

(Antenna Vertical, 30MHz to 25GHