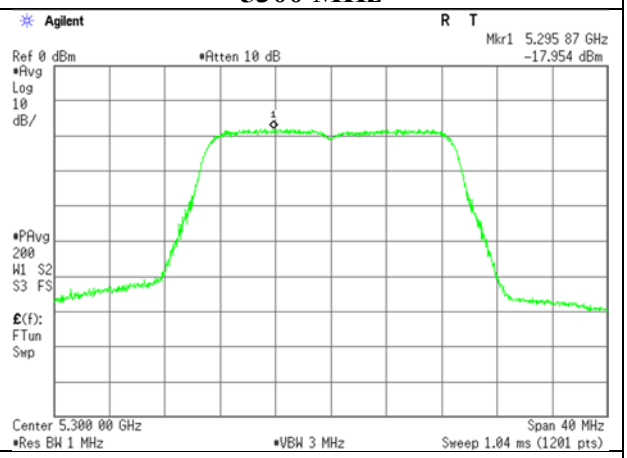
5260 MHz



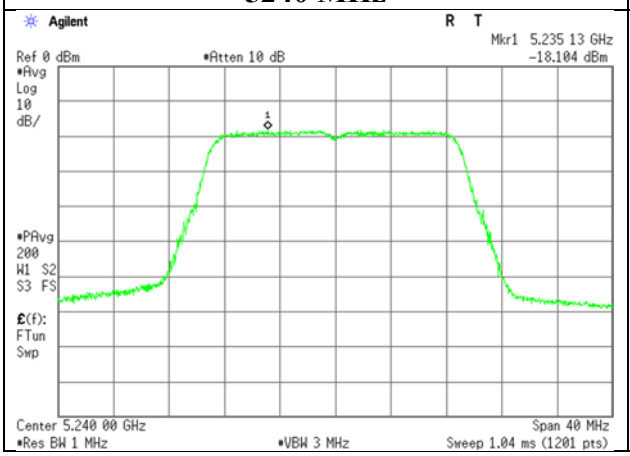
5220 MHz



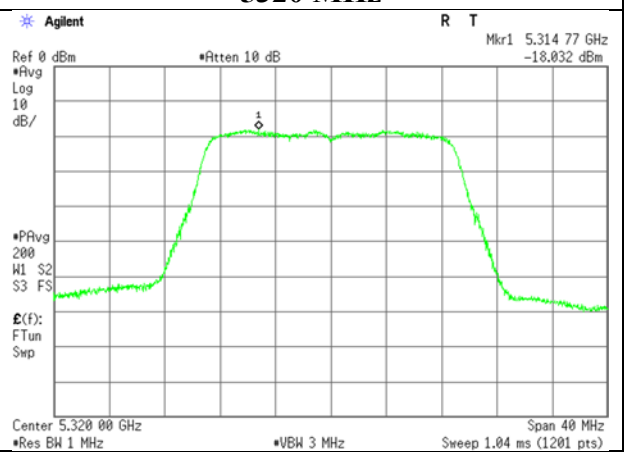
5300 MHz



5240 MHz



5320 MHz

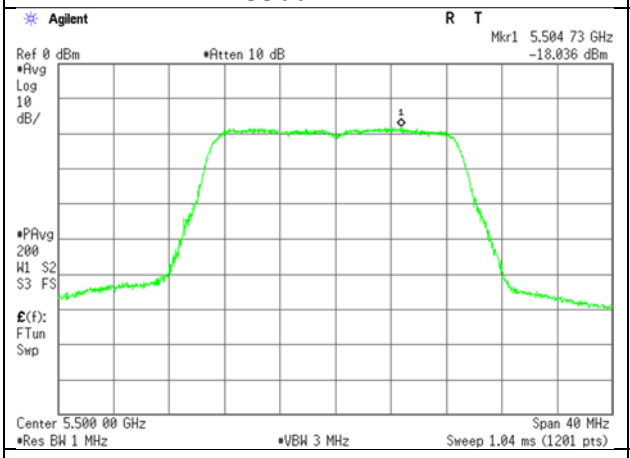


Maximum Power Spectral Density

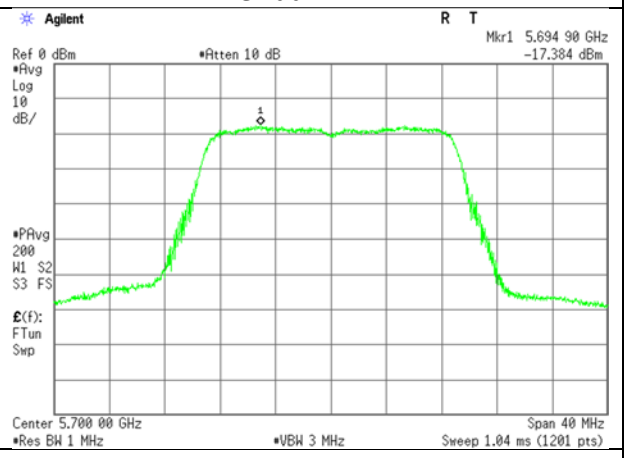
Report No.	12804674H	
Test place	Ise EMC Lab. No.6 Measurement Room	
Date	September 3, 2019	November 15, 2019
Temperature / Humidity	24 deg. C / 64 % RH	24 deg. C / 40 % RH
Engineer	Takumi Shimada	Yuta Moriya
Mode	Tx 11ac-20	

11ac-20, Antenna 2

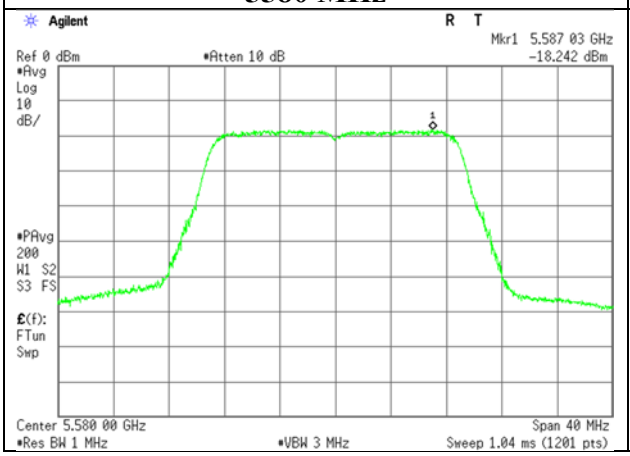
5500 MHz



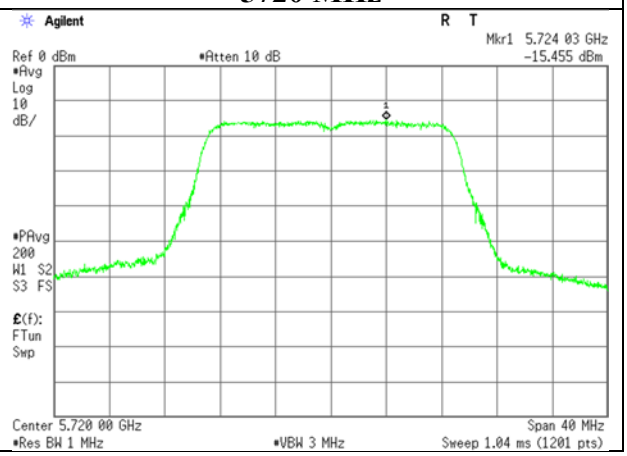
5700 MHz



5580 MHz



5720 MHz

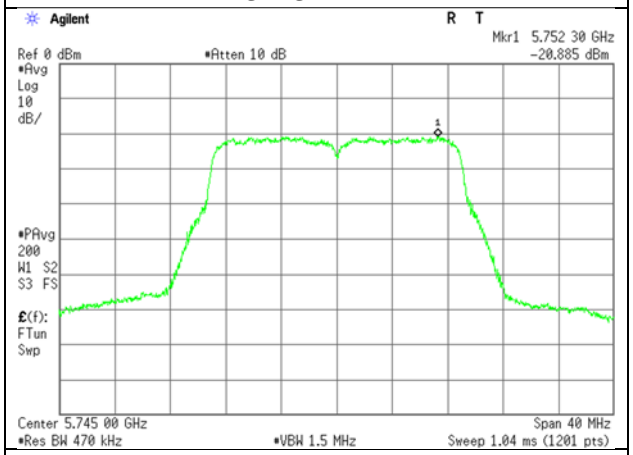


Maximum Power Spectral Density

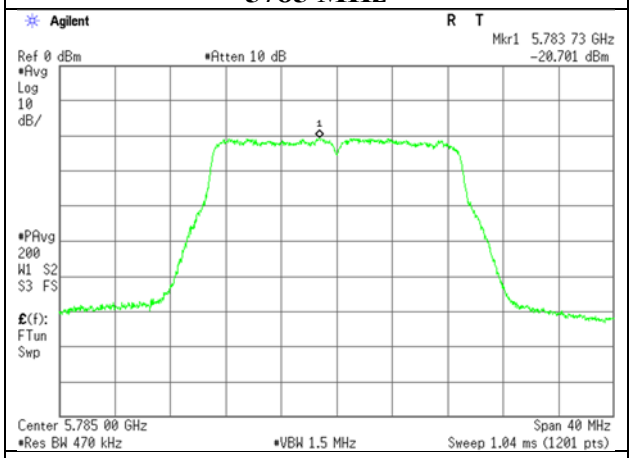
Report No.	12804674H
Test place	Ise EMC Lab. No.6 Measurement Room
Date	September 3, 2019
Temperature / Humidity	24 deg. C / 64 % RH
Engineer	Takumi Shimada
Mode	Tx 11ac-20

11ac-20, Antenna 2

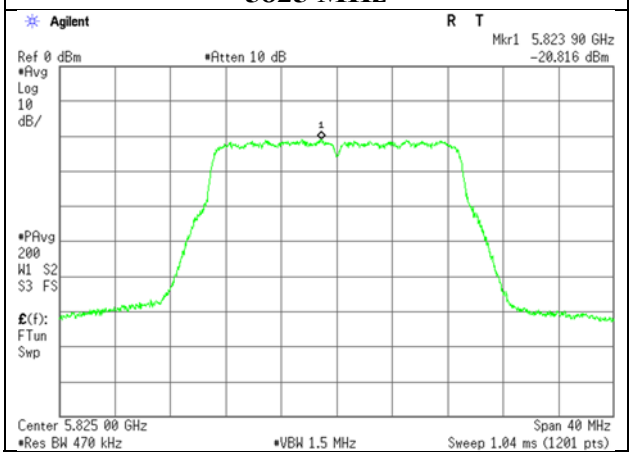
5745 MHz



5785 MHz



5825 MHz

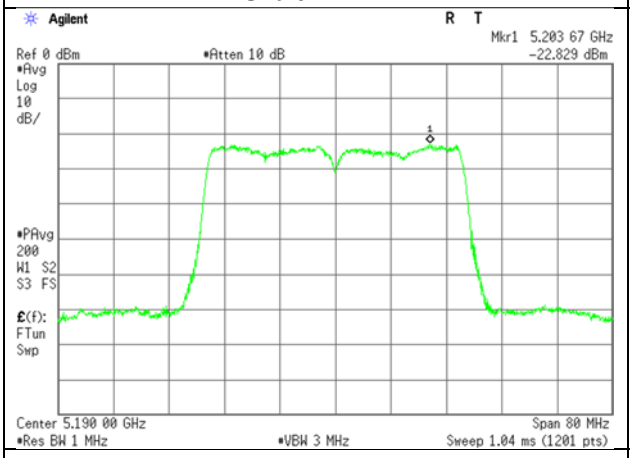


Maximum Power Spectral Density

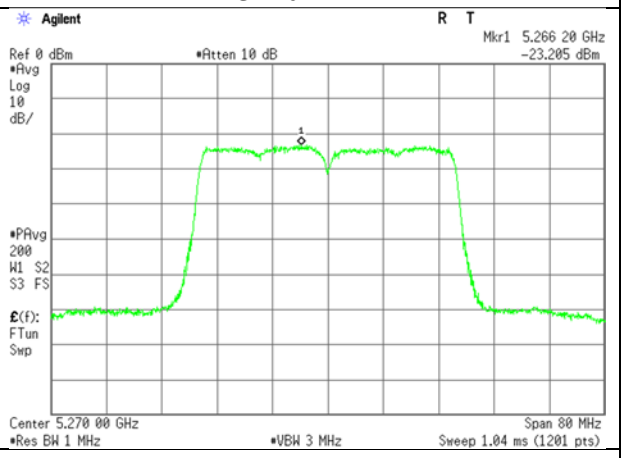
Report No.	12804674H
Test place	Ise EMC Lab. No.6 Measurement Room
Date	September 3, 2019
Temperature / Humidity	24 deg. C / 64 % RH
Engineer	Takumi Shimada
Mode	Tx 11n-40

11n-40, Antenna 1

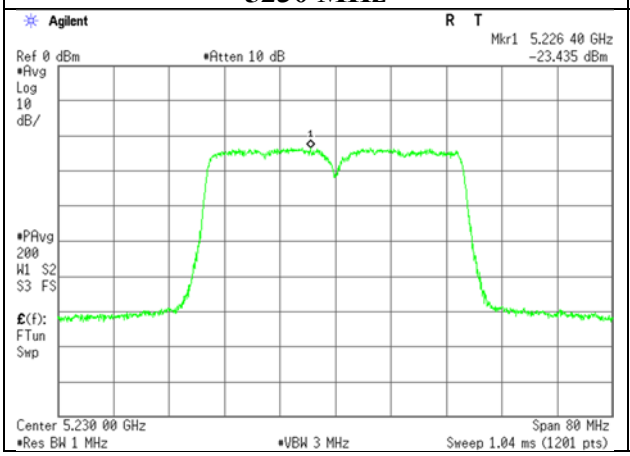
5190 MHz



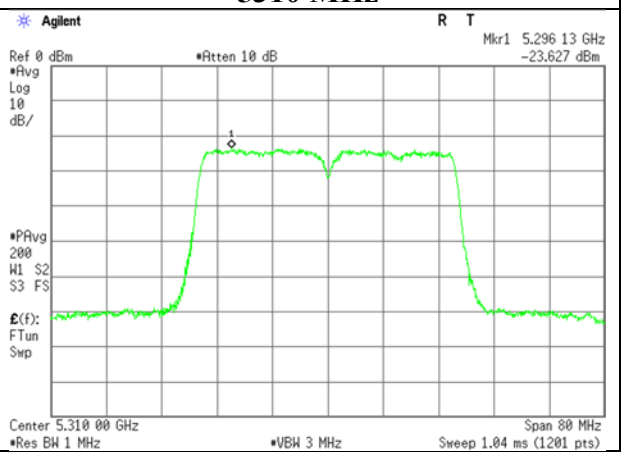
5270 MHz



5230 MHz



5310 MHz

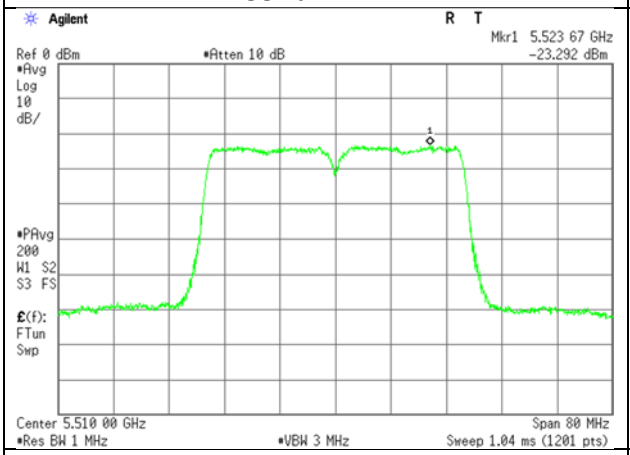


Maximum Power Spectral Density

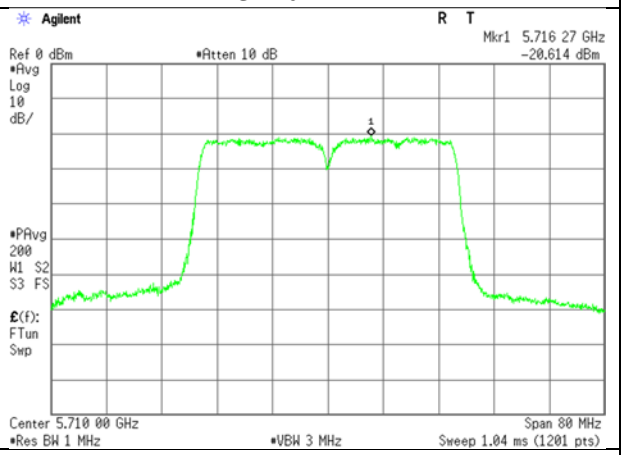
Report No.	12804674H	
Test place	Ise EMC Lab. No.6 Measurement Room	
Date	September 3, 2019	November 15, 2019
Temperature / Humidity	24 deg. C / 64 % RH	24 deg. C / 40 % RH
Engineer	Takumi Shimada	Yuta Moriya
Mode	Tx 11n-40	

11n-40, Antenna 1

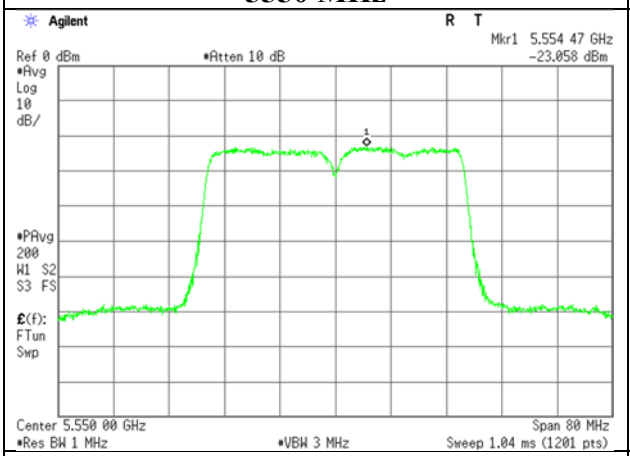
5510 MHz



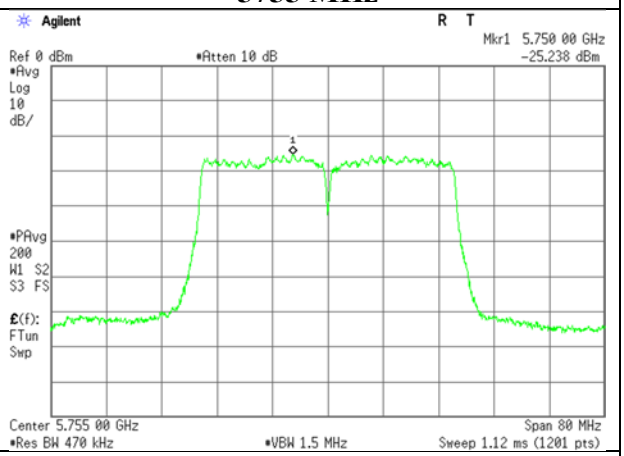
5710 MHz



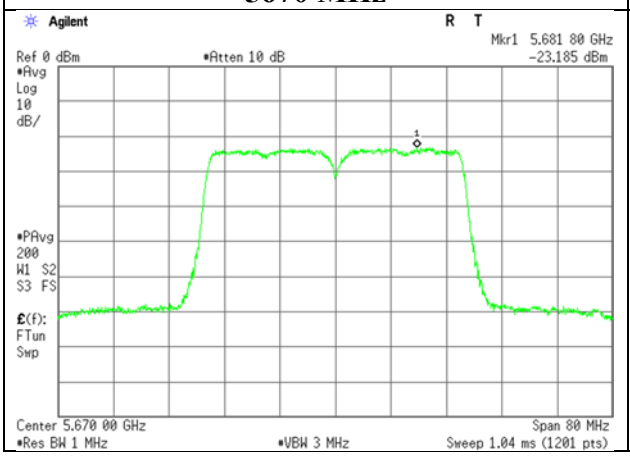
5550 MHz



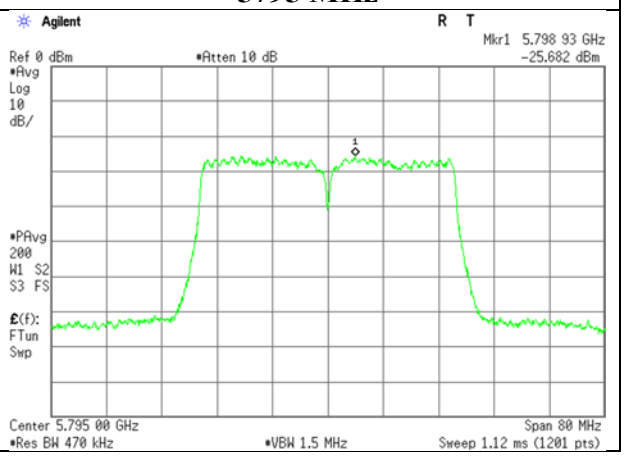
5755 MHz



5670 MHz



5795 MHz

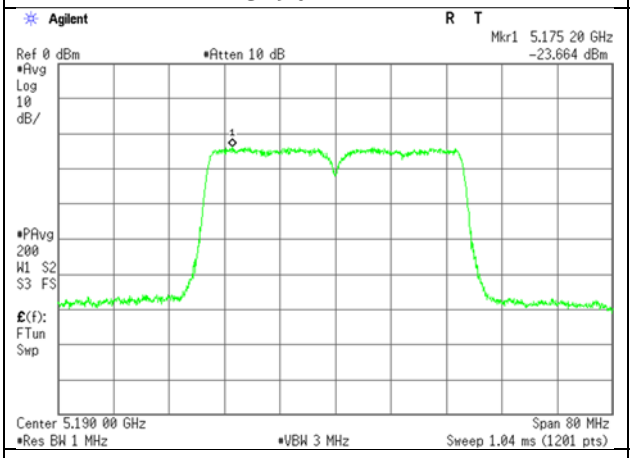


Maximum Power Spectral Density

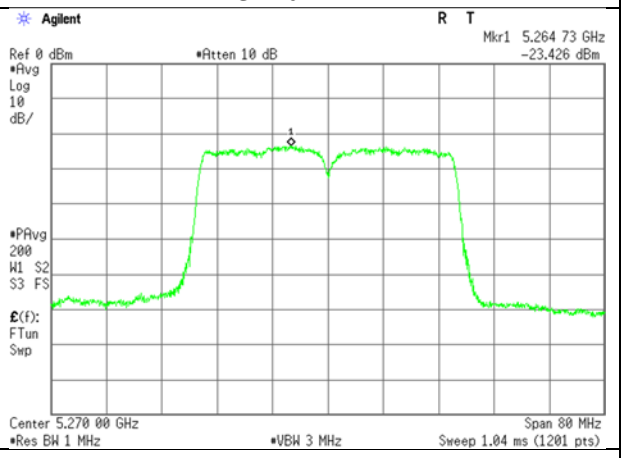
Report No.	12804674H
Test place	Ise EMC Lab. No.6 Measurement Room
Date	September 3, 2019
Temperature / Humidity	24 deg. C / 64 % RH
Engineer	Takumi Shimada
Mode	Tx 11n-40

11n-40, Antenna 2

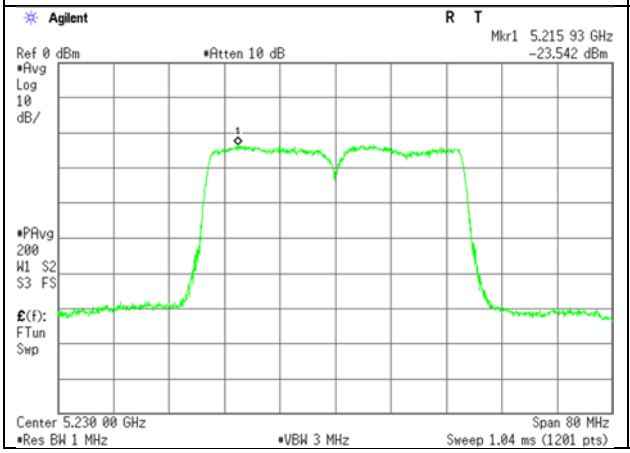
5190 MHz



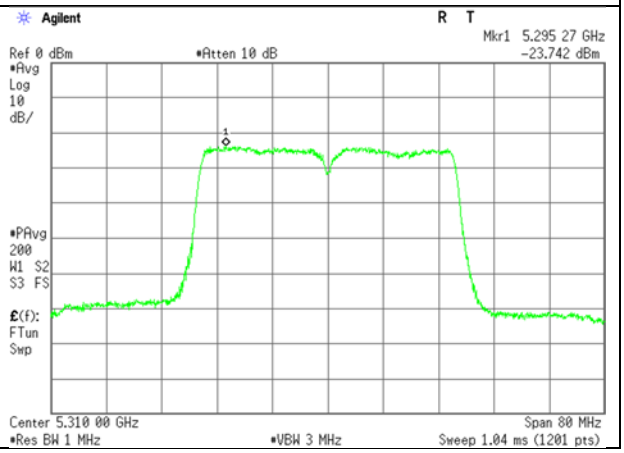
5270 MHz



5230 MHz



5310 MHz

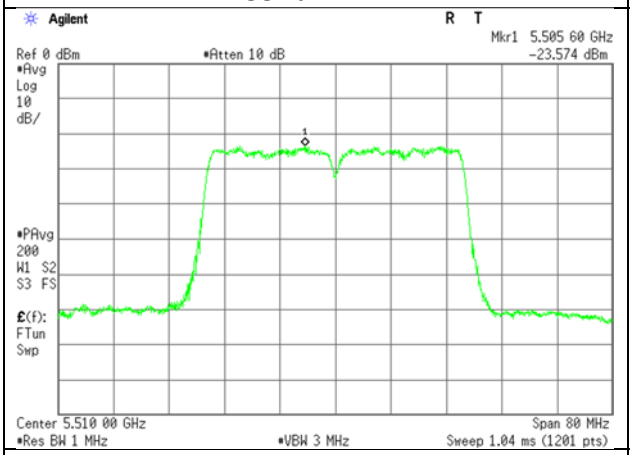


Maximum Power Spectral Density

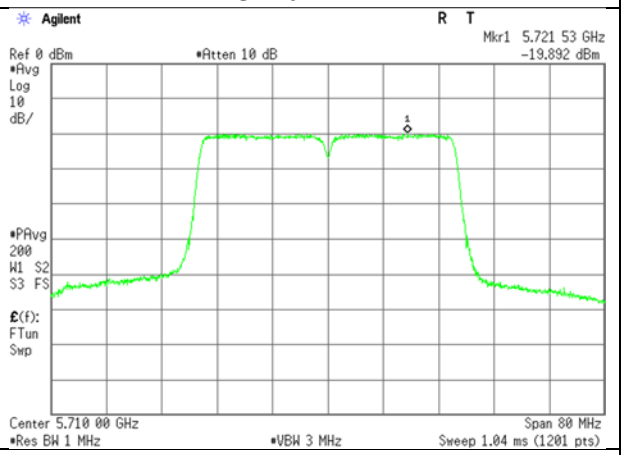
Report No.	12804674H	
Test place	Ise EMC Lab. No.6 Measurement Room	
Date	September 3, 2019	November 15, 2019
Temperature / Humidity	24 deg. C / 64 % RH	24 deg. C / 40 % RH
Engineer	Takumi Shimada	Yuta Moriya
Mode	Tx 11n-40	

11n-40, Antenna 2

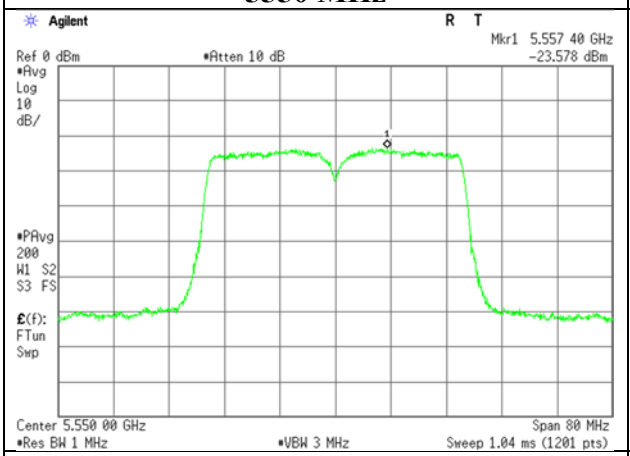
5510 MHz



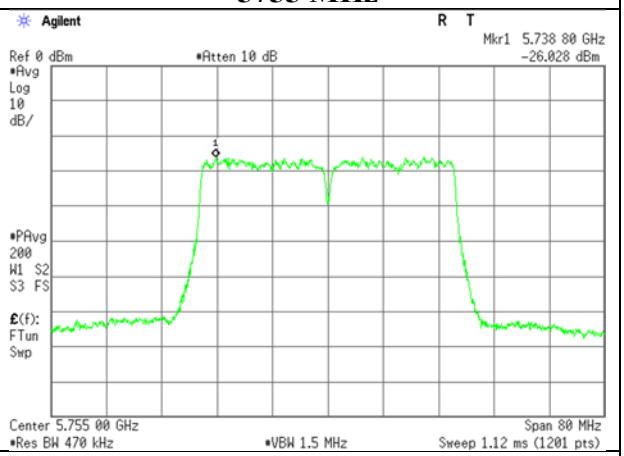
5710 MHz



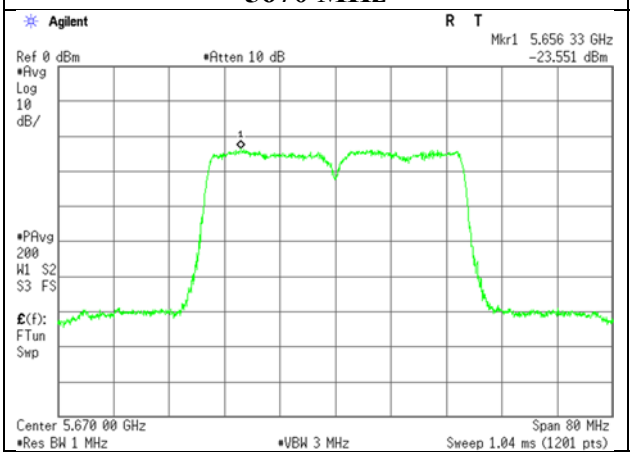
5550 MHz



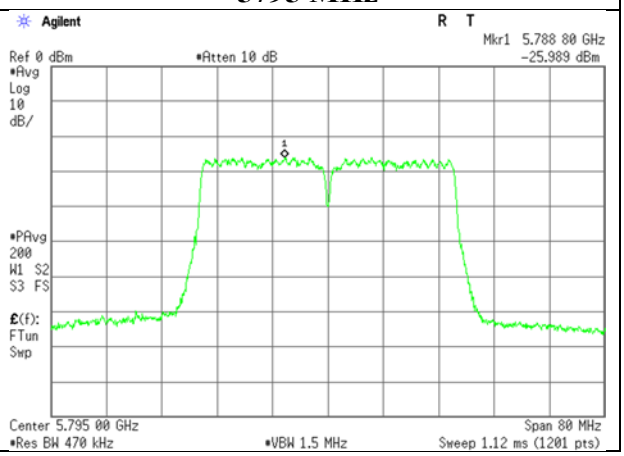
5755 MHz



5670 MHz



5795 MHz

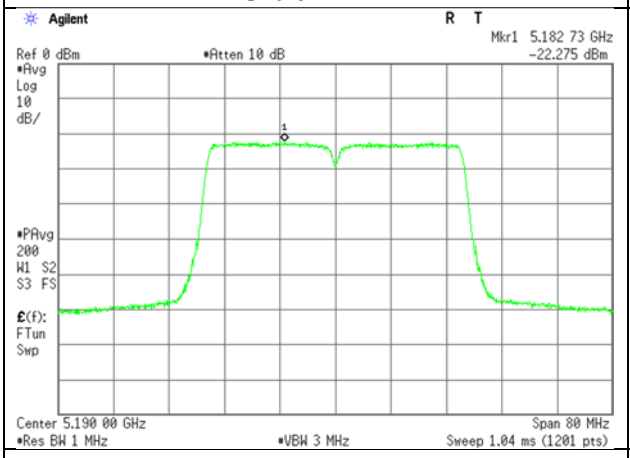


Maximum Power Spectral Density

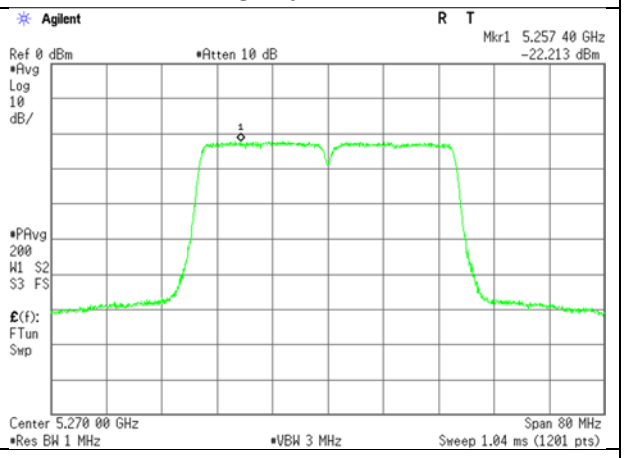
Report No.	12804674H
Test place	Ise EMC Lab. No.6 Measurement Room
Date	September 3, 2019
Temperature / Humidity	24 deg. C / 64 % RH
Engineer	Takumi Shimada
Mode	Tx 11ac-40

11ac-40, Antenna 1

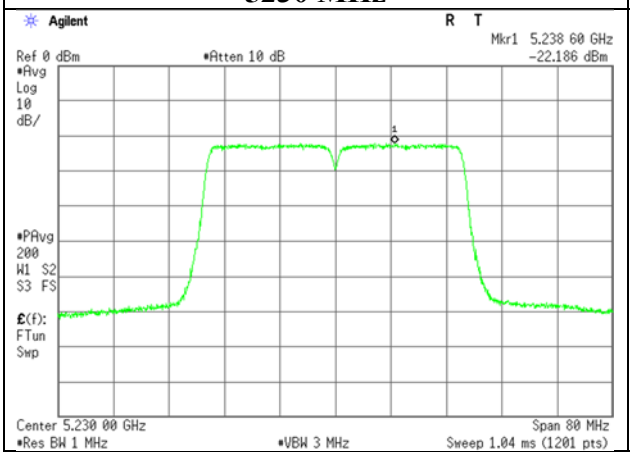
5190 MHz



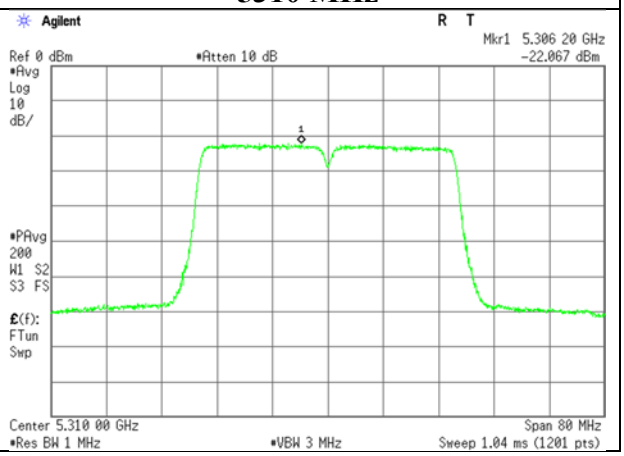
5270 MHz



5230 MHz



5310 MHz

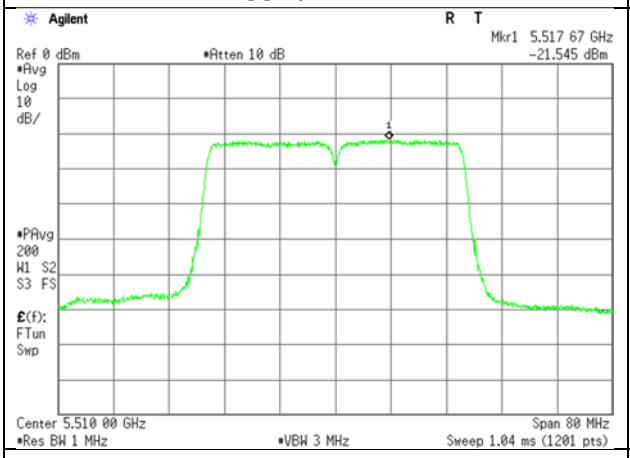


Maximum Power Spectral Density

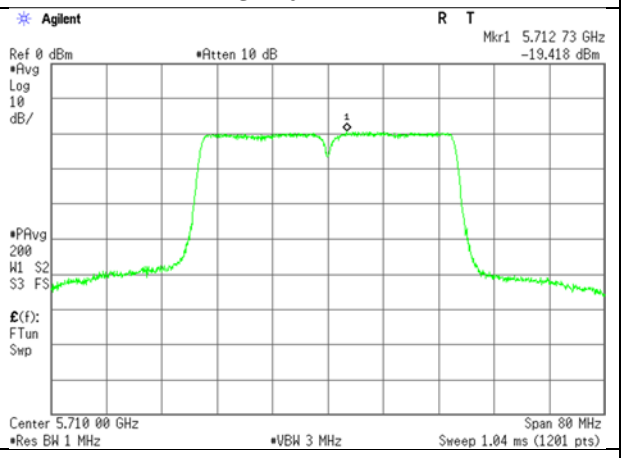
Report No.	12804674H	
Test place	Ise EMC Lab. No.6 Measurement Room	
Date	September 3, 2019	November 15, 2019
Temperature / Humidity	24 deg. C / 64 % RH	24 deg. C / 40 % RH
Engineer	Takumi Shimada	Yuta Moriya
Mode	Tx 11ac-40	

11ac-40, Antenna 1

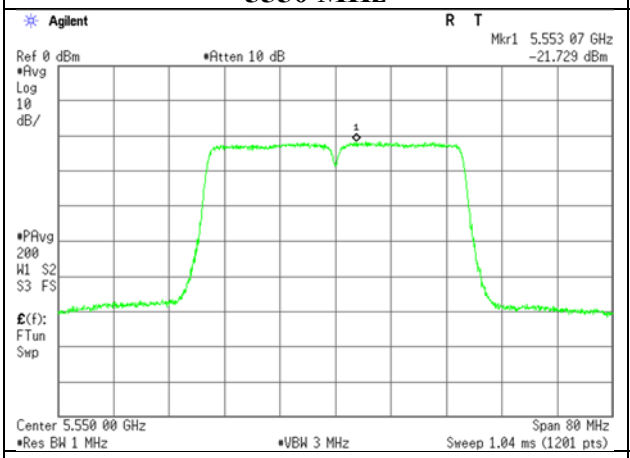
5510 MHz



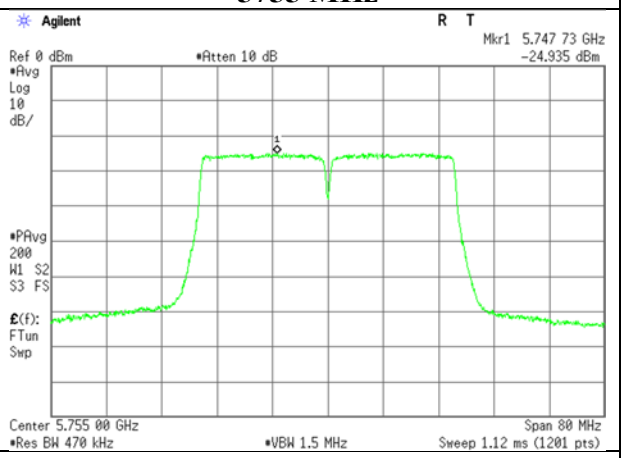
5710 MHz



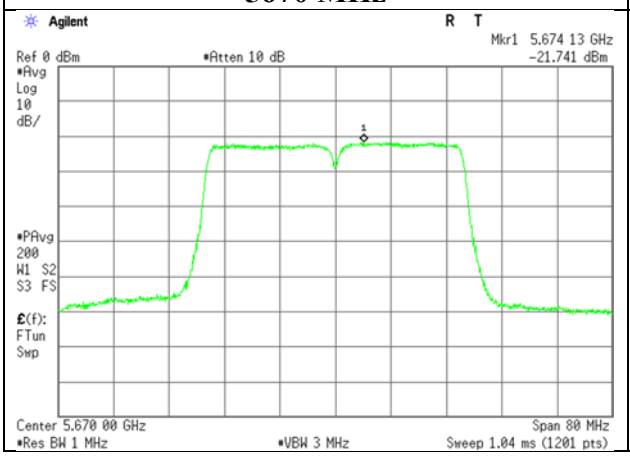
5550 MHz



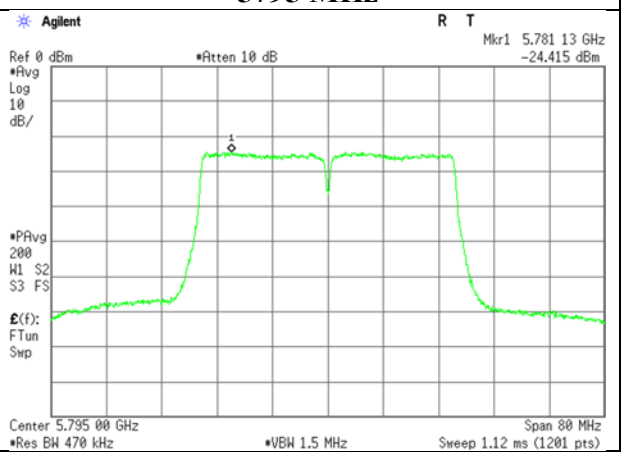
5755 MHz



5670 MHz



5795 MHz

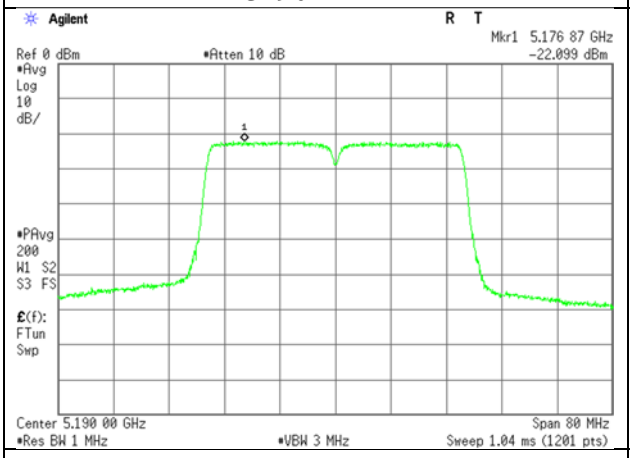


Maximum Power Spectral Density

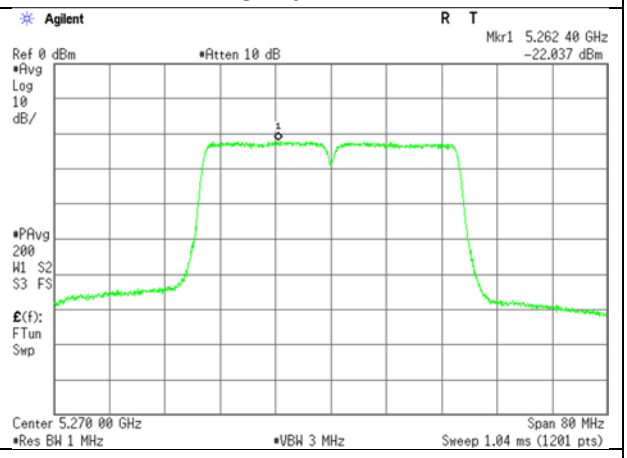
Report No.	12804674H
Test place	Ise EMC Lab. No.6 Measurement Room
Date	September 3, 2019
Temperature / Humidity	24 deg. C / 64 % RH
Engineer	Takumi Shimada
Mode	Tx 11ac-40

11ac-40, Antenna 2

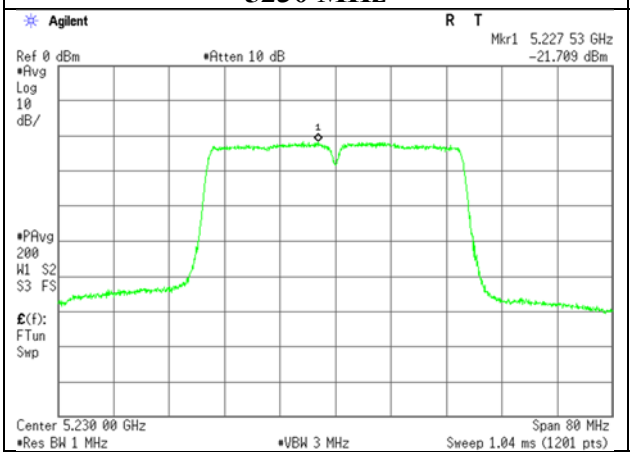
5190 MHz



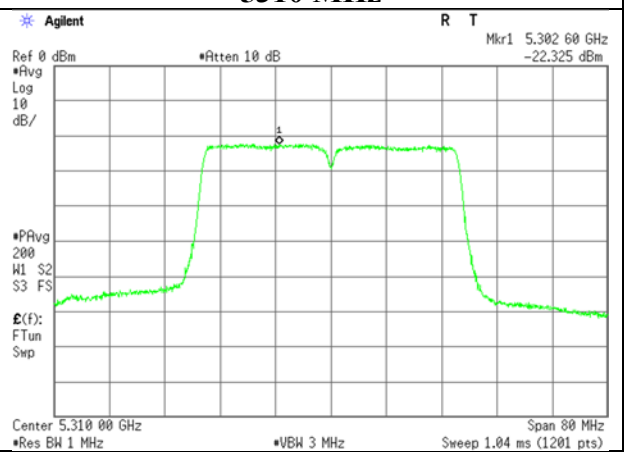
5270 MHz



5230 MHz



5310 MHz

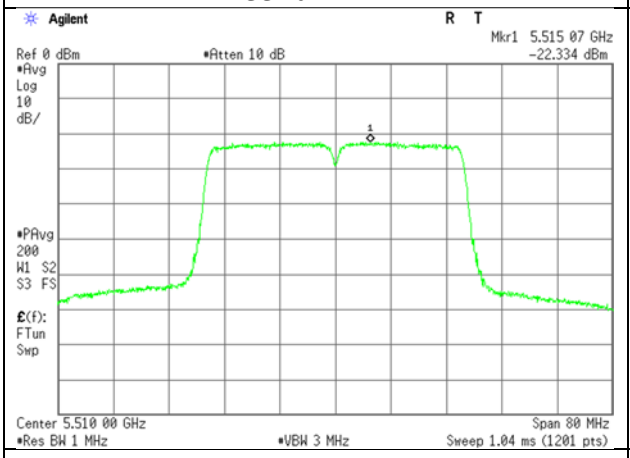


Maximum Power Spectral Density

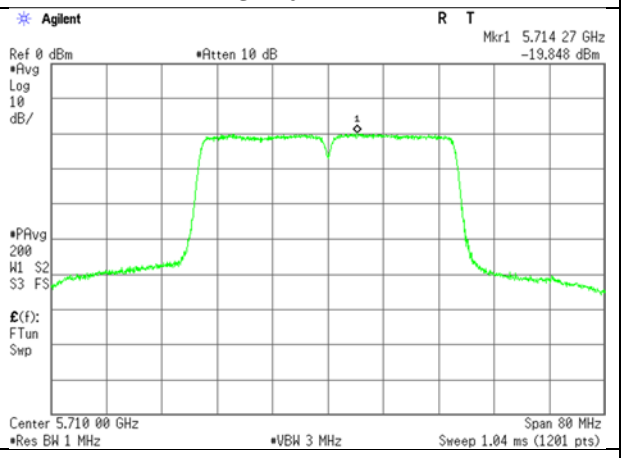
Report No.	12804674H	
Test place	Ise EMC Lab. No.6 Measurement Room	
Date	September 3, 2019	November 15, 2019
Temperature / Humidity	24 deg. C / 64 % RH	24 deg. C / 40 % RH
Engineer	Takumi Shimada	Yuta Moriya
Mode	Tx 11ac-40	

11ac-40, Antenna 2

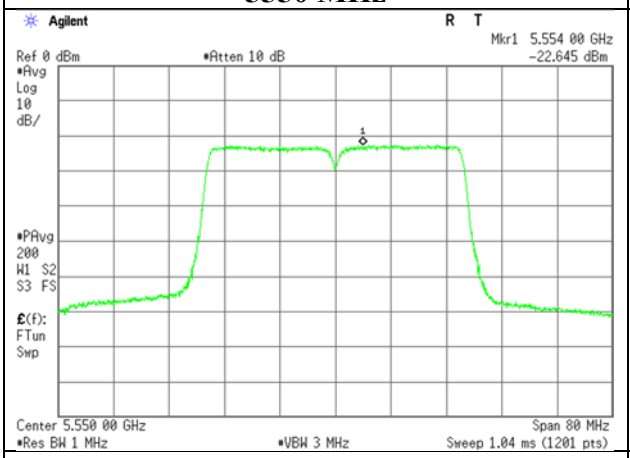
5510 MHz



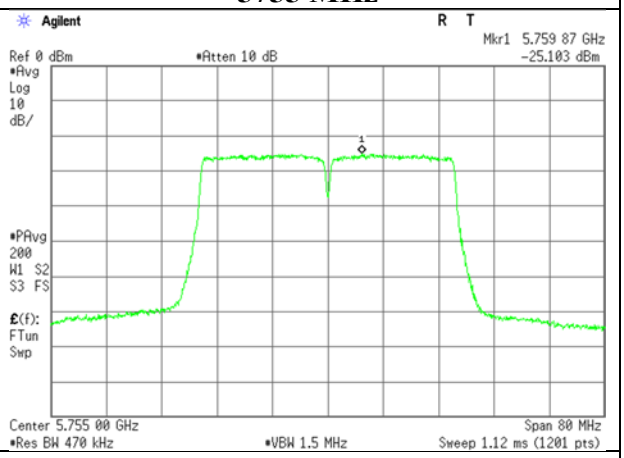
5710 MHz



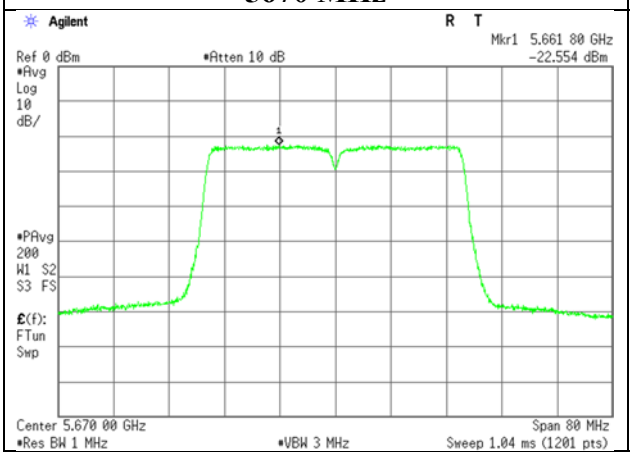
5550 MHz



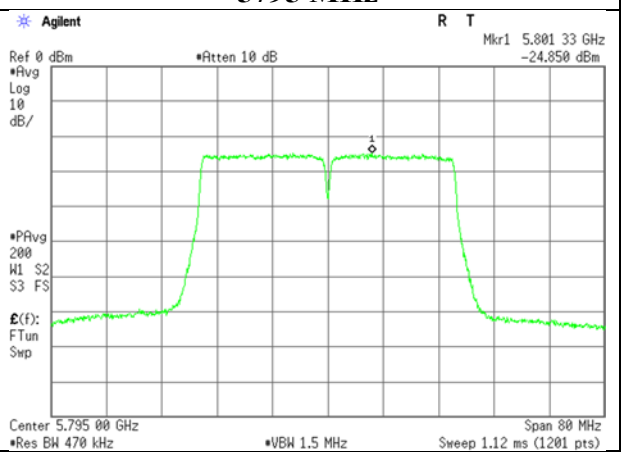
5755 MHz



5670 MHz



5795 MHz

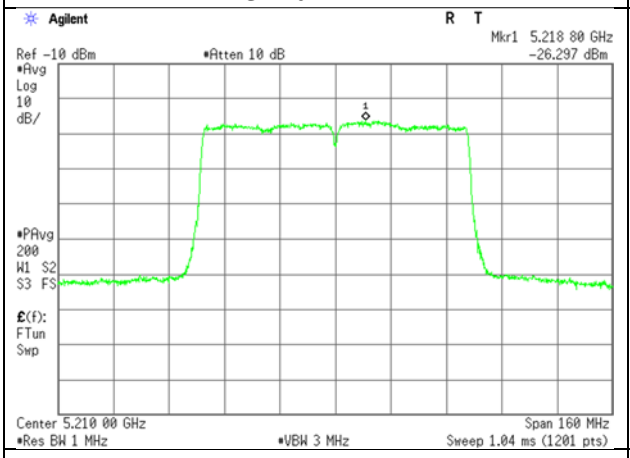


Maximum Power Spectral Density

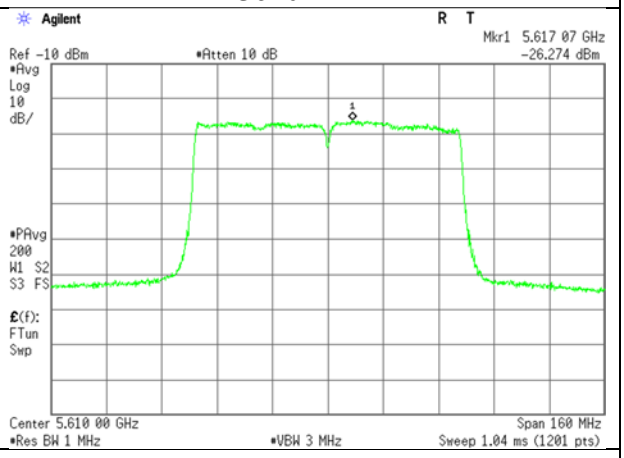
Report No.	12804674H	
Test place	Ise EMC Lab. No.6 Measurement Room	
Date	September 3, 2019	November 15, 2019
Temperature / Humidity	24 deg. C / 64 % RH	24 deg. C / 40 % RH
Engineer	Takumi Shimada	Yuta Moriya
Mode	Tx 11ac-80	

11ac-80, Antenna 1

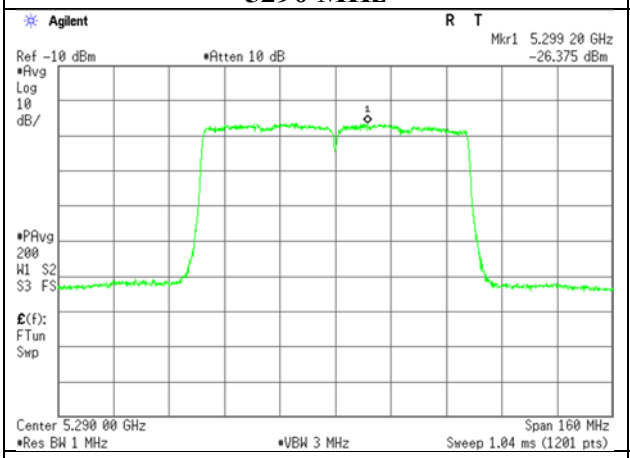
5210 MHz



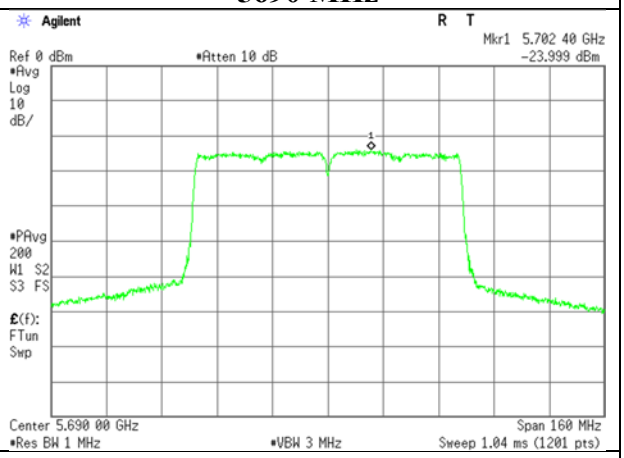
5610 MHz



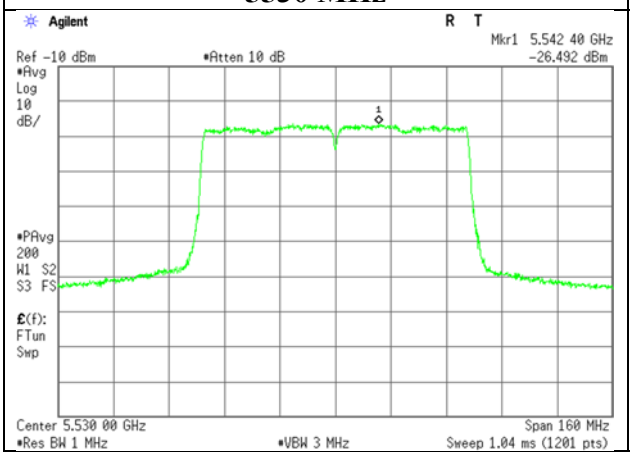
5290 MHz



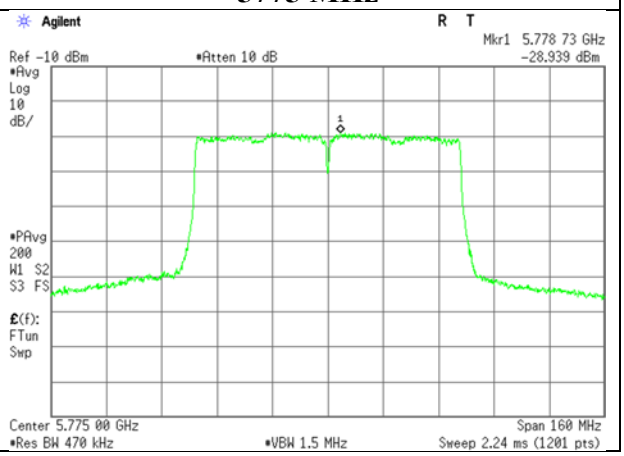
5690 MHz



5530 MHz



5775 MHz

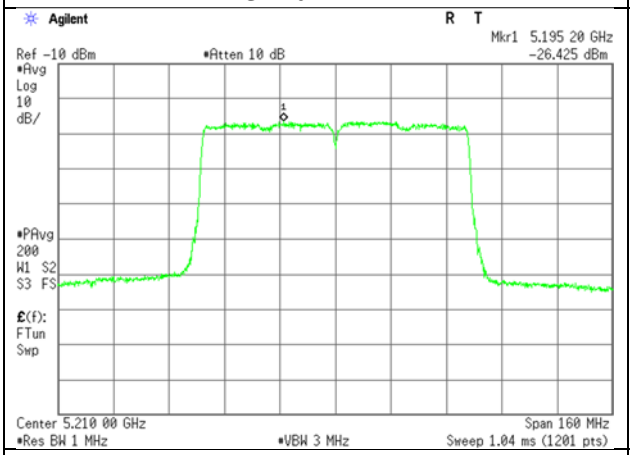


Maximum Power Spectral Density

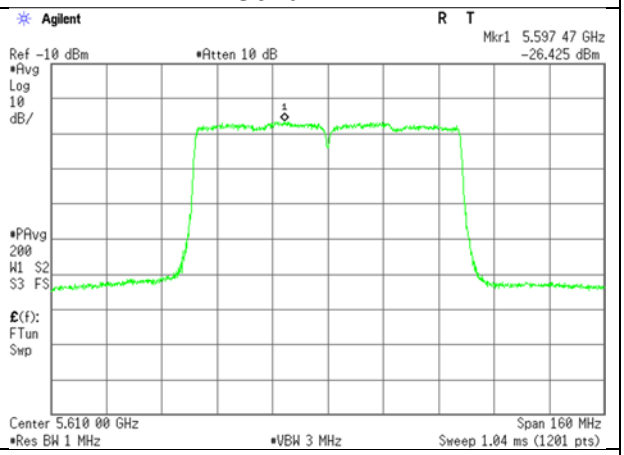
Report No.	12804674H	
Test place	Ise EMC Lab. No.6 Measurement Room	
Date	September 3, 2019	November 15, 2019
Temperature / Humidity	24 deg. C / 64 % RH	24 deg. C / 40 % RH
Engineer	Takumi Shimada	Yuta Moriya
Mode	Tx 11ac-80	

11ac-80, Antenna 2

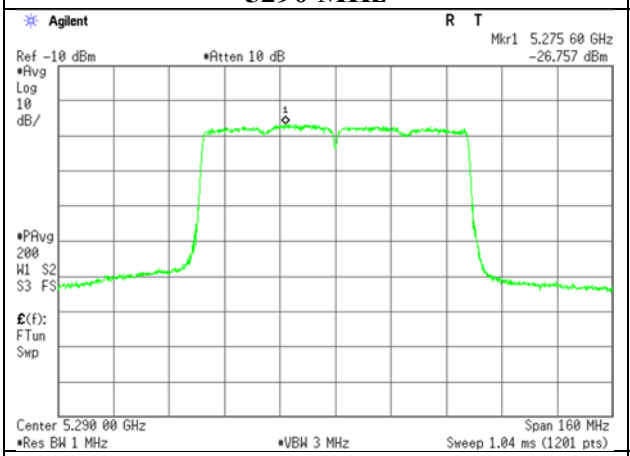
5210 MHz



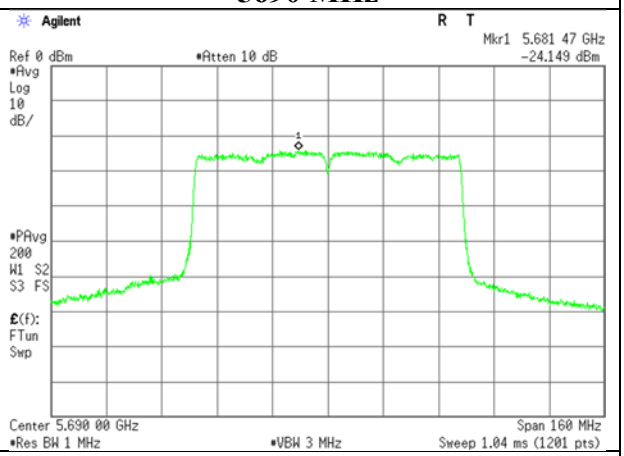
5610 MHz



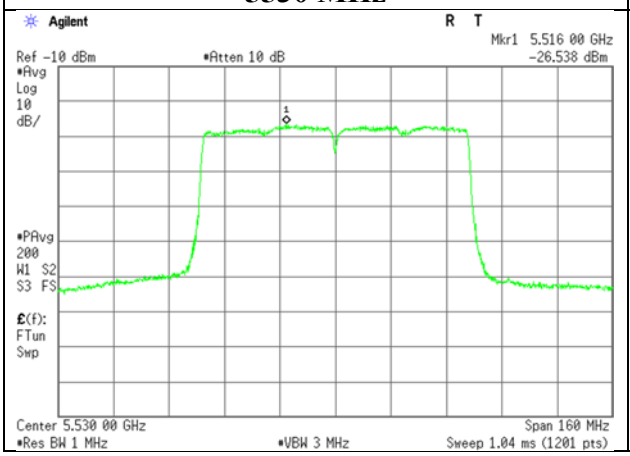
5290 MHz



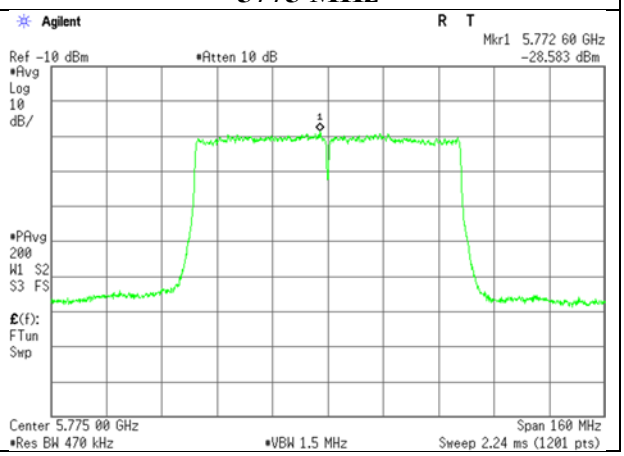
5690 MHz



5530 MHz



5775 MHz



Radiated Spurious Emission

Report No.	12804674H				
Test place	Ise EMC Lab.				
Semi Anechoic Chamber	No.3	No.3	No.3	No.3	No.3
Date	August 1, 2019	August 5, 2019	August 6, 2019	August 7, 2019	August 6, 2019
Temperature / Humidity	22 deg. C / 56 % RH	22 deg. C / 58 % RH	22 deg. C / 66 % RH	25 deg. C / 63 % RH	22 deg. C / 66 % RH
Engineer	Koji Yamamoto (1 GHz - 10 GHz)	Junki Nagatomi (10 GHz - 18 GHz)	Junki Nagatomi (18 - 26.5GHz)	Akihiko Maeda (26.5GHz - 40GHz)	Akihiko Maeda (Below 1 GHz)
Mode	Tx 11n-20 5180 MHz				

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	54.719	QP	45.8	9.2	7.5	32.2	-	30.2	40.0	9.8	
Hori.	93.351	QP	32.7	8.9	8.0	32.2	-	17.5	43.5	26.1	
Hori.	160.417	QP	38.5	15.5	8.8	32.1	-	30.6	43.5	12.9	
Hori.	171.935	QP	35.1	15.9	8.9	32.1	-	27.8	43.5	15.7	
Hori.	228.950	QP	43.0	11.3	9.4	32.0	-	31.7	46.0	14.3	
Hori.	344.080	QP	34.1	14.9	10.3	31.9	-	27.4	46.0	18.6	
Hori.	5150.000	PK	48.9	32.1	6.1	36.2	-	50.9	73.9	23.0	
Hori.	10360.000	PK	45.0	39.2	-2.5	36.7	-	45.1	73.9	28.8	
Hori.	15540.000	PK	45.0	37.7	-0.9	36.4	-	45.3	73.9	28.6	Floor noise
Hori.	20720.000	PK	44.8	38.1	-1.8	32.9	-	48.2	73.9	25.7	Floor noise
Hori.	25900.000	PK	47.5	39.2	-0.8	30.7	-	55.2	73.9	18.7	Floor noise
Hori.	5150.000	AV	39.1	32.1	6.1	36.2	1.9	43.0	53.9	10.9	*1)
Hori.	10360.000	AV	37.2	39.2	-2.5	36.7	1.9	39.2	53.9	14.7	
Hori.	15540.000	AV	36.5	37.7	-0.9	36.4	-	36.8	53.9	17.1	Floor noise
Hori.	20720.000	AV	36.3	38.1	-1.8	32.9	-	39.7	53.9	14.2	Floor noise
Hori.	25900.000	AV	38.9	39.2	-0.8	30.7	-	46.6	53.9	7.3	Floor noise
Vert.	54.666	QP	46.2	9.2	7.5	32.2	-	30.7	40.0	9.3	
Vert.	93.351	QP	40.4	8.9	8.0	32.2	-	25.2	43.5	18.4	
Vert.	160.417	QP	45.5	15.5	8.8	32.1	-	37.6	43.5	5.9	
Vert.	172.064	QP	33.9	15.9	8.9	32.1	-	26.6	43.5	16.9	
Vert.	228.998	QP	38.1	11.3	9.4	32.0	-	26.8	46.0	19.2	
Vert.	344.072	QP	33.8	14.9	10.3	31.9	-	27.1	46.0	18.9	
Vert.	5150.000	PK	49.2	32.1	6.1	36.2	-	51.2	73.9	22.7	
Vert.	10360.000	PK	44.9	39.2	-2.5	36.7	-	44.9	73.9	29.0	
Vert.	15540.000	PK	45.1	37.7	-0.9	36.4	-	45.4	73.9	28.5	Floor noise
Vert.	20720.000	PK	44.7	38.1	-1.8	32.9	-	48.1	73.9	25.8	Floor noise
Vert.	25900.000	PK	47.6	39.2	-0.8	30.7	-	55.2	73.9	18.7	Floor noise
Vert.	5150.000	AV	39.1	32.1	6.1	36.2	1.9	43.0	53.9	10.9	*1)
Vert.	10360.000	AV	36.7	39.2	-2.5	36.7	1.9	38.7	53.9	15.2	
Vert.	15540.000	AV	36.7	37.7	-0.9	36.4	-	37.0	53.9	16.9	Floor noise
Vert.	20720.000	AV	36.4	38.1	-1.8	32.9	-	39.8	53.9	14.1	Floor noise
Vert.	25900.000	AV	39.1	39.2	-0.8	30.7	-	46.8	53.9	7.2	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor

*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

Distance factor: 1 GHz - 10 GHz 20log (4.0 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

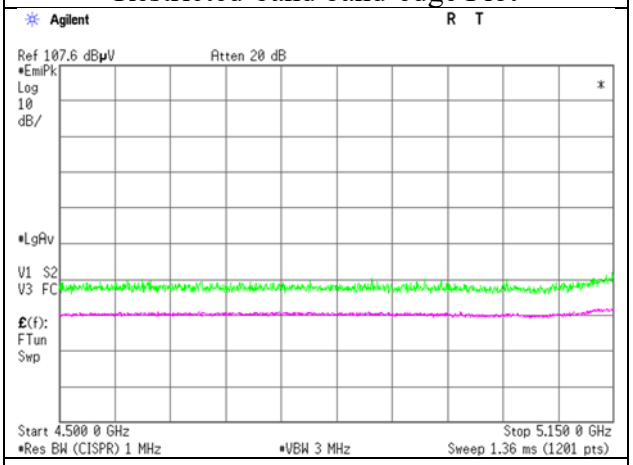
*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission

Report No.	12804674H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.3
Date	August 1, 2019
Temperature / Humidity	22 deg. C / 56 % RH
Engineer	Koji Yamamoto (1 GHz - 10 GHz)
Mode	Tx 11n-20 5180 MHz

Horizontal

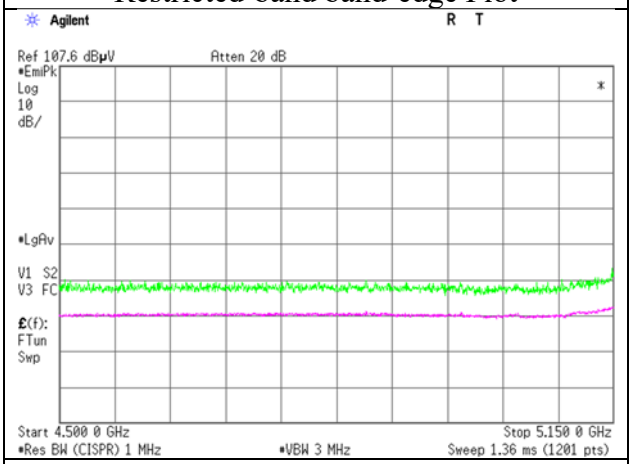
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No.	12804674H			
Test place	Ise EMC Lab.			
Semi Anechoic Chamber	No.3	No.3	No.3	No.3
Date	August 1, 2019	August 5, 2019	August 6, 2019	August 7, 2019
Temperature / Humidity	22 deg. C / 56 % RH	22 deg. C / 58 % RH	22 deg. C / 66 % RH	25 deg. C / 63 % RH
Engineer	Koji Yamamoto (1 GHz - 10 GHz)	Junki Nagatomi (10 GHz - 18 GHz)	Junki Nagatomi (18 GHz - 26.5 GHz)	Akihiko Maeda (26.5 GHz - 40 GHz)
Mode	Tx 11n-20 5260 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	10520.000	PK	43.9	39.4	-2.4	36.5	-	44.4	73.9	29.6	
Hori.	15780.000	PK	45.4	37.4	-0.9	36.7	-	45.2	73.9	28.7	Floor noise
Hori.	21040.000	PK	46.2	38.4	-1.7	32.9	-	49.9	73.9	24.0	Floor noise
Hori.	26300.000	PK	48.4	39.4	-0.7	30.6	-	56.5	73.9	17.4	Floor noise
Hori.	10520.000	AV	35.7	39.4	-2.4	36.5	1.9	38.1	53.9	15.8	
Hori.	15780.000	AV	37.2	37.4	-0.9	36.7	-	37.1	53.9	16.9	Floor noise
Hori.	21040.000	AV	36.5	38.4	-1.7	32.9	-	40.3	53.9	13.6	Floor noise
Hori.	26300.000	AV	38.5	39.4	-0.7	30.6	-	46.6	53.9	7.3	Floor noise
Vert.	10520.000	PK	45.0	39.4	-2.4	36.5	-	45.5	73.9	28.4	
Vert.	15780.000	PK	45.4	37.4	-0.9	36.7	-	45.2	73.9	28.7	Floor noise
Vert.	21040.000	PK	44.7	38.4	-1.7	32.9	-	48.5	73.9	25.4	Floor noise
Vert.	26300.000	PK	47.6	39.4	-0.7	30.6	-	55.7	73.9	18.2	Floor noise
Vert.	10520.000	AV	35.7	39.4	-2.4	36.5	1.9	38.1	53.9	15.8	
Vert.	15780.000	AV	37.1	37.4	-0.9	36.7	-	36.9	53.9	17.0	Floor noise
Vert.	21040.000	AV	36.2	38.4	-1.7	32.9	-	39.9	53.9	14.0	Floor noise
Vert.	26300.000	AV	38.4	39.4	-0.7	30.6	-	46.5	53.9	7.4	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor

*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

Distance factor:	1 GHz - 10 GHz	20log (4.0 m / 3.0 m) = 2.5 dB
	10 GHz - 40 GHz	20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Report No.	12804674H			
Test place	Ise EMC Lab.			
Semi Anechoic Chamber	No.3	No.3	No.3	No.3
Date	August 1, 2019	August 5, 2019	August 6, 2019	August 7, 2019
Temperature / Humidity	22 deg. C / 56 % RH	22 deg. C / 58 % RH	22 deg. C / 66 % RH	25 deg. C / 63 % RH
Engineer	Koji Yamamoto (1 GHz - 10 GHz)	Junki Nagatomi (10 GHz - 18 GHz)	Junki Nagatomi (18 GHz - 26.5 GHz)	Akihiko Maeda (26.5 GHz - 40 GHz)
Mode	Tx 11n-20 5320 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	5350.000	PK	48.9	31.9	6.2	36.1	-	50.8	73.9	23.1	
Hori.	10640.000	PK	43.9	39.5	-2.4	36.4	-	44.6	73.9	29.4	
Hori.	15960.000	PK	45.4	37.5	-0.9	36.9	-	45.1	73.9	28.8	Floor noise
Hori.	21280.000	PK	45.3	38.5	-1.7	32.8	-	49.2	73.9	24.7	Floor noise
Hori.	5350.000	AV	38.4	31.9	6.2	36.1	1.9	42.3	53.9	11.6	*1)
Hori.	10640.000	AV	35.7	39.5	-2.4	36.4	1.9	38.3	53.9	15.6	
Hori.	15960.000	AV	37.2	37.5	-0.9	36.9	-	36.9	53.9	17.0	Floor noise
Hori.	21280.000	AV	36.7	38.5	-1.7	32.8	-	40.6	53.9	13.3	Floor noise
Vert.	5350.000	PK	50.7	31.9	6.2	36.1	-	52.7	73.9	21.2	
Vert.	10640.000	PK	44.7	39.5	-2.4	36.4	-	45.4	73.9	28.5	
Vert.	15960.000	PK	45.4	37.5	-0.9	36.9	-	45.1	73.9	28.8	Floor noise
Vert.	21280.000	PK	45.8	38.5	-1.7	32.8	-	49.7	73.9	24.2	Floor noise
Vert.	5350.000	AV	40.2	31.9	6.2	36.1	1.9	44.1	53.9	9.8	*1)
Vert.	10640.000	AV	35.8	39.5	-2.4	36.4	1.9	38.4	53.9	15.5	
Vert.	15960.000	AV	37.4	37.5	-0.9	36.9	-	37.0	53.9	16.9	Floor noise
Vert.	21280.000	AV	36.7	38.5	-1.7	32.8	-	40.6	53.9	13.3	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor

*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

Distance factor: 1 GHz - 10 GHz 20log (4.0 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

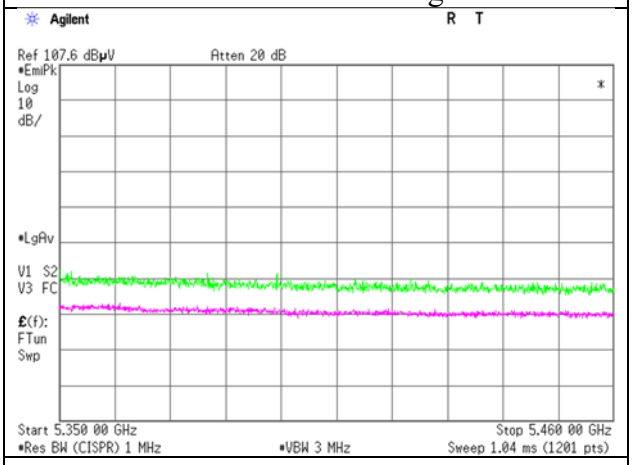
*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission

Report No.	12804674H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.3
Date	August 1, 2019
Temperature / Humidity	22 deg. C / 56 % RH
Engineer	Koji Yamamoto
Mode	Tx 11n-20 5320 MHz

Horizontal

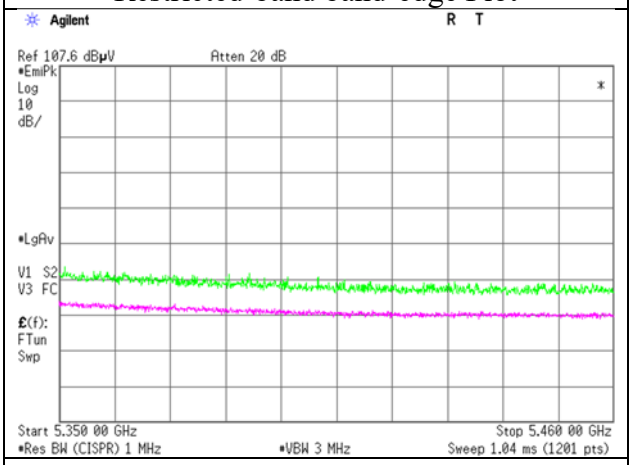
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No.	12804674H			
Test place	Ise EMC Lab.			
Semi Anechoic Chamber	No.3	No.3	No.3	No.3
Date	August 1, 2019	August 5, 2019	August 6, 2019	August 7, 2019
Temperature / Humidity	22 deg. C / 56 % RH	23 deg. C / 54 % RH	22 deg. C / 66 % RH	25 deg. C / 63 % RH
Engineer	Koji Yamamoto (1 GHz - 10 GHz)	Akihiko Maeda (10 GHz - 18 GHz)	Junki Nagatomi (18GHz - 26.5 GHz)	Akihiko Maeda (26.5 GHz - 40 GHz)
Mode	Tx 11n-20 5500 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	5460.000	PK	48.8	32.0	6.2	36.1	-	50.9	73.9	23.0	
Hori.	5470.000	PK	49.5	32.0	6.2	36.1	-	51.7	68.2	16.5	
Hori.	11000.000	PK	45.3	39.9	-2.2	36.1	-	46.9	73.9	27.0	
Hori.	16500.000	PK	45.0	39.1	-0.9	36.3	-	46.9	73.9	27.0	Floor noise
Hori.	22000.000	PK	46.5	38.6	-1.6	32.6	-	51.0	73.9	22.9	Floor noise
Hori.	5460.000	AV	37.6	32.0	6.2	36.1	1.9	41.7	53.9	12.2	*1)
Hori.	11000.000	AV	36.8	39.9	-2.2	36.1	1.9	40.4	53.9	13.5	
Hori.	16500.000	AV	36.4	39.1	-0.9	36.3	-	38.3	53.9	15.6	Floor noise
Hori.	22000.000	AV	34.8	38.6	-1.6	32.6	-	39.3	53.9	14.6	Floor noise
Vert.	5460.000	PK	49.8	32.0	6.2	36.1	-	51.9	73.9	22.0	
Vert.	5470.000	PK	50.4	32.0	6.2	36.1	-	52.5	68.2	15.7	
Vert.	11000.000	PK	45.6	39.9	-2.2	36.1	-	47.2	73.9	26.7	
Vert.	16500.000	PK	44.7	39.1	-0.9	36.3	-	46.7	73.9	27.2	Floor noise
Vert.	22000.000	PK	47.2	38.6	-1.6	32.6	-	51.7	73.9	22.2	Floor noise
Vert.	5460.000	AV	39.1	32.0	6.2	36.1	1.9	43.2	53.9	10.7	*1)
Vert.	11000.000	AV	37.0	39.9	-2.2	36.1	1.9	40.5	53.9	13.4	
Vert.	16500.000	AV	36.6	39.1	-0.9	36.3	-	38.5	53.9	15.4	Floor noise
Vert.	22000.000	AV	36.4	38.6	-1.6	32.6	-	40.9	53.9	13.0	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor

*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

Distance factor: 1 GHz - 10 GHz 20log (4.0 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

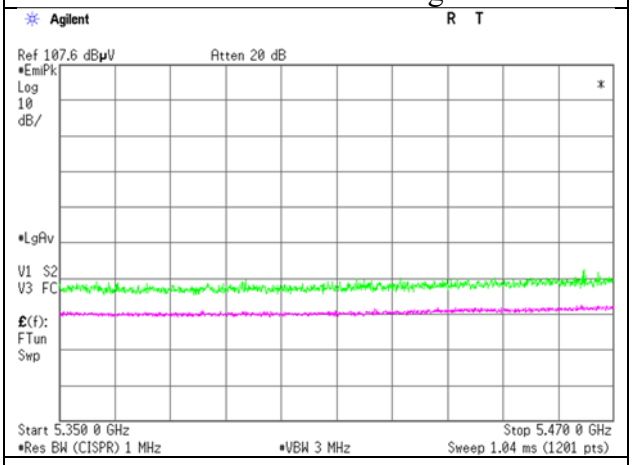
*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission

Report No.	12804674H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.3
Date	August 1, 2019
Temperature / Humidity	22 deg. C / 56 % RH
Engineer	Koji Yamamoto
Mode	Tx 11n-20 5500 MHz

Horizontal

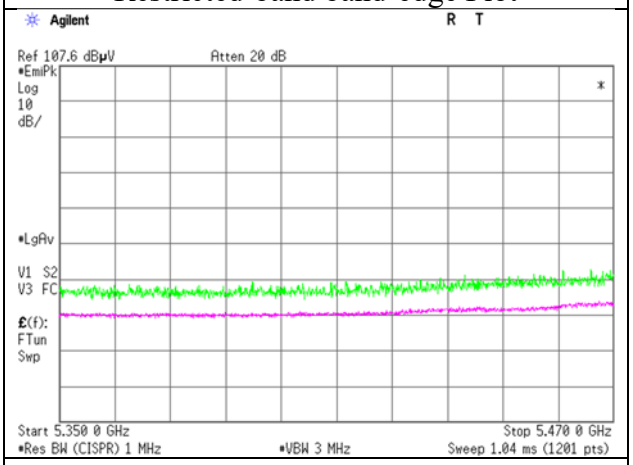
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No.	12804674H			
Test place	Ise EMC Lab.			
Semi Anechoic Chamber	No.3	No.3	No.3	No.3
Date	August 1, 2019	August 5, 2019	August 6, 2019	August 7, 2019
Temperature / Humidity	22 deg. C / 56 % RH	23 deg. C / 54 % RH	22 deg. C / 66 % RH	25 deg. C / 63 % RH
Engineer	Koji Yamamoto	Akihiko Maeda	Junki Nagatomi	Akihiko Maeda
	(1 GHz - 10 GHz)	(10 GHz - 18 GHz)	(18 GHz - 26.5 GHz)	(26.5 GHz - 40 GHz)
Mode	Tx 11n-20 5580 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	11160.000	PK	46.6	39.6	-2.1	36.1	-	48.0	73.9	25.9	
Hori.	16740.000	PK	45.6	40.4	-0.9	36.0	-	49.2	73.9	24.7	Floor noise
Hori.	22320.000	PK	46.7	38.5	-1.5	32.5	-	51.2	73.9	22.7	Floor noise
Hori.	11160.000	AV	39.8	39.6	-2.1	36.1	1.9	43.1	53.9	10.8	
Hori.	16740.000	AV	36.9	40.4	-0.9	36.0	-	40.5	53.9	13.4	Floor noise
Hori.	22320.000	AV	36.3	38.5	-1.5	32.5	-	40.8	53.9	13.1	Floor noise
Vert.	11160.000	PK	46.7	39.6	-2.1	36.1	-	48.1	73.9	25.8	
Vert.	16740.000	PK	46.1	40.4	-0.9	36.0	-	49.7	73.9	24.2	Floor noise
Vert.	22320.000	PK	46.1	38.5	-1.5	32.5	-	50.5	73.9	23.4	Floor noise
Vert.	11160.000	AV	40.0	39.6	-2.1	36.1	1.9	43.3	53.9	10.6	
Vert.	16740.000	AV	37.0	40.4	-0.9	36.0	-	40.5	53.9	13.4	Floor noise
Vert.	22320.000	AV	36.3	38.5	-1.5	32.5	-	40.8	53.9	13.1	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor

*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

Distance factor:	1 GHz - 10 GHz	20log (4.0 m / 3.0 m) = 2.5 dB
	10 GHz - 40 GHz	20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Report No.	12804674H			
Test place	Ise EMC Lab.			
Semi Anechoic Chamber	No.3	No.3	No.3	No.3
Date	August 1, 2019	August 5, 2019	August 6, 2019	August 7, 2019
Temperature / Humidity	22 deg. C / 56 % RH	23 deg. C / 54 % RH	22 deg. C / 66 % RH	25 deg. C / 63 % RH
Engineer	Koji Yamamoto	Akihiko Maeda	Junki Nagatomi	Akihiko Maeda
	(1 GHz - 10 GHz)	(10 GHz - 18 GHz)	(18 GHz - 26.5 GHz)	(26.5 GHz - 40 GHz)
Mode	Tx 11n-20 5700 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	5725.000	PK	53.0	32.4	6.3	36.1	-	55.6	68.2	12.6	
Hori.	11400.000	PK	46.8	40.0	-2.0	36.1	-	48.7	73.9	25.2	
Hori.	17100.000	PK	46.0	41.6	-0.8	35.6	-	51.1	73.9	22.8	Floor noise
Hori.	22800.000	PK	46.1	38.6	-1.4	32.4	-	50.9	73.9	23.0	Floor noise
Hori.	11400.000	AV	39.9	40.0	-2.0	36.1	1.9	43.7	53.9	10.2	
Hori.	17100.000	AV	37.0	41.6	-0.8	35.6	-	42.1	53.9	11.8	Floor noise
Hori.	22800.000	AV	35.9	38.6	-1.4	32.4	-	40.7	53.9	13.3	Floor noise
Vert.	5725.000	PK	52.7	32.4	6.3	36.1	-	55.4	68.2	12.8	
Vert.	11400.000	PK	46.7	40.0	-2.0	36.1	-	48.6	73.9	25.3	
Vert.	17100.000	PK	45.7	41.6	-0.8	35.6	-	50.8	73.9	23.1	Floor noise
Vert.	22800.000	PK	46.3	38.6	-1.4	32.4	-	51.1	73.9	22.8	Floor noise
Vert.	11400.000	AV	39.4	40.0	-2.0	36.1	1.9	43.2	53.9	10.7	
Vert.	17100.000	AV	36.9	41.6	-0.8	35.6	-	42.0	53.9	11.9	Floor noise
Vert.	22800.000	AV	35.9	38.6	-1.4	32.4	-	40.6	53.9	13.3	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor

*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

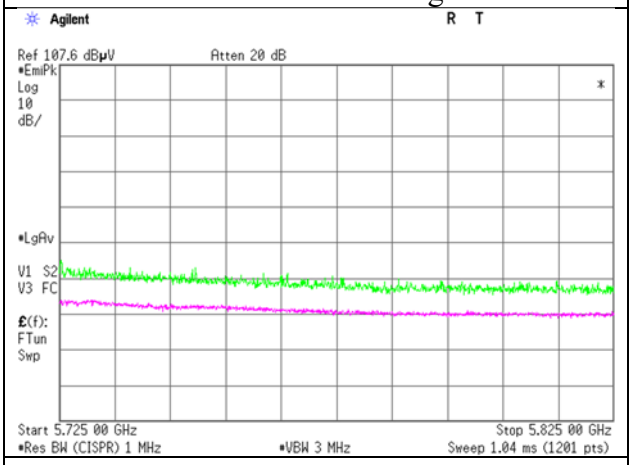
Distance factor:	1 GHz - 10 GHz	20log (4.0 m / 3.0 m) = 2.5 dB
	10 GHz - 40 GHz	20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Report No.	12804674H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.3
Date	August 1, 2019
Temperature / Humidity	22 deg. C / 56 % RH
Engineer	Koji Yamamoto
Mode	Tx 11n-20 5700 MHz

Horizontal

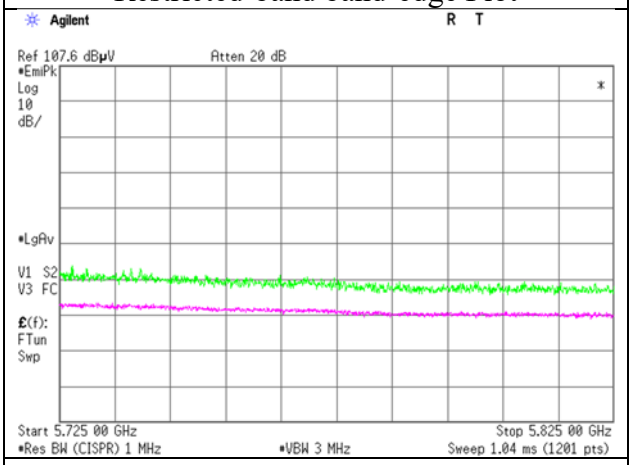
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 12804674H
Test place Ise EMC Lab.
Semi Anechoic Chamber No.4
Date November 8, 2019
Temperature / Humidity 22 deg. C / 56 % RH
Engineer Akihiko Maeda
(Above 1 GHz)
Mode Tx 11n-20 5720 MHz

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	11440.000	PK	44.5	40.3	-1.8	33.3	-	49.7	73.9	24.2	
Hori.	17160.000	PK	45.2	40.8	-0.1	32.7	-	53.2	73.9	20.7	Floor noise
Hori.	22880.000	PK	45.6	38.5	-0.3	33.5	-	50.3	73.9	23.6	Floor noise
Hori.	11440.000	AV	36.2	40.3	-1.8	33.3	1.9	43.4	53.9	10.5	
Hori.	17160.000	AV	35.6	40.8	-0.1	32.7	-	43.7	53.9	10.3	Floor noise
Hori.	22880.000	AV	36.7	38.5	-0.3	33.5	-	41.4	53.9	12.5	Floor noise
Vert.	11440.000	PK	45.8	40.3	-1.8	33.3	-	51.1	73.9	22.9	
Vert.	17160.000	PK	44.0	40.8	-0.1	32.7	-	52.0	73.9	21.9	Floor noise
Vert.	22880.000	PK	44.9	38.5	-0.3	33.5	-	49.6	73.9	24.3	Floor noise
Vert.	11440.000	AV	37.5	40.3	-1.8	33.3	1.9	44.7	53.9	9.2	
Vert.	17160.000	AV	36.0	40.8	-0.1	32.7	-	44.0	53.9	9.9	Floor noise
Vert.	22880.000	AV	36.6	38.5	-0.3	33.5	-	41.3	53.9	12.6	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

Distance factor: 1 GHz - 10 GHz 20log (4.0 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Report No.	12804674H			
Test place	Ise EMC Lab.			
Semi Anechoic Chamber	No.3	No.3	No.3	No.3
Date	August 1, 2019	August 5, 2019	August 6, 2019	August 7, 2019
Temperature / Humidity	22 deg. C / 56 % RH	23 deg. C / 54 % RH	22 deg. C / 66 % RH	25 deg. C / 63 % RH
Engineer	Koji Yamamoto	Akihiko Maeda	Junki Nagatomi	Akihiko Maeda
	(1 GHz - 10 GHz)	(10 GHz - 18 GHz)	(18 GHz - 26.5 GHz)	(26.5 GHz - 40 GHz)
Mode	Tx 11n-20 5745 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	5650.000	PK	44.6	32.0	6.3	36.1	-	46.7	68.2	21.5	
Hori.	5700.000	PK	50.1	32.3	6.3	36.1	-	52.6	105.2	52.6	
Hori.	5720.000	PK	54.0	32.4	6.3	36.1	-	56.6	110.8	54.2	
Hori.	5725.000	PK	60.5	32.4	6.3	36.1	-	63.1	122.2	59.1	
Hori.	11490.000	PK	44.6	40.0	-1.9	36.2	-	46.5	73.9	27.4	
Hori.	17235.000	PK	44.1	42.1	-0.8	35.7	-	49.8	73.9	24.1	Floor noise
Hori.	22980.000	PK	45.9	38.6	-1.4	32.4	-	50.7	73.9	23.2	Floor noise
Hori.	11490.000	AV	36.7	40.0	-1.9	36.2	1.9	40.6	53.9	13.3	
Hori.	17235.000	AV	37.0	42.1	-0.8	35.7	-	42.7	53.9	11.2	Floor noise
Hori.	22980.000	AV	36.2	38.6	-1.4	32.4	-	41.0	53.9	12.9	Floor noise
Vert.	5650.000	PK	44.1	32.0	6.3	36.1	-	46.2	68.2	22.0	
Vert.	5700.000	PK	48.1	32.3	6.3	36.1	-	50.6	105.2	54.6	
Vert.	5720.000	PK	52.6	32.4	6.3	36.1	-	55.2	110.8	55.6	
Vert.	5725.000	PK	58.8	32.4	6.3	36.1	-	61.5	122.2	60.7	
Vert.	11490.000	PK	45.8	40.0	-1.9	36.2	-	47.7	73.9	26.2	
Vert.	17235.000	PK	45.0	42.1	-0.8	35.7	-	50.7	73.9	23.2	Floor noise
Vert.	22980.000	PK	47.2	38.6	-1.4	32.4	-	52.0	73.9	21.9	Floor noise
Vert.	11490.000	AV	37.4	40.0	-1.9	36.2	1.9	41.3	53.9	12.6	
Vert.	17235.000	AV	37.2	42.1	-0.8	35.7	-	42.9	53.9	11.0	Floor noise
Vert.	22980.000	AV	36.1	38.6	-1.4	32.4	-	40.9	53.9	13.0	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor

*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

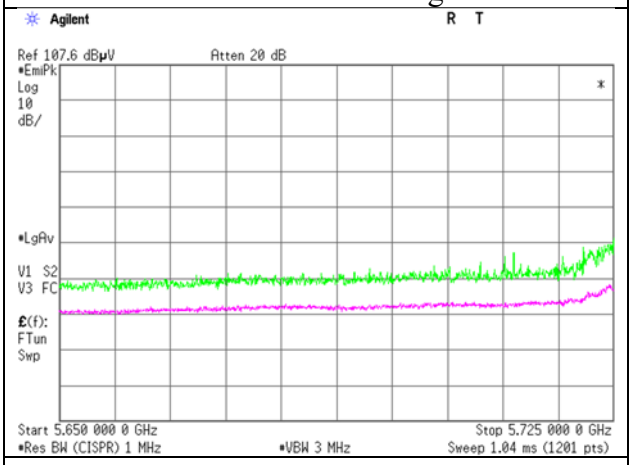
Distance factor:	1 GHz - 10 GHz	20log (4.0 m / 3.0 m) = 2.5 dB
	10 GHz - 40 GHz	20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Report No.	12804674H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.3
Date	August 1, 2019
Temperature / Humidity	22 deg. C / 56 % RH
Engineer	Koji Yamamoto
Mode	Tx 11n-20 5745 MHz

Horizontal

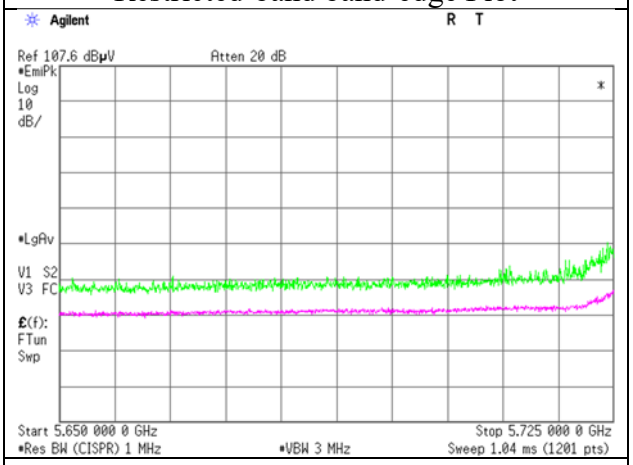
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No.	12804674H			
Test place	Ise EMC Lab.			
Semi Anechoic Chamber	No.3	No.3	No.3	No.3
Date	August 1, 2019	August 5, 2019	August 6, 2019	August 7, 2019
Temperature / Humidity	22 deg. C / 56 % RH	23 deg. C / 54 % RH	22 deg. C / 66 % RH	25 deg. C / 63 % RH
Engineer	Koji Yamamoto (1 GHz - 10 GHz)	Akihiko Maeda (10 GHz - 18 GHz)	Junki Nagatomi (18 GHz - 26.5 GHz)	Akihiko Maeda (26.5 GHz - 40 GHz)
Mode	Tx 11n-20 5785 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	11570.000	PK	43.9	39.8	-1.9	36.2	-	45.7	73.9	28.2	
Hori.	17355.000	PK	45.4	43.0	-0.7	35.7	-	52.1	73.9	21.8	Floor noise
Hori.	23140.000	PK	46.5	38.7	-1.3	32.3	-	51.4	73.9	22.5	Floor noise
Hori.	11570.000	AV	35.7	39.8	-1.9	36.2	1.9	39.4	53.9	14.5	
Hori.	17355.000	AV	36.6	43.0	-0.7	35.7	-	43.3	53.9	10.6	Floor noise
Hori.	23140.000	AV	36.0	38.7	-1.3	32.3	-	41.0	53.9	12.9	Floor noise
Vert.	11570.000	PK	43.7	39.8	-1.9	36.2	-	45.5	73.9	28.4	
Vert.	17355.000	PK	45.7	43.0	-0.7	35.7	-	52.4	73.9	21.5	Floor noise
Vert.	23140.000	PK	46.2	38.7	-1.3	32.3	-	51.2	73.9	22.7	Floor noise
Vert.	11570.000	AV	36.2	39.8	-1.9	36.2	1.9	39.9	53.9	14.0	
Vert.	17355.000	AV	36.7	43.0	-0.7	35.7	-	43.4	53.9	10.5	Floor noise
Vert.	23140.000	AV	36.1	38.7	-1.3	32.3	-	41.1	53.9	12.8	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor

*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

Distance factor: 1 GHz - 10 GHz 20log (4.0 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Report No.	12804674H			
Test place	Ise EMC Lab.			
Semi Anechoic Chamber	No.3	No.3	No.3	No.3
Date	August 1, 2019	August 5, 2019	August 6, 2019	August 7, 2019
Temperature / Humidity	22 deg. C / 56 % RH	23 deg. C / 54 % RH	22 deg. C / 66 % RH	25 deg. C / 63 % RH
Engineer	Koji Yamamoto (1 GHz - 10 GHz)	Akihiko Maeda (10 GHz - 18 GHz)	Junki Nagatomi (18 GHz - 26.5 GHz)	Akihiko Maeda (26.5 GHz - 40 GHz)
Mode	Tx 11n-20 5825 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	5850.000	PK	52.3	32.5	6.4	36.1	-	55.1	122.2	67.1	
Hori.	5855.000	PK	50.7	32.5	6.4	36.1	-	53.5	110.8	57.3	
Hori.	5875.000	PK	45.5	32.5	6.4	36.1	-	48.2	105.2	57.0	
Hori.	5925.000	PK	43.0	32.4	6.4	36.1	-	45.7	68.2	22.5	
Hori.	11650.000	PK	45.2	39.6	-1.8	36.2	-	46.8	73.9	27.1	
Hori.	17475.000	PK	45.6	43.8	-0.7	35.7	-	53.0	73.9	20.9	Floor noise
Hori.	23300.000	PK	46.4	38.7	-1.3	32.3	-	51.6	73.9	22.3	Floor noise
Hori.	11650.000	AV	36.7	39.6	-1.8	36.2	1.9	40.2	53.9	13.7	
Hori.	17475.000	AV	36.6	43.8	-0.7	35.7	-	44.0	53.9	9.9	Floor noise
Hori.	23300.000	AV	36.9	38.7	-1.3	32.3	-	42.0	53.9	11.9	Floor noise
Vert.	5850.000	PK	56.5	32.5	6.4	36.1	-	59.3	122.2	62.9	
Vert.	5855.000	PK	49.7	32.5	6.4	36.1	-	52.5	110.8	58.4	
Vert.	5875.000	PK	47.2	32.5	6.4	36.1	-	50.0	105.2	55.2	
Vert.	5925.000	PK	43.8	32.4	6.4	36.1	-	46.5	68.2	21.7	
Vert.	11650.000	PK	44.8	39.6	-1.8	36.2	-	46.4	73.9	27.6	
Vert.	17475.000	PK	46.4	43.8	-0.7	35.7	-	53.8	73.9	20.1	Floor noise
Vert.	23300.000	PK	47.1	38.7	-1.3	32.3	-	52.3	73.9	21.7	Floor noise
Vert.	11650.000	AV	37.0	39.6	-1.8	36.2	1.9	40.5	53.9	13.4	
Vert.	17475.000	AV	36.5	43.8	-0.7	35.7	-	43.9	53.9	10.0	Floor noise
Vert.	23300.000	AV	36.6	38.7	-1.3	32.3	-	41.8	53.9	12.1	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor

*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

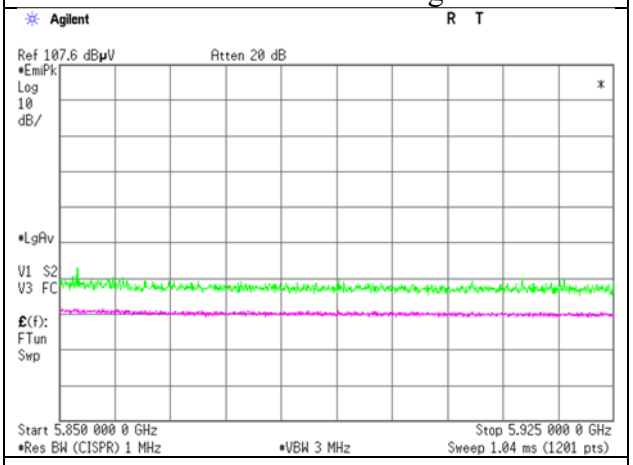
Distance factor: 1 GHz - 10 GHz 20log (4.0 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Report No.	12804674H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.3
Date	August 1, 2019
Temperature / Humidity	22 deg. C / 56 % RH
Engineer	Koji Yamamoto
Mode	Tx 11n-20 5825 MHz

Horizontal

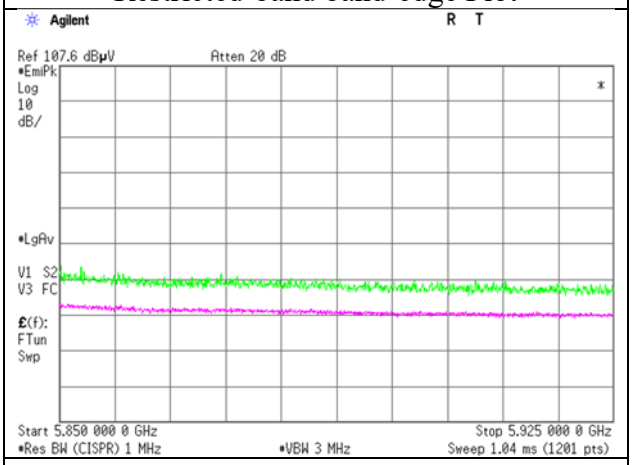
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No.	12804674H			
Test place	Ise EMC Lab.			
Semi Anechoic Chamber	No.3	No.3	No.3	No.3
Date	August 1, 2019	August 5, 2019	August 6, 2019	August 7, 2019
Temperature / Humidity	21 deg. C / 48 % RH	23 deg. C / 54 % RH	22 deg. C / 66 % RH	25 deg. C / 63 % RH
Engineer	Yuta Moriya (1 GHz - 10 GHz)	Akihiko Maeda (10 GHz - 18 GHz)	Junki Nagatomi (18 GHz - 26.5 GHz)	Akihiko Maeda (26.5 GHz - 40 GHz)
Mode	Tx 11n-40 5190 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	5150.000	PK	51.0	32.1	6.1	36.2	-	53.1	73.9	20.9	
Hori.	10380.000	PK	44.1	39.2	-2.5	36.6	-	44.1	73.9	29.8	
Hori.	15570.000	PK	46.4	37.6	-0.9	36.5	-	46.6	73.9	27.3	Floor noise
Hori.	20760.000	PK	45.1	38.1	-1.8	32.9	-	48.5	73.9	25.4	Floor noise
Hori.	25950.000	PK	47.0	39.2	-0.8	30.7	-	54.7	73.9	19.2	Floor noise
Hori.	5150.000	AV	38.7	32.1	6.1	36.2	2.7	43.4	53.9	10.5	*1)
Hori.	10380.000	AV	35.9	39.2	-2.5	36.6	2.7	38.7	53.9	15.2	
Hori.	15570.000	AV	37.0	37.6	-0.9	36.5	-	37.2	53.9	16.7	Floor noise
Hori.	20760.000	AV	36.1	38.1	-1.8	32.9	-	39.6	53.9	14.3	Floor noise
Hori.	25950.000	AV	39.3	39.2	-0.8	30.7	-	47.0	53.9	6.9	Floor noise
Vert.	5150.000	PK	51.1	32.1	6.1	36.2	-	53.1	73.9	20.8	
Vert.	10380.000	PK	44.9	39.2	-2.5	36.6	-	44.9	73.9	29.0	
Vert.	15570.000	PK	46.1	37.6	-0.9	36.5	-	46.3	73.9	27.6	Floor noise
Vert.	20760.000	PK	44.7	38.1	-1.8	32.9	-	48.2	73.9	25.7	Floor noise
Vert.	25950.000	PK	47.9	39.2	-0.8	30.7	-	55.6	73.9	18.3	Floor noise
Vert.	5150.000	AV	39.5	32.1	6.1	36.2	2.7	44.2	53.9	9.7	*1)
Vert.	10380.000	AV	36.0	39.2	-2.5	36.6	2.7	38.8	53.9	15.1	
Vert.	15570.000	AV	36.9	37.6	-0.9	36.5	-	37.1	53.9	16.8	Floor noise
Vert.	20760.000	AV	36.1	38.1	-1.8	32.9	-	39.5	53.9	14.4	Floor noise
Vert.	25950.000	AV	39.3	39.2	-0.8	30.7	-	47.0	53.9	7.0	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor

*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

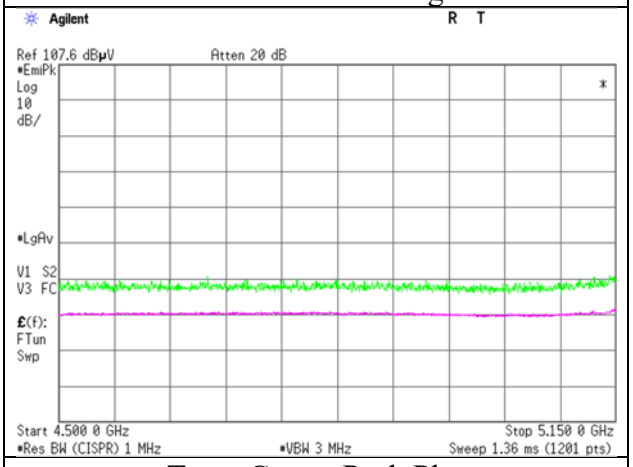
*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission

Report No.	12804674H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.3
Date	August 1, 2019
Temperature / Humidity	21 deg. C / 48 % RH
Engineer	Yuta Moriya
Mode	Tx 11n-40 5190 MHz

Horizontal

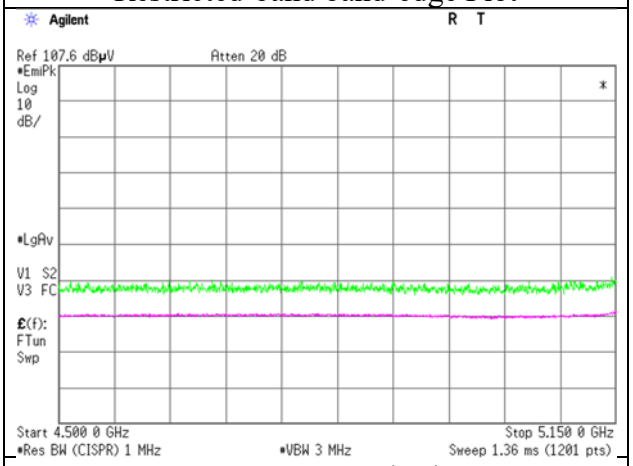
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No.	12804674H			
Test place	Ise EMC Lab.			
Semi Anechoic Chamber	No.3	No.3	No.3	No.3
Date	August 1, 2019	August 5, 2019	August 6, 2019	August 7, 2019
Temperature / Humidity	21 deg. C / 48 % RH	23 deg. C / 54 % RH	22 deg. C / 66 % RH	25 deg. C / 63 % RH
Engineer	Yuta Moriya (1 GHz - 10 GHz)	Akihiko Maeda (10 GHz - 18 GHz)	Junki Nagatomi (18 GHz - 26.5 GHz)	Akihiko Maeda (26.5 GHz - 40 GHz)
Mode	Tx 11n-40 5270 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	10540.000	PK	44.2	39.4	-2.4	36.5	-	44.7	73.9	29.2	Floor noise
Hori.	15810.000	PK	45.4	37.4	-0.9	36.7	-	45.1	73.9	28.8	Floor noise
Hori.	21080.000	PK	44.5	38.4	-1.7	32.9	-	48.3	73.9	25.6	Floor noise
Hori.	26350.000	PK	47.3	39.5	-0.7	30.6	-	55.5	73.9	18.4	Floor noise
Hori.	10540.000	AV	35.7	39.4	-2.4	36.5	-	36.2	53.9	17.7	Floor noise
Hori.	15810.000	AV	36.9	37.4	-0.9	36.7	-	36.6	53.9	17.3	Floor noise
Hori.	21080.000	AV	36.3	38.4	-1.7	32.9	-	40.1	53.9	13.8	Floor noise
Hori.	26350.000	AV	38.8	39.5	-0.7	30.6	-	47.1	53.9	6.8	Floor noise
Vert.	10540.000	PK	46.2	39.4	-2.4	36.5	-	46.7	73.9	27.2	Floor noise
Vert.	15810.000	PK	45.8	37.4	-0.9	36.7	-	45.6	73.9	28.3	Floor noise
Vert.	21080.000	PK	44.3	38.4	-1.7	32.9	-	48.1	73.9	25.8	Floor noise
Vert.	26350.000	PK	46.9	39.5	-0.7	30.6	-	55.2	73.9	18.7	Floor noise
Vert.	10540.000	AV	36.8	39.4	-2.4	36.5	-	37.3	53.9	16.6	Floor noise
Vert.	15810.000	AV	36.8	37.4	-0.9	36.7	-	36.6	53.9	17.3	Floor noise
Vert.	21080.000	AV	36.3	38.4	-1.7	32.9	-	40.1	53.9	13.8	Floor noise
Vert.	26350.000	AV	38.9	39.5	-0.7	30.6	-	47.2	53.9	6.8	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier)

*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Report No.	12804674H			
Test place	Ise EMC Lab.			
Semi Anechoic Chamber	No.3	No.3	No.3	No.3
Date	August 1, 2019	August 5, 2019	August 6, 2019	August 7, 2019
Temperature / Humidity	21 deg. C / 48 % RH	23 deg. C / 54 % RH	22 deg. C / 66 % RH	25 deg. C / 63 % RH
Engineer	Yuta Moriya (1 GHz - 10 GHz)	Akihiko Maeda (10 GHz - 18 GHz)	Junki Nagatomi (18 GHz - 26.5 GHz)	Akihiko Maeda (26.5 GHz - 40 GHz)
Mode	Tx 11n-40 5310 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	5350.000	PK	47.8	31.9	6.2	36.1	-	49.8	73.9	24.1	
Hori.	10620.000	PK	44.8	39.5	-2.4	36.4	-	45.4	73.9	28.5	
Hori.	15930.000	PK	46.0	37.4	-0.9	36.8	-	45.6	73.9	28.3	Floor noise
Hori.	21240.000	PK	45.3	38.5	-1.7	32.9	-	49.2	73.9	24.7	Floor noise
Hori.	5350.000	AV	37.1	31.9	6.2	36.1	2.7	41.8	53.9	12.1	*1)
Hori.	10620.000	AV	36.3	39.5	-2.4	36.4	2.7	39.6	53.9	14.3	
Hori.	15930.000	AV	37.2	37.4	-0.9	36.8	-	36.9	53.9	17.1	Floor noise
Hori.	21240.000	AV	36.7	38.5	-1.7	32.9	-	40.6	53.9	13.3	Floor noise
Vert.	5350.000	PK	49.6	31.9	6.2	36.1	-	51.6	73.9	22.3	
Vert.	10620.000	PK	44.7	39.5	-2.4	36.4	-	45.3	73.9	28.6	Floor noise
Vert.	15930.000	PK	46.2	37.4	-0.9	36.8	-	45.8	73.9	28.1	Floor noise
Vert.	21240.000	PK	44.8	38.5	-1.7	32.9	-	48.7	73.9	25.2	Floor noise
Vert.	5350.000	AV	38.9	31.9	6.2	36.1	2.7	43.6	53.9	10.3	*1)
Vert.	10620.000	AV	35.8	39.5	-2.4	36.4	-	36.4	53.9	17.5	Floor noise
Vert.	15930.000	AV	37.5	37.4	-0.9	36.8	-	37.1	53.9	16.8	Floor noise
Vert.	21240.000	AV	36.6	38.5	-1.7	32.9	-	40.5	53.9	13.4	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor

*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

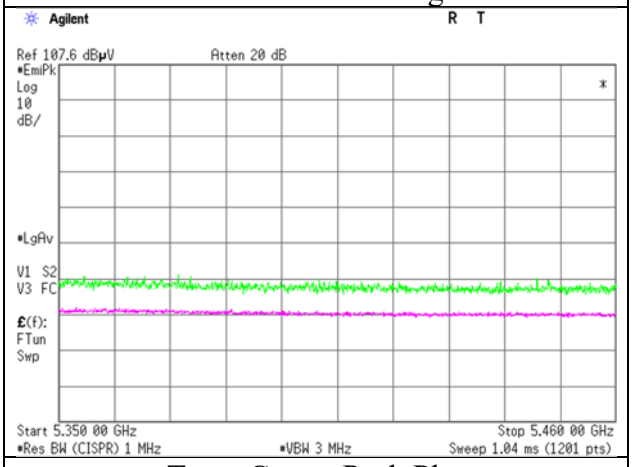
*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission

Report No.	12804674H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.3
Date	August 1, 2019
Temperature / Humidity	21 deg. C / 48 % RH
Engineer	Yuta Moriya
Mode	Tx 11n-40 5310 MHz

Horizontal

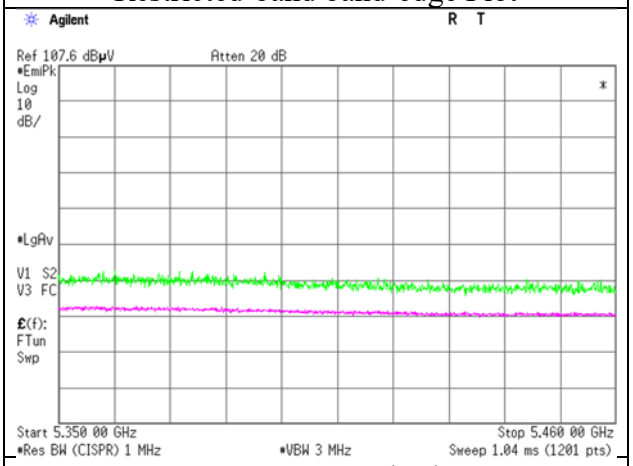
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No.	12804674H			
Test place	Ise EMC Lab.			
Semi Anechoic Chamber	No.3	No.3	No.3	No.3
Date	August 1, 2019	August 5, 2019	August 6, 2019	August 7, 2019
Temperature / Humidity	21 deg. C / 48 % RH	23 deg. C / 54 % RH	22 deg. C / 66 % RH	25 deg. C / 63 % RH
Engineer	Yuta Moriya	Akihiko Maeda	Junki Nagatomi	Akihiko Maeda
	(1 GHz - 10 GHz)	(10 GHz - 18 GHz)	(18 GHz - 26.5 GHz)	(26.5 GHz - 40 GHz)
Mode	Tx 11n-40 5510 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	5460.000	PK	47.2	32.0	6.2	36.1	-	49.3	73.9	24.6	
Hori.	5470.000	PK	52.1	32.0	6.2	36.1	-	54.2	68.2	14.0	
Hori.	11020.000	PK	45.6	39.9	-2.2	36.1	-	47.2	73.9	26.7	
Hori.	16530.000	PK	44.5	39.2	-0.9	36.2	-	46.6	73.9	27.3	Floor noise
Hori.	22040.000	PK	45.3	38.6	-1.6	32.6	-	49.8	73.9	24.1	Floor noise
Hori.	5460.000	AV	35.8	32.0	6.2	36.1	2.7	40.7	53.9	13.2	*1)
Hori.	11020.000	AV	37.7	39.9	-2.2	36.1	2.7	42.0	53.9	11.9	
Hori.	16530.000	AV	36.8	39.2	-0.9	36.2	-	38.9	53.9	15.0	Floor noise
Hori.	22040.000	AV	37.0	38.6	-1.6	32.6	-	41.5	53.9	12.4	Floor noise
Vert.	5460.000	PK	47.5	32.0	6.2	36.1	-	49.6	73.9	24.3	
Vert.	5470.000	PK	53.1	32.0	6.2	36.1	-	55.2	68.2	13.0	
Vert.	11020.000	PK	45.9	39.9	-2.2	36.1	-	47.5	73.9	26.4	
Vert.	16530.000	PK	44.7	39.2	-0.9	36.2	-	46.8	73.9	27.2	Floor noise
Vert.	22040.000	PK	45.8	38.6	-1.6	32.6	-	50.2	73.9	23.7	Floor noise
Vert.	5460.000	AV	34.9	32.0	6.2	36.1	2.7	39.8	53.9	14.1	*1)
Vert.	11020.000	AV	39.4	39.9	-2.2	36.1	2.7	43.7	53.9	10.2	
Vert.	16530.000	AV	36.8	39.2	-0.9	36.2	-	38.9	53.9	15.0	Floor noise
Vert.	22040.000	AV	37.0	38.6	-1.6	32.6	-	41.4	53.9	12.5	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor

*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

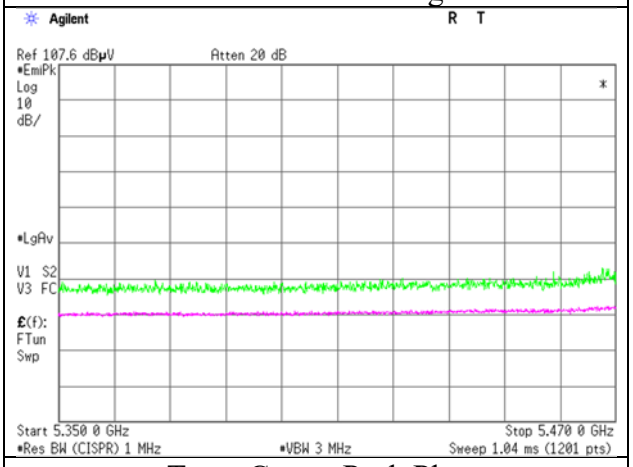
*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission

Report No.	12804674H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.3
Date	August 1, 2019
Temperature / Humidity	21 deg. C / 48 % RH
Engineer	Yuta Moriya
Mode	Tx 11n-40 5510 MHz

Horizontal

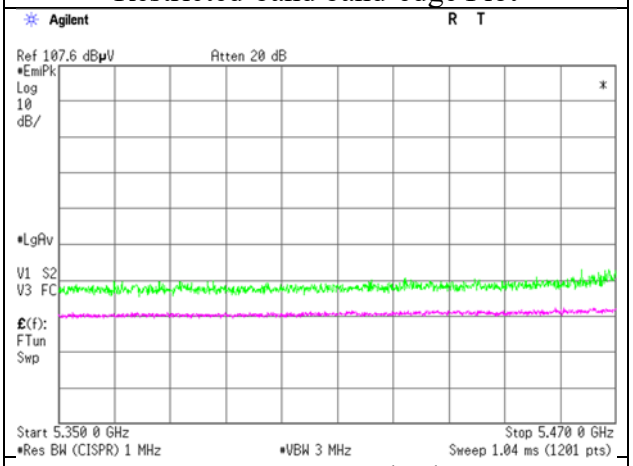
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No.	12804674H			
Test place	Ise EMC Lab.			
Semi Anechoic Chamber	No.3	No.3	No.3	No.3
Date	August 1, 2019	August 5, 2019	August 6, 2019	August 7, 2019
Temperature / Humidity	21 deg. C / 48 % RH	23 deg. C / 54 % RH	22 deg. C / 66 % RH	25 deg. C / 63 % RH
Engineer	Yuta Moriya (1 GHz - 10 GHz)	Akihiko Maeda (10 GHz - 18 GHz)	Junki Nagatomi (18 GHz - 26.5 GHz)	Akihiko Maeda (26.5 GHz - 40 GHz)
Mode	Tx 11n-40 5550 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	11100.000	PK	45.2	39.6	-2.1	36.1	-	46.6	73.9	27.3	
Hori.	16650.000	PK	45.1	39.9	-0.9	36.1	-	48.1	73.9	25.8	Floor noise
Hori.	22200.000	PK	45.4	38.5	-1.5	32.6	-	49.8	73.9	24.1	Floor noise
Hori.	11100.000	AV	37.1	39.6	-2.1	36.1	2.7	41.2	53.9	12.8	
Hori.	16650.000	AV	36.4	39.9	-0.9	36.1	-	39.3	53.9	14.6	Floor noise
Hori.	22200.000	AV	36.8	38.5	-1.5	32.6	-	41.2	53.9	12.7	Floor noise
Vert.	11100.000	PK	45.5	39.6	-2.1	36.1	-	46.8	73.9	27.1	
Vert.	16650.000	PK	45.5	39.9	-0.9	36.1	-	48.5	73.9	25.4	Floor noise
Vert.	22200.000	PK	45.4	38.5	-1.5	32.6	-	49.9	73.9	24.1	Floor noise
Vert.	11100.000	AV	37.5	39.6	-2.1	36.1	2.7	41.6	53.9	12.3	
Vert.	16650.000	AV	36.3	39.9	-0.9	36.1	-	39.3	53.9	14.6	Floor noise
Vert.	22200.000	AV	37.0	38.5	-1.5	32.6	-	41.4	53.9	12.5	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor

*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

Distance factor:	1 GHz - 10 GHz	20log (4 m / 3.0 m) = 2.5 dB
	10 GHz - 40 GHz	20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Report No.	12804674H			
Test place	Ise EMC Lab.			
Semi Anechoic Chamber	No.3	No.3	No.3	No.3
Date	August 1, 2019	August 5, 2019	August 6, 2019	August 7, 2019
Temperature / Humidity	21 deg. C / 48 % RH	23 deg. C / 54 % RH	22 deg. C / 66 % RH	25 deg. C / 63 % RH
Engineer	Yuta Moriya (1 GHz - 10 GHz)	Akihiko Maeda (10 GHz - 18 GHz)	Junki Nagatomi (18 GHz - 26.5 GHz)	Akihiko Maeda (26.5 GHz - 40 GHz)
Mode	Tx 11n-40 5670 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	5725.000	PK	50.5	32.4	6.3	36.1	-	53.1	68.2	15.1	
Hori.	11340.000	PK	45.5	40.0	-2.0	36.1	-	47.3	73.9	26.6	
Hori.	17010.000	PK	45.6	40.8	-0.9	35.6	-	49.8	73.9	24.1	Floor noise
Hori.	22680.000	PK	45.1	38.6	-1.4	32.4	-	49.8	73.9	24.1	Floor noise
Hori.	11340.000	AV	37.6	40.0	-2.0	36.1	2.7	42.1	53.9	11.8	
Hori.	17010.000	AV	36.6	40.8	-0.9	35.6	-	40.9	53.9	13.0	Floor noise
Hori.	22680.000	AV	36.7	38.6	-1.4	32.4	-	41.5	53.9	12.4	Floor noise
Vert.	5725.000	PK	49.4	32.4	6.3	36.1	-	52.1	68.2	16.1	
Vert.	11340.000	PK	45.7	40.0	-2.0	36.1	-	47.5	73.9	26.5	
Vert.	17010.000	PK	45.3	40.8	-0.9	35.6	-	49.5	73.9	24.4	Floor noise
Vert.	22680.000	PK	46.0	38.6	-1.4	32.4	-	50.7	73.9	23.2	Floor noise
Vert.	11340.000	AV	38.5	40.0	-2.0	36.1	2.7	43.0	53.9	10.9	
Vert.	17010.000	AV	36.7	40.8	-0.9	35.6	-	41.0	53.9	12.9	Floor noise
Vert.	22680.000	AV	36.9	38.6	-1.4	32.4	-	41.7	53.9	12.2	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor

*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

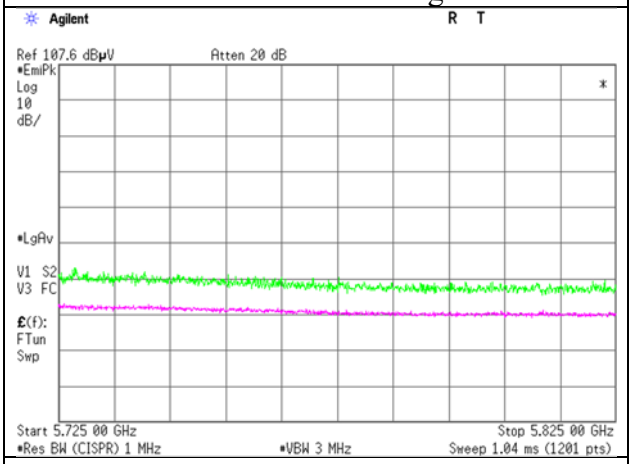
Distance factor:	1 GHz - 10 GHz	20log (4 m / 3.0 m) = 2.5 dB
	10 GHz - 40 GHz	20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Report No.	12804674H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.3
Date	August 1, 2019
Temperature / Humidity	21 deg. C / 48 % RH
Engineer	Yuta Moriya
Mode	Tx 11n-40 5670 MHz

Horizontal

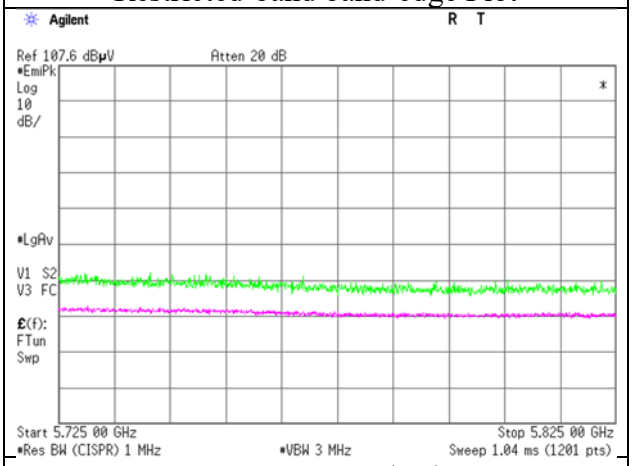
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 12804674H
Test place Ise EMC Lab.
Semi Anechoic Chamber No.4
Date November 8, 2019
Temperature / Humidity 22 deg. C / 56 % RH
Engineer Akihiko Maeda
(Above 1 GHz)
Mode Tx 11n-40 5710 MHz

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	11420.000	PK	44.7	40.2	-1.8	33.3	-	49.8	73.9	24.1	
Hori.	17130.000	PK	44.5	41.0	-0.1	32.7	-	52.6	73.9	21.3	Floor noise
Hori.	22840.000	PK	44.5	38.5	-0.3	33.5	-	49.2	73.9	24.7	Floor noise
Hori.	11420.000	AV	36.3	40.2	-1.8	33.3	2.7	44.2	53.9	9.8	
Hori.	17130.000	AV	35.8	41.0	-0.1	32.7	-	43.9	53.9	10.0	Floor noise
Hori.	22840.000	AV	36.8	38.5	-0.3	33.5	-	41.5	53.9	12.4	Floor noise
Vert.	11420.000	PK	45.1	40.2	-1.8	33.3	-	50.2	73.9	23.7	
Vert.	17130.000	PK	43.6	41.0	-0.1	32.7	-	51.8	73.9	22.2	Floor noise
Vert.	22840.000	PK	44.6	38.5	-0.3	33.5	-	49.3	73.9	24.6	Floor noise
Vert.	11420.000	AV	37.7	40.2	-1.8	33.3	2.7	45.5	53.9	8.4	
Vert.	17130.000	AV	35.9	41.0	-0.1	32.7	-	44.0	53.9	9.9	Floor noise
Vert.	22840.000	AV	36.7	38.5	-0.3	33.5	-	41.4	53.9	12.5	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Report No.	12804674H			
Test place	Ise EMC Lab.			
Semi Anechoic Chamber	No.3	No.3	No.3	No.3
Date	August 1, 2019	August 5, 2019	August 6, 2019	August 7, 2019
Temperature / Humidity	21 deg. C / 48 % RH	23 deg. C / 54 % RH	22 deg. C / 66 % RH	25 deg. C / 63 % RH
Engineer	Yuta Moriya	Akihiko Maeda	Junki Nagatomi	Akihiko Maeda
	(1 GHz - 10 GHz)	(10 GHz - 18 GHz)	(18 GHz - 26.5 GHz)	(26.5 GHz - 40 GHz)
Mode	Tx 11n-40 5755 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	5650.000	PK	46.8	32.0	6.3	36.1	-	48.9	68.2	19.3	
Hori.	5700.000	PK	48.7	32.3	6.3	36.1	-	51.2	105.2	54.0	
Hori.	5720.000	PK	55.5	32.4	6.3	36.1	-	58.1	110.8	52.7	
Hori.	5725.000	PK	54.8	32.4	6.3	36.1	-	57.5	122.2	64.7	
Hori.	11510.000	PK	45.0	40.0	-1.9	36.2	-	46.9	73.9	27.0	
Hori.	17265.000	PK	46.0	42.3	-0.7	35.7	-	51.9	73.9	22.0	Floor noise
Hori.	23020.000	PK	45.2	38.6	-1.4	32.4	-	50.0	73.9	23.9	Floor noise
Hori.	11510.000	AV	37.3	40.0	-1.9	36.2	2.7	41.9	53.9	12.0	
Hori.	17265.000	AV	37.2	42.3	-0.7	35.7	-	43.1	53.9	10.8	Floor noise
Hori.	23020.000	AV	37.0	38.6	-1.4	32.4	-	41.8	53.9	12.1	Floor noise
Vert.	5650.000	PK	46.1	32.0	6.3	36.1	-	48.2	68.2	20.0	
Vert.	5700.000	PK	48.3	32.3	6.3	36.1	-	50.9	105.2	54.3	
Vert.	5720.000	PK	55.5	32.4	6.3	36.1	-	58.2	110.8	52.7	
Vert.	5725.000	PK	53.0	32.4	6.3	36.1	-	55.6	122.2	66.6	
Vert.	11510.000	PK	45.3	40.0	-1.9	36.2	-	47.2	73.9	26.7	
Vert.	17265.000	PK	46.0	42.3	-0.7	35.7	-	51.9	73.9	22.0	Floor noise
Vert.	23020.000	PK	45.4	38.6	-1.4	32.4	-	50.3	73.9	23.6	Floor noise
Vert.	11510.000	AV	37.7	40.0	-1.9	36.2	2.7	42.4	53.9	11.5	
Vert.	17265.000	AV	37.1	42.3	-0.7	35.7	-	43.0	53.9	10.9	Floor noise
Vert.	23020.000	AV	36.7	38.6	-1.4	32.4	-	41.6	53.9	12.3	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor

*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

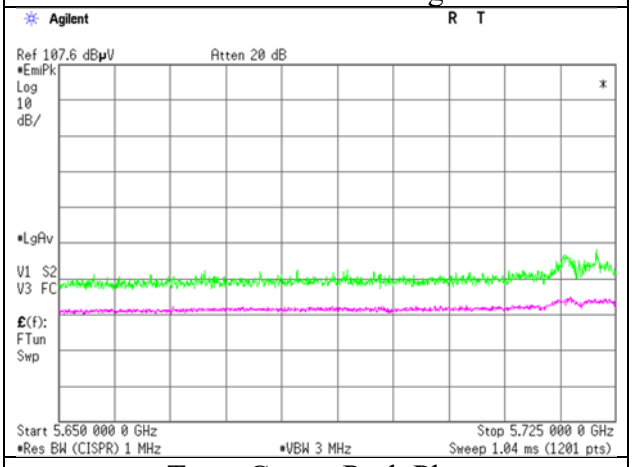
Distance factor:	1 GHz - 10 GHz	20log (4 m / 3.0 m) = 2.5 dB
	10 GHz - 40 GHz	20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Report No.	12804674H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.3
Date	August 1, 2019
Temperature / Humidity	21 deg. C / 48 % RH
Engineer	Yuta Moriya
Mode	Tx 11n-40 5755 MHz

Horizontal

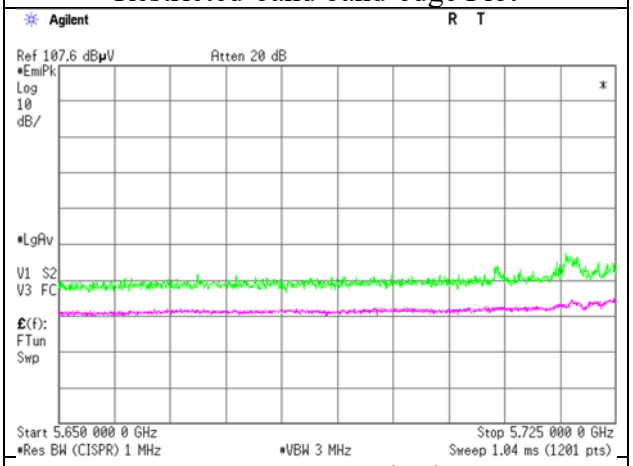
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No.	12804674H			
Test place	Ise EMC Lab.			
Semi Anechoic Chamber	No.3	No.3	No.3	No.3
Date	August 1, 2019	August 5, 2019	August 6, 2019	August 7, 2019
Temperature / Humidity	21 deg. C / 48 % RH	23 deg. C / 54 % RH	22 deg. C / 66 % RH	25 deg. C / 63 % RH
Engineer	Yuta Moriya (1 GHz - 10 GHz)	Akihiko Maeda (10 GHz - 18 GHz)	Junki Nagatomi (18 GHz - 26.5 GHz)	Akihiko Maeda (26.5 GHz - 40 GHz)
Mode	Tx 11n-40 5795 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	5850.000	PK	48.8	32.5	6.4	36.1	-	51.6	122.2	70.6	
Hori.	5855.000	PK	46.3	32.5	6.4	36.1	-	49.1	110.8	61.7	
Hori.	5875.000	PK	46.1	32.5	6.4	36.1	-	48.8	105.2	56.4	
Hori.	5925.000	PK	43.9	32.4	6.4	36.1	-	46.6	68.2	21.6	
Hori.	11590.000	PK	45.5	39.8	-1.9	36.2	-	47.2	73.9	26.7	
Hori.	17385.000	PK	46.1	43.3	-0.7	35.7	-	53.0	73.9	20.9	Floor noise
Hori.	23180.000	PK	46.0	38.7	-1.3	32.3	-	51.1	73.9	22.8	Floor noise
Hori.	11590.000	AV	37.1	39.8	-1.9	36.2	2.7	41.5	53.9	12.4	
Hori.	17385.000	AV	36.7	43.3	-0.7	35.7	-	43.6	53.9	10.3	Floor noise
Hori.	23180.000	AV	37.2	38.7	-1.3	32.3	-	42.3	53.9	11.6	Floor noise
Vert.	5850.000	PK	48.8	32.5	6.4	36.1	-	51.6	122.2	70.6	
Vert.	5855.000	PK	49.9	32.5	6.4	36.1	-	52.7	110.8	58.1	
Vert.	5875.000	PK	47.5	32.5	6.4	36.1	-	50.3	105.2	55.0	
Vert.	5925.000	PK	45.3	32.4	6.4	36.1	-	48.0	68.2	20.2	
Vert.	11590.000	PK	44.8	39.8	-1.9	36.2	-	46.5	73.9	27.4	
Vert.	17385.000	PK	46.7	43.3	-0.7	35.7	-	53.6	73.9	20.3	Floor noise
Vert.	23180.000	PK	46.1	38.7	-1.3	32.3	-	51.1	73.9	22.8	Floor noise
Vert.	11590.000	AV	36.6	39.8	-1.9	36.2	2.7	41.0	53.9	12.9	
Vert.	17385.000	AV	36.9	43.3	-0.7	35.7	-	43.8	53.9	10.1	Floor noise
Vert.	23180.000	AV	37.3	38.7	-1.3	32.3	-	42.4	53.9	11.5	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor

*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

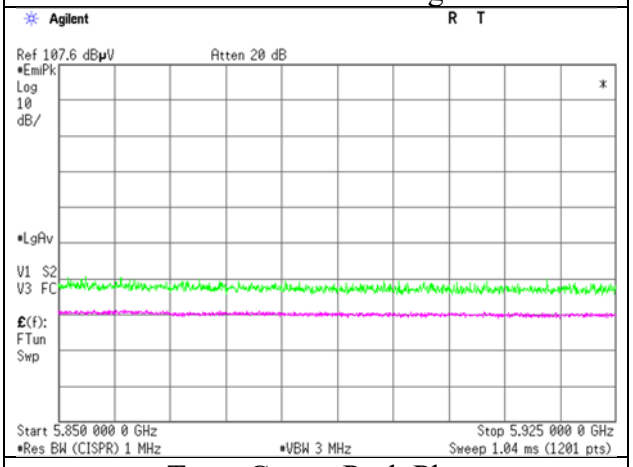
Distance factor:	1 GHz - 10 GHz	20log (4 m / 3.0 m) = 2.5 dB
	10 GHz - 40 GHz	20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Report No.	12804674H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.3
Date	August 1, 2019
Temperature / Humidity	21 deg. C / 48 % RH
Engineer	Yuta Moriya
Mode	Tx 11n-40 5795 MHz

Horizontal

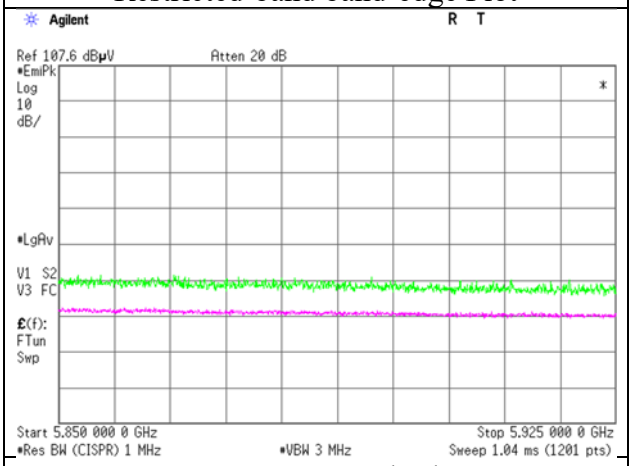
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No.	12804674H			
Test place	Ise EMC Lab.			
Semi Anechoic Chamber	No.3	No.3	No.3	No.3
Date	August 2, 2019	August 5, 2019	August 6, 2019	August 7, 2019
Temperature / Humidity	22 deg. C / 46 % RH	23 deg. C / 54 % RH	22 deg. C / 66 % RH	25 deg. C / 63 % RH
Engineer	Junki Nagatomi (1 GHz - 10 GHz)	Akihiko Maeda (10 GHz - 18 GHz)	Junki Nagatomi (18 GHz - 26.5 GHz)	Akihiko Maeda (26.5 GHz - 40 GHz)
Mode	Tx 11ac-80 5210 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	5150.000	PK	48.4	32.1	6.1	36.2	-	50.4	73.9	23.5	
Hori.	10420.000	PK	44.6	39.3	-2.5	36.6	-	44.8	73.9	29.1	Floor noise
Hori.	15630.000	PK	45.8	37.5	-0.9	36.5	-	45.9	73.9	28.1	Floor noise
Hori.	20876.000	PK	44.5	38.2	-1.8	32.9	-	48.1	73.9	25.8	Floor noise
Hori.	26095.000	PK	46.8	39.2	-0.8	30.6	-	54.6	73.9	19.3	Floor noise
Hori.	5150.000	AV	38.5	32.1	6.1	36.2	1.8	42.3	53.9	11.6	*1)
Hori.	10420.000	AV	35.5	39.3	-2.5	36.6	-	35.7	53.9	18.2	Floor noise
Hori.	15630.000	AV	37.3	37.5	-0.9	36.5	-	37.3	53.9	16.6	Floor noise
Hori.	20876.000	AV	38.8	38.2	-1.8	32.9	-	42.4	53.9	11.5	Floor noise
Hori.	26095.000	AV	38.9	39.2	-0.8	30.6	-	46.8	53.9	7.1	Floor noise
Vert.	5150.000	PK	50.6	32.1	6.1	36.2	-	52.6	73.9	21.3	
Vert.	10420.000	PK	44.1	39.3	-2.5	36.6	-	44.3	73.9	29.6	Floor noise
Vert.	15630.000	PK	45.7	37.5	-0.9	36.5	-	45.7	73.9	28.2	Floor noise
Vert.	20876.000	PK	44.5	38.2	-1.8	32.9	-	48.0	73.9	25.9	Floor noise
Vert.	26095.000	PK	46.8	39.2	-0.8	30.6	-	54.6	73.9	19.3	Floor noise
Vert.	5150.000	AV	39.9	32.1	6.1	36.2	1.8	43.8	53.9	10.2	*1)
Vert.	10420.000	AV	35.3	39.3	-2.5	36.6	-	35.5	53.9	18.4	Floor noise
Vert.	15630.000	AV	37.3	37.5	-0.9	36.5	-	37.3	53.9	16.6	Floor noise
Vert.	20876.000	AV	36.1	38.2	-1.8	32.9	-	39.6	53.9	14.3	Floor noise
Vert.	26095.000	AV	38.7	39.2	-0.8	30.6	-	46.5	53.9	7.4	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

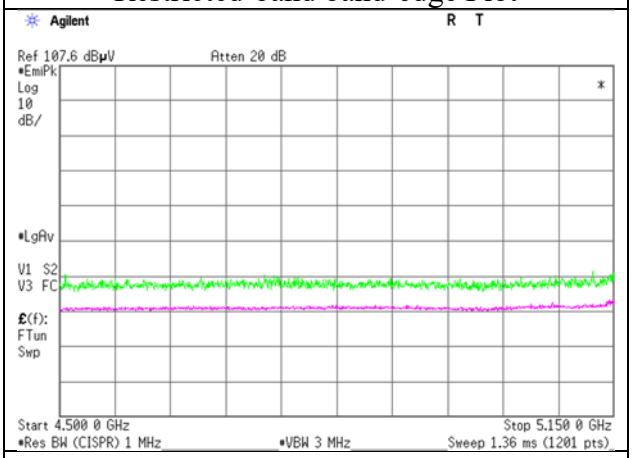
Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB
*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission

Report No.	12804674H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.3
Date	August 2, 2019
Temperature / Humidity	22 deg. C / 46 % RH
Engineer	Junki Nagatomi (1 GHz - 10 GHz)
Mode	Tx 11ac-80 5210 MHz

Horizontal

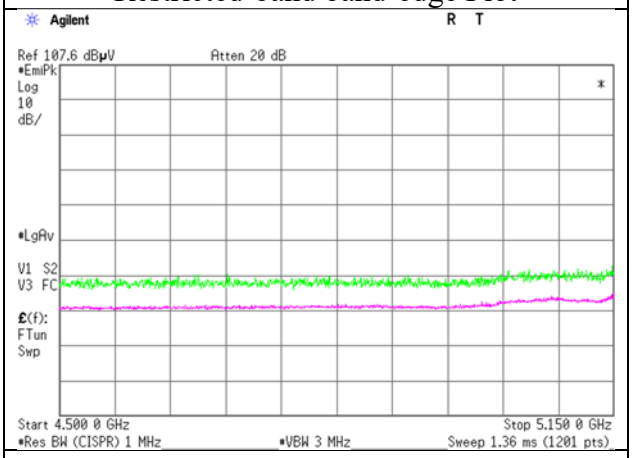
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No.	12804674H			
Test place	Ise EMC Lab.			
Semi Anechoic Chamber	No.3	No.3	No.3	No.3
Date	August 2, 2019	August 5, 2019	August 6, 2019	August 7, 2019
Temperature / Humidity	22 deg. C / 46 % RH	23 deg. C / 54 % RH	22 deg. C / 66 % RH	25 deg. C / 63 % RH
Engineer	Junki Nagatomi (1 GHz - 10 GHz)	Akihiko Maeda (10 GHz - 18 GHz)	Junki Nagatomi (18 GHz - 26.5 GHz)	Akihiko Maeda (26.5 GHz - 40 GHz)
Mode	Tx 11ac-80 5290 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	5350.000	PK	48.1	31.9	6.2	36.1	-	50.0	73.9	23.9	
Hori.	10580.000	PK	44.2	39.5	-2.4	36.5	-	44.8	73.9	29.1	Floor noise
Hori.	15870.000	PK	45.3	37.3	-0.9	36.8	-	45.0	73.9	28.9	Floor noise
Hori.	21160.000	PK	45.6	38.5	-1.7	32.9	-	49.4	73.9	24.5	Floor noise
Hori.	26450.000	PK	47.3	39.6	-0.6	30.6	-	55.8	73.9	18.1	Floor noise
Hori.	5350.000	AV	38.4	31.9	6.2	36.1	1.8	42.1	53.9	11.8	*1)
Hori.	10580.000	AV	35.9	39.5	-2.4	36.5	-	36.5	53.9	17.4	Floor noise
Hori.	15870.000	AV	37.2	37.3	-0.9	36.8	-	36.8	53.9	17.1	Floor noise
Hori.	21160.000	AV	36.2	38.5	-1.7	32.9	-	40.0	53.9	13.9	Floor noise
Hori.	26450.000	AV	39.1	39.6	-0.6	30.6	-	47.5	53.9	6.4	Floor noise
Vert.	5350.000	PK	49.3	31.9	6.2	36.1	-	51.2	73.9	22.7	
Vert.	10580.000	PK	44.6	39.5	-2.4	36.5	-	45.1	73.9	28.8	Floor noise
Vert.	15870.000	PK	45.6	37.3	-0.9	36.8	-	45.2	73.9	28.7	Floor noise
Vert.	21160.000	PK	44.4	38.5	-1.7	32.9	-	48.3	73.9	25.6	Floor noise
Vert.	26450.000	PK	47.9	39.6	-0.6	30.6	-	56.4	73.9	17.5	Floor noise
Vert.	5350.000	AV	39.6	31.9	6.2	36.1	1.8	43.3	53.9	10.6	*1)
Vert.	10580.000	AV	35.6	39.5	-2.4	36.5	-	36.2	53.9	17.7	Floor noise
Vert.	15870.000	AV	37.1	37.3	-0.9	36.8	-	36.7	53.9	17.2	Floor noise
Vert.	21160.000	AV	36.2	38.5	-1.7	32.9	-	40.1	53.9	13.8	Floor noise
Vert.	26450.000	AV	39.2	39.6	-0.6	30.6	-	47.6	53.9	6.3	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

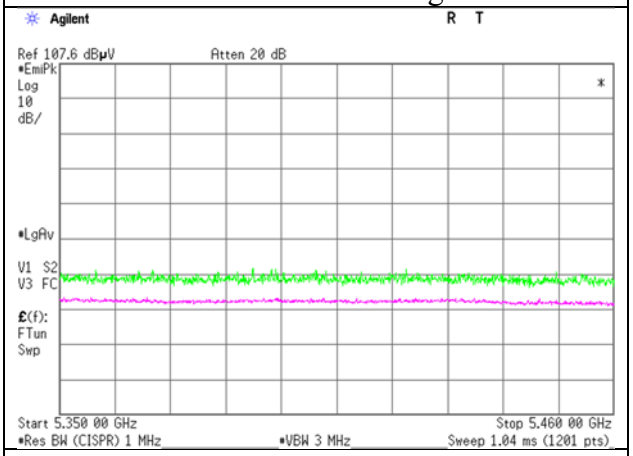
Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB
*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission

Report No.	12804674H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.3
Date	August 2, 2019
Temperature / Humidity	22 deg. C / 46 % RH
Engineer	Junki Nagatomi (1 GHz - 10 GHz)
Mode	Tx 11ac-80 5290 MHz

Horizontal

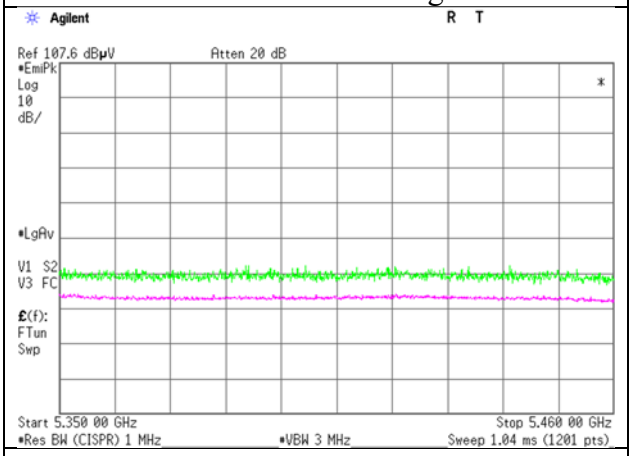
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No.	12804674H			
Test place	Ise EMC Lab.			
Semi Anechoic Chamber	No.3	No.3	No.3	No.3
Date	August 2, 2019	August 5, 2019	August 6, 2019	August 7, 2019
Temperature / Humidity	22 deg. C / 46 % RH	23 deg. C / 54 % RH	22 deg. C / 66 % RH	25 deg. C / 63 % RH
Engineer	Junki Nagatomi	Akihiko Maeda	Junki Nagatomi	Akihiko Maeda
	(1 GHz - 10 GHz)	(10 GHz - 18 GHz)	(18 GHz - 26.5 GHz)	(26.5 GHz - 40 GHz)
Mode	Tx 11ac-80 5530 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	5460.000	PK	47.8	32.0	6.2	36.1	-	49.9	73.9	24.0	
Hori.	5470.000	PK	48.6	32.0	6.2	36.1	-	50.8	68.2	17.4	
Hori.	11060.000	PK	44.6	39.8	-2.2	36.1	-	46.1	73.9	27.8	
Hori.	16590.000	PK	46.1	39.4	-0.9	36.2	-	48.5	73.9	25.5	Floor noise
Hori.	22120.000	PK	45.4	38.6	-1.6	32.6	-	49.8	73.9	24.1	Floor noise
Hori.	5460.000	AV	38.4	32.0	6.2	36.1	1.8	42.3	53.9	11.6	*1)
Hori.	11060.000	AV	36.5	39.8	-2.2	36.1	1.8	39.8	53.9	14.1	
Hori.	16590.000	AV	36.8	39.4	-0.9	36.2	-	39.2	53.9	14.7	Floor noise
Hori.	22120.000	AV	37.1	38.6	-1.6	32.6	-	41.5	53.9	12.4	Floor noise
Vert.	5460.000	PK	49.5	32.0	6.2	36.1	-	51.6	73.9	22.3	
Vert.	5470.000	PK	50.2	32.0	6.2	36.1	-	52.3	68.2	15.9	
Vert.	11060.000	PK	45.5	39.8	-2.2	36.1	-	47.0	73.9	27.0	
Vert.	16590.000	PK	46.1	39.4	-0.9	36.2	-	48.5	73.9	25.5	Floor noise
Vert.	22120.000	PK	45.2	38.6	-1.6	32.6	-	49.7	73.9	24.2	Floor noise
Vert.	5460.000	AV	39.4	32.0	6.2	36.1	1.8	43.4	53.9	10.5	*1)
Vert.	11060.000	AV	38.2	39.8	-2.2	36.1	1.8	41.5	53.9	12.4	
Vert.	16590.000	AV	36.8	39.4	-0.9	36.2	-	39.2	53.9	14.7	Floor noise
Vert.	22120.000	AV	36.9	38.6	-1.6	32.6	-	41.3	53.9	12.6	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

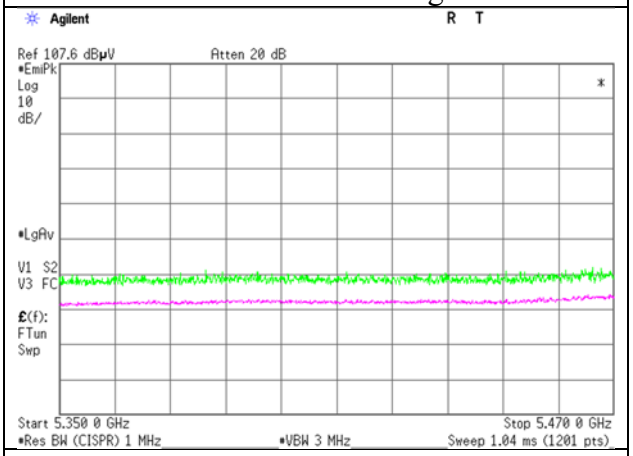
Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB
*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission

Report No.	12804674H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.3
Date	August 2, 2019
Temperature / Humidity	22 deg. C / 46 % RH
Engineer	Junki Nagatomi (1 GHz - 10 GHz)
Mode	Tx 11ac-80 5530 MHz

Horizontal

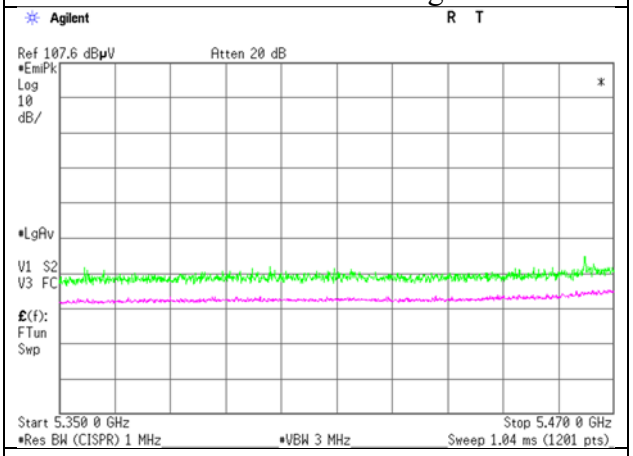
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No.	12804674H			
Test place	Ise EMC Lab.			
Semi Anechoic Chamber	No.3	No.3	No.3	No.3
Date	August 2, 2019	August 5, 2019	August 6, 2019	August 7, 2019
Temperature / Humidity	22 deg. C / 46 % RH	23 deg. C / 54 % RH	22 deg. C / 66 % RH	25 deg. C / 63 % RH
Engineer	Junki Nagatomi (1 GHz - 10 GHz)	Akihiko Maeda (10 GHz - 18 GHz)	Junki Nagatomi (18 GHz - 26.5 GHz)	Akihiko Maeda (26.5 GHz - 40 GHz)
Mode	Tx 11ac-80 5610 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	5725.000	PK	47.1	32.4	6.3	36.1	-	49.7	68.2	18.5	
Hori.	11220.000	PK	45.2	39.6	-2.1	36.1	-	46.6	73.9	27.3	
Hori.	16830.000	PK	45.6	40.4	-0.9	35.8	-	49.2	73.9	24.7	Floor noise
Hori.	22440.000	PK	45.5	38.6	-1.5	32.5	-	50.1	73.9	23.9	Floor noise
Hori.	11220.000	AV	36.2	39.6	-2.1	36.1	1.8	39.4	53.9	14.5	
Hori.	16830.000	AV	36.3	40.4	-0.9	35.8	-	40.0	53.9	13.9	Floor noise
Hori.	22440.000	AV	36.7	38.6	-1.5	32.5	-	41.3	53.9	12.6	Floor noise
Vert.	5725.000	PK	46.5	32.4	6.3	36.1	-	49.1	68.2	19.1	
Vert.	11220.000	PK	45.8	39.6	-2.1	36.1	-	47.2	73.9	26.7	
Vert.	16830.000	PK	44.4	40.4	-0.9	35.8	-	48.1	73.9	25.8	Floor noise
Vert.	22440.000	PK	45.0	38.6	-1.5	32.5	-	49.6	73.9	24.3	Floor noise
Vert.	11220.000	AV	37.9	39.6	-2.1	36.1	1.8	41.1	53.9	12.8	
Vert.	16830.000	AV	36.6	40.4	-0.9	35.8	-	40.3	53.9	13.6	Floor noise
Vert.	22440.000	AV	36.6	38.6	-1.5	32.5	-	41.2	53.9	12.8	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor

*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

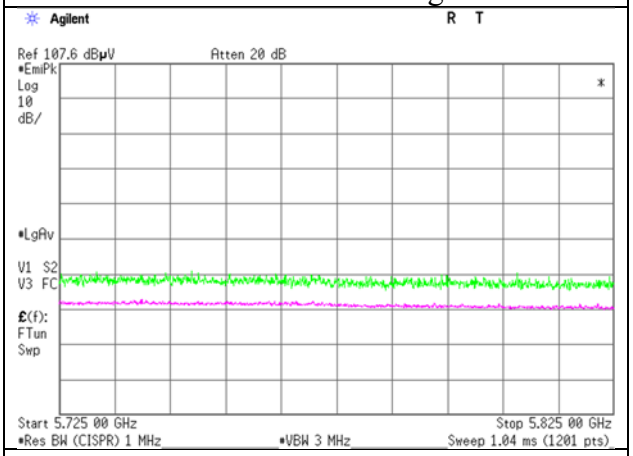
Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Report No.	12804674H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.3
Date	August 2, 2019
Temperature / Humidity	22 deg. C / 46 % RH
Engineer	Junki Nagatomi (1 GHz - 10 GHz)
Mode	Tx 11ac-80 5610 MHz

Horizontal

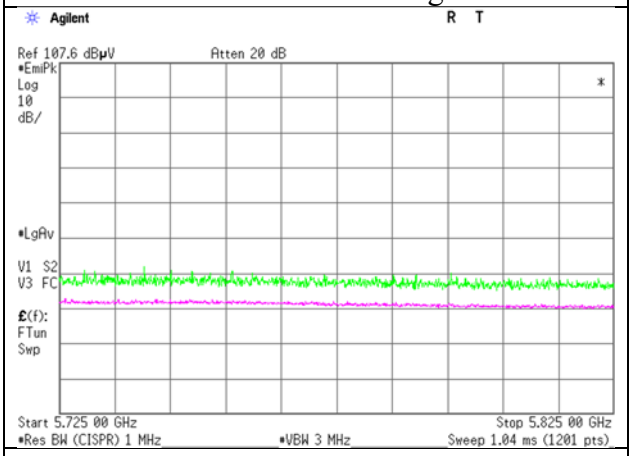
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 12804674H
Test place Ise EMC Lab.
Semi Anechoic Chamber No.4
Date November 8, 2019
Temperature / Humidity 22 deg. C / 56 % RH
Engineer Akihiko Maeda
(Above 1 GHz)
Mode Tx 11ac-80 5690 MHz

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	11380.000	PK	44.3	40.0	-1.8	33.3	-	49.3	73.9	24.6	
Hori.	17070.000	PK	43.4	40.9	-0.1	32.7	-	51.5	73.9	22.4	Floor noise
Hori.	22760.000	PK	45.1	38.5	-0.4	33.5	-	49.8	73.9	24.1	Floor noise
Hori.	11380.000	AV	36.5	40.0	-1.8	33.3	1.8	43.2	53.9	10.7	
Hori.	17070.000	AV	36.1	40.9	-0.1	32.7	-	44.2	53.9	9.8	Floor noise
Hori.	22760.000	AV	36.9	38.5	-0.4	33.5	-	41.5	53.9	12.4	Floor noise
Vert.	11380.000	PK	44.8	40.0	-1.8	33.3	-	49.8	73.9	24.1	
Vert.	17070.000	PK	43.1	40.9	-0.1	32.7	-	51.2	73.9	22.7	Floor noise
Vert.	22760.000	PK	45.6	38.5	-0.4	33.5	-	50.3	73.9	23.6	Floor noise
Vert.	11380.000	AV	36.9	40.0	-1.8	33.3	1.8	43.7	53.9	10.2	
Vert.	17070.000	AV	35.6	40.9	-0.1	32.7	-	43.6	53.9	10.3	Floor noise
Vert.	22760.000	AV	37.1	38.5	-0.4	33.5	-	41.8	53.9	12.2	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Report No.	12804674H			
Test place	Ise EMC Lab.			
Semi Anechoic Chamber	No.3	No.3	No.3	No.3
Date	August 2, 2019	August 5, 2019	August 6, 2019	August 7, 2019
Temperature / Humidity	22 deg. C / 46 % RH	23 deg. C / 54 % RH	22 deg. C / 66 % RH	25 deg. C / 63 % RH
Engineer	Junki Nagatomi	Akihiko Maeda	Junki Nagatomi	Akihiko Maeda
	(1 GHz - 10 GHz)	(10 GHz - 18 GHz)	(18 GHz - 26.5 GHz)	(26.5 GHz - 40 GHz)
Mode	Tx 11ac-80 5775 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	5650.000	PK	47.2	32.0	6.3	36.1	-	49.3	68.2	18.9	
Hori.	5700.000	PK	48.2	32.3	6.3	36.1	-	50.8	105.2	54.5	
Hori.	5720.000	PK	51.3	32.4	6.3	36.1	-	53.9	110.8	56.9	
Hori.	5725.000	PK	51.5	32.4	6.3	36.1	-	54.2	122.2	68.1	
Hori.	5850.000	PK	46.9	32.5	6.4	36.1	-	49.7	122.2	72.5	
Hori.	5855.000	PK	46.5	32.5	6.4	36.1	-	49.3	110.8	61.5	
Hori.	5875.000	PK	46.4	32.5	6.4	36.1	-	49.2	105.2	56.0	
Hori.	5925.000	PK	46.2	32.4	6.4	36.1	-	48.9	68.2	19.3	
Hori.	11550.000	PK	43.4	39.9	-1.9	36.2	-	45.3	73.9	28.6	Floor noise
Hori.	17325.000	PK	45.8	42.8	-0.7	35.7	-	52.1	73.9	21.8	Floor noise
Hori.	23100.000	PK	45.7	38.6	-1.4	32.3	-	50.6	73.9	23.3	Floor noise
Hori.	11550.000	AV	34.8	39.9	-1.9	36.2	-	36.7	53.9	17.2	Floor noise
Hori.	17325.000	AV	36.9	42.8	-0.7	35.7	-	43.2	53.9	10.7	Floor noise
Hori.	23100.000	AV	36.9	38.6	-1.4	32.3	-	41.9	53.9	12.0	Floor noise
Vert.	5650.000	PK	48.2	32.0	6.3	36.1	-	50.4	68.2	17.9	
Vert.	5700.000	PK	52.0	32.3	6.3	36.1	-	54.5	105.2	50.7	
Vert.	5720.000	PK	52.9	32.4	6.3	36.1	-	55.5	110.8	55.3	
Vert.	5725.000	PK	53.6	32.4	6.3	36.1	-	56.2	122.2	66.0	
Vert.	5850.000	PK	47.6	32.5	6.4	36.1	-	50.4	122.2	71.8	
Vert.	5855.000	PK	47.0	32.5	6.4	36.1	-	49.8	110.8	61.0	
Vert.	5875.000	PK	47.2	32.5	6.4	36.1	-	49.9	105.2	55.3	
Vert.	5925.000	PK	47.4	32.4	6.4	36.1	-	50.1	68.2	18.1	
Vert.	11550.000	PK	44.2	39.9	-1.9	36.2	-	46.0	73.9	27.9	Floor noise
Vert.	17325.000	PK	45.3	42.8	-0.7	35.7	-	51.7	73.9	22.2	Floor noise
Vert.	23100.000	PK	45.8	38.6	-1.4	32.3	-	50.7	73.9	23.2	Floor noise
Vert.	11550.000	AV	35.6	39.9	-1.9	36.2	-	37.4	53.9	16.5	Floor noise
Vert.	17325.000	AV	36.8	42.8	-0.7	35.7	-	43.1	53.9	10.8	Floor noise
Vert.	23100.000	AV	37.1	38.6	-1.4	32.3	-	42.0	53.9	11.9	Floor noise

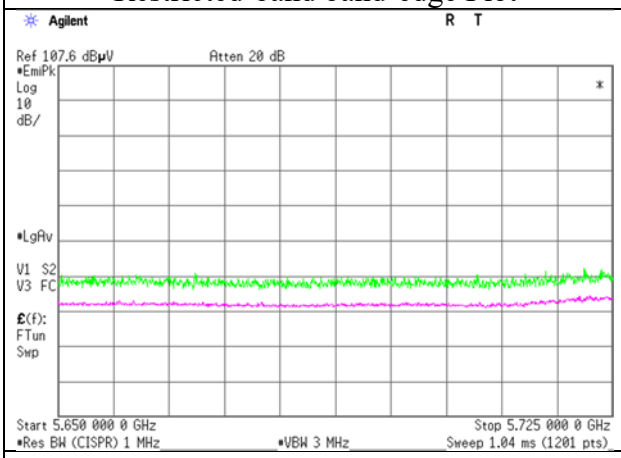
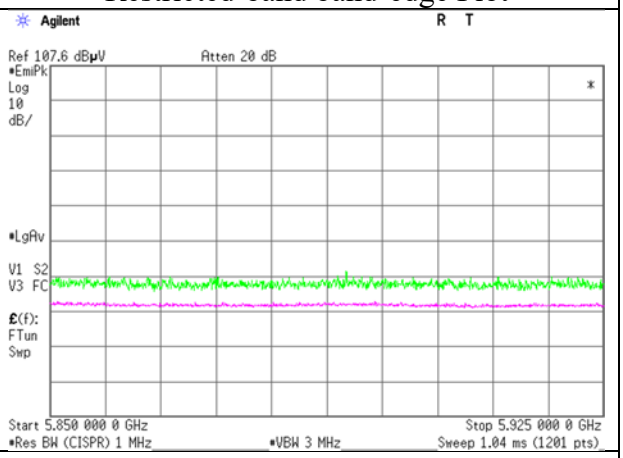
Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier)

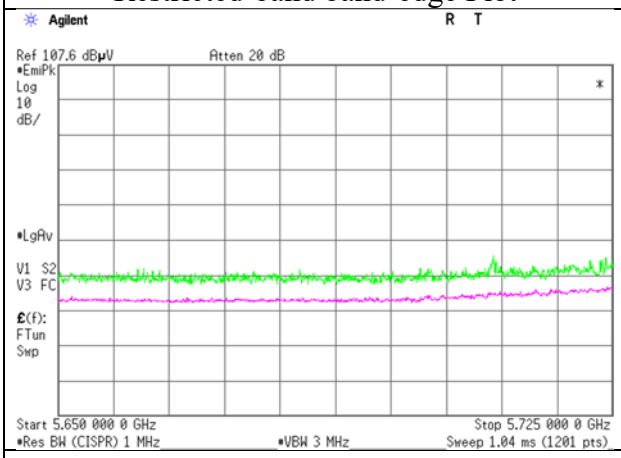
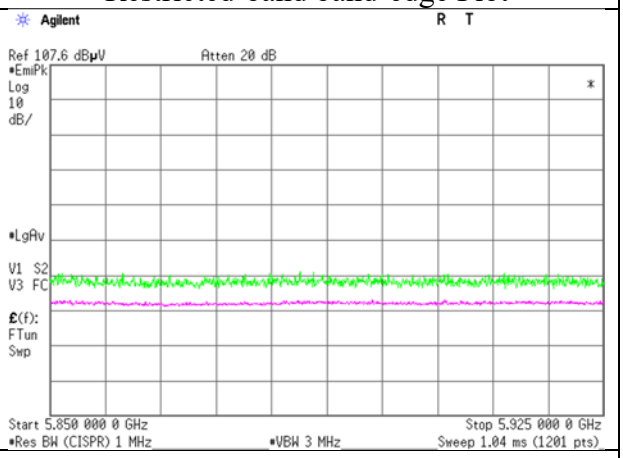
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Report No.	12804674H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.3
Date	August 2, 2019
Temperature / Humidity	22 deg. C / 46 % RH
Engineer	Junki Nagatomi (1 GHz - 10 GHz)
Mode	Tx 11ac-80 5775 MHz

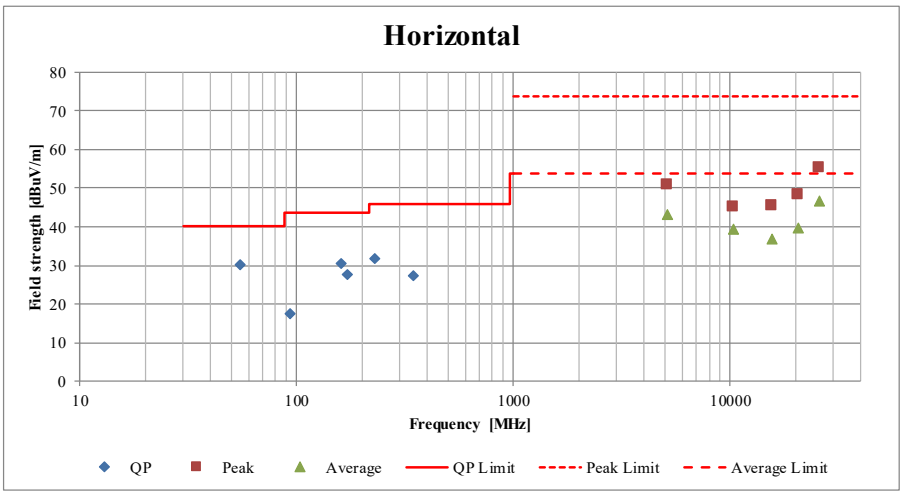
Horizontal	Horizontal
Restricted-band band-edge Plot	Restricted-band band-edge Plot
	
Trace Green: Peak Plot Trace Purple: Average Plot	Trace Green: Peak Plot Trace Purple: Average Plot

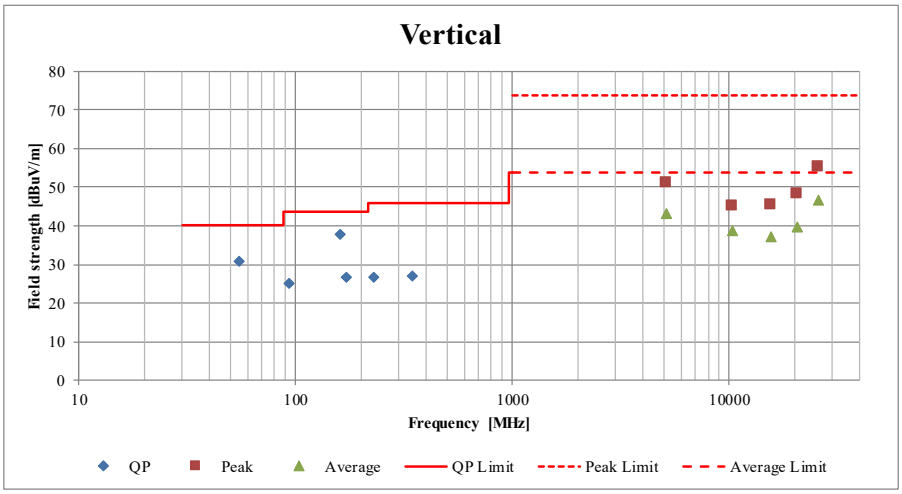
Vertical	Vertical
Restricted-band band-edge Plot	Restricted-band band-edge Plot
	
Trace Green: Peak Plot Trace Purple: Average Plot	Trace Green: Peak Plot Trace Purple: Average Plot

* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission
(Plot data, Worst case)

Report No.	12804674H				
Test place	Ise EMC Lab.				
Semi Anechoic Chamber	No.3	No.3	No.3	No.3	No.3
Date	August 1, 2019	August 5, 2019	August 6, 2019	August 7, 2019	August 6, 2019
Temperature / Humidity	22 deg. C / 56 % RH	22 deg. C / 58 % RH	22 deg. C / 66 % RH	25 deg. C / 63 % RH	22 deg. C / 66 % RH
Engineer	Koji Yamamoto	Junki Nagatomi	Junki Nagatomi	Akihiko Maeda	Akihiko Maeda
	(1 GHz - 10 GHz)	(10 GHz - 18 GHz)	(18 - 26.5GHz)	(26.5GHz - 40GHz)	(Below 1 GHz)
Mode	Tx 11n-20 5180 MHz				



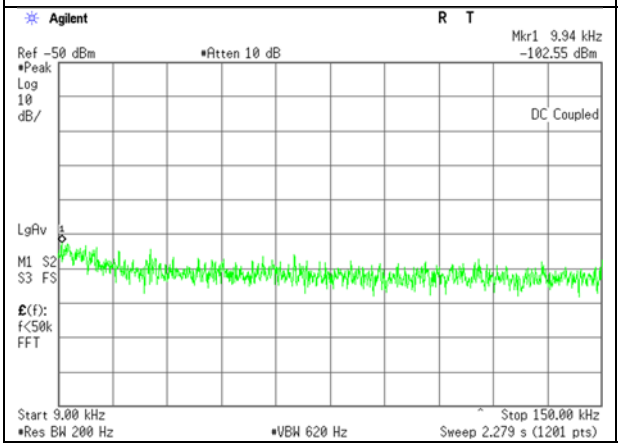


*These plots data contains sufficient number to show the trend of characteristic features for EUT.

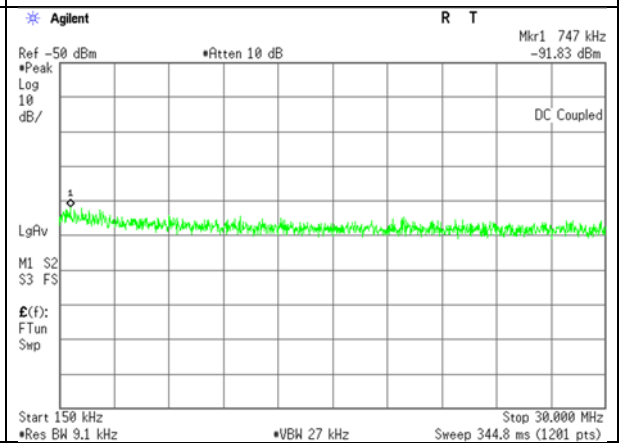
Conducted Spurious Emission

Report No.	12804674H
Test place	Ise EMC Lab. No.6 Measurement Room
Date	September 4, 2019
Temperature / Humidity	22 deg. C / 60 % RH
Engineer	Takumi Shimada
Mode	Tx 5180 MHz 11n-20

9 kHz - 150 kHz



150 kHz - 30 MHz



Frequency [kHz]	Reading [dBm]	Cable Loss [dB]	Attenuator [dB]	Antenna Gain* [dBi]	N (Number of Output)	EIRP [dBm]	Distance [m]	Ground bounce [dB]	E (field strength) [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
9.94	-102.6	2.90	9.8	2.0	2	-84.8	300	6.0	-23.5	47.6	71.1	
747.00	-91.8	2.91	9.8	2.0	2	-74.1	30	6.0	7.2	30.1	22.9	

E [dBuV/m] = EIRP [dBm] - 20 log (Distance [m]) + Ground bounce [dB] + 104.8 [dBuV/m]

EIRP[dBm] = Reading [dBm] + Cable loss [dB] + Attenuator Loss [dB] + Antenna gain [dBi] + 10 * log (N)

N: Number of output

*2.0 dBi was applied to the test result based on KDB 789033 since antenna gain was less than 2.0 dBi.

APPENDIX 2: Test instruments

Test Instruments -1/2

Test Item	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Calibration Due Date	Cal Int
AT	141815	Power Meter	DARE!! Instruments	RPR3006W	14I00048SNO083	11/15/2018	11/30/2019	12
AT	141174	Attenuator(20dB) (above1GHz)	HIROSE ELECTRIC CO.,LTD.	AT-120	901247	01/10/2019	01/31/2020	12
AT/RE	141547	DIGITAL HiTESTER	HIOKI	3805	60500120	02/25/2019	02/29/2020	12
AT	141414	Microwave Cable	Junkosha	MWX221	1207S407	08/06/2019	08/31/2020	12
AT	141902	Spectrum Analyzer	AGILENT	E4440A	MY46187105	10/04/2018	10/31/2019 *1)	12
AT	141561	Thermo-Hygrometer	CUSTOM	CTH-201	1401	01/11/2019	01/31/2020	12
RE	141554	Thermo-Hygrometer	CUSTOM	CTH-180	1301	01/11/2019	01/31/2020	12
RE	142013	AC3_Semi Anechoic Chamber(SVSWR)	TDK	Semi Anechoic Chamber 3m	DA-10005	04/08/2019	04/30/2021	24
RE	178648	EMI measurement program	TSJ	TEPTO-DV	-	-	-	-
RE	142183	Measure	KOMELON	KMC-36	-	-	-	-
RE	142008	AC3_Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	06/26/2018	06/30/2020	24
RE/AT	141532	DIGITAL HiTESTER	HIOKI	3805	51201197	01/29/2019	01/31/2020	12
RE	177964	Microwave Cable	Junkosha INC.	MMX221	1901S329(1m)/ 1902S579(5m)	03/05/2019	03/31/2020	12
RE	141576	Pre Amplifier	AGILENT	8449B	3008A01671	02/08/2019	02/29/2020	12
RE	141884	Spectrum Analyzer	AGILENT	E4448A	MY44020357	03/13/2019	03/31/2020	12
RE	141507	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	258	05/10/2019	05/31/2020	12
RE	141513	Horn Antenna 15-40GHz	Schwarzbeck	BBHA9170	BBHA9170306	05/10/2019	05/31/2020	12
RE	141580	MicroWave System Amplifier	AGILENT	83017A	MY39500779	03/05/2019	03/31/2020	12
RE	141293	High Pass Filter 7-20GHz	TOKIMEC	TF37NCCB	602	01/10/2019	01/31/2020	12
RE	141279	Microwave Cable	Junkosha	MMX221-00500DMS DMS	1502S303	03/05/2019	03/31/2020	12
RE	142314	Attenuator	Pasternack	PE7390-6	D/C 1504	06/11/2019	06/30/2020	12
RE	141582	Pre Amplifier	SONOMA INSTRUMENT	310	260834	02/08/2019	02/29/2020	12
RE	141266	Logperiodic Antenna (200-1000MHz)	Schwarzbeck	VUSLP9111B	9111B-191	08/24/2019	08/31/2020	12
RE	141152	EMI measurement program	TSJ	TEPTO-DV	-	-	-	-
RE	141517	Horn Antenna 26.5-40GHz	ETS LINDGREN	3160-10	152399	05/16/2019	05/31/2020	12
RE	160324	Coaxial Cable	Huber+Suhner	SUCOFLEX 102A	MY009/2A	11/08/2018	11/30/2019	12
RE	141950	EMI Test Receiver	Rohde & Schwarz	ESU26	100412	06/27/2019	06/30/2020	12
RE	141424	Biconical Antenna	Schwarzbeck	VHA9103+BBA9106	1915	08/24/2019	08/31/2020	12
RE	141323	Coaxial cable	UL Japan	-	-	07/02/2019	07/31/2020	12
AT	141173	Attenuator(10dB) (above1GHz)	HIROSE ELECTRIC CO.,LTD.	AT-110	-	12/17/2018	12/31/2019	12
AT	141224	Microwave Cable	Junkosha	MWX221	1409S496	03/05/2019	03/31/2020	12
AT	141835	Power sensor	AGILENT	N1923A	MY54070004	08/02/2019	08/31/2020	12
AT	141842	Power sensor	AGILENT	N1923A	MY54070003	08/02/2019	08/31/2020	12
AT	141812	Power Meter	AGILENT	8990B	MY51000271	08/02/2019	08/31/2020	12
AT	141361	Attenuator(10dB) 1-18GHz	Orient Microwave	BX10-0476-00	-	03/04/2019	03/31/2020	12
AT	141328	Microwave Cable 1G-40GHz	Suhner	SUCOFLEX102	28636/2	04/03/2019	04/30/2020	12
AT	141901	Spectrum Analyzer	AGILENT	E4440A	MY48250080	10/04/2018	10/31/2019	12
AT	141338	Attenuator	Weinschel Associates	WA1-20-33	100130	04/02/2019	04/30/2020	12
AT	141816	Power Meter	DARE!! Instruments	RPR3006W	14I00048SNO084	11/15/2018	11/30/2019	12
AT	141156	Attenuator(10dB)	Weinschel Corp	2	BL1173	11/02/2018	11/30/2019	12
AT	141221	Coaxial Cable	Suhner	NRG180	-	08/09/2019	08/31/2020	12
AT	141395	Coaxial Cable	UL Japan	-	-	11/13/2018	11/30/2019	12
AT	142820	Terminator	-	50ΩSMA	-	-	-	-
AT	141333	Attenuator(10dB)	Suhner	6810.19.A	-	12/06/2018	12/31/2019	12
AT	141952	Torque wrench	Huber+Suhner	74 Z-0-0-21	72536	03/12/2018	03/31/2021	36

Test Instruments -2/2

Test Item	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Calibration Due Date	Cal Int
RE	141226	Microwave Cable	Junkosha	MMX221-00500DMS DMS	1502S304	03/05/2019	03/31/2020	12
RE	141949	Test Receiver	Rohde & Schwarz	ESCI	100767	08/02/2019	08/31/2020	12
RE	141588	Pre Amplifier	MITEQ, Inc	AMF-6F-2600400-33-8P / AMF-4F-2600	1871355 /1871328	09/27/2019	09/30/2020	12
RE	148897	Attenuator	KEYSIGHT	8491A	MY52462349	12/20/2018	12/31/2019	12
RE	142017	AC4_Semi Anechoic Chamber(SVSWR)	TDK	Semi Anechoic Chamber 3m	DA-10005	04/04/2019	04/30/2021	24
RE	141506	Horn Antenna 15-40GHz	Schwarzbeck	BBHA9170	BBHA9170307	10/08/2019	10/31/2020	12
RE	141227	Microwave Cable	Junkosha	MMX221-00500DMS DMS	1502S305	03/05/2019	03/31/2020	12
RE	141294	High Pass Filter 7-20GHz	TOKIMEC	TF37NCCC	603	01/10/2019	01/31/2020	12
RE	141581	MicroWave System Amplifier	AGILENT	83017A	650	10/16/2019	10/31/2020	12
RE	141412	Microwave Cable	Junkosha	MWX221	1305S002R(1m) / 1405S146(5m)	06/17/2019	06/30/2020	12
RE	141508	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	9120D-557	09/26/2019	09/30/2020	12
RE	142227	Measure	KOMELON	KMC-36	-	-	-	-
RE	141562	Thermo-Hygrometer	CUSTOM	CTH-201	0010	01/11/2019	01/31/2020	12
AT	141900	Spectrum Analyzer	AGILENT	E4440A	MY46185823	11/15/2018	11/30/2019	12
AT	141334	Attenuator(10dB)	Suhner	6810.19.A	-	12/06/2018	12/31/2019	12

***1) This test equipment was used for the tests before the expiration date of the calibration.**

***Hyphens for Last Calibration Date, Calibration Due Date and Cal Int are instruments that Calibration is not required (e.g. software), or instruments checked in advance before use.**

The expiration date of the calibration is the end of the expired month.
All equipment is calibrated with valid calibrations. Each measurement data is traceable to the national or international standards.

As for some calibrations performed after the tested dates, those test equipment have been controlled by means of an unbroken chains of calibrations.

Test item:
RE: Radiated Emission
AT: Antenna Terminal Conducted test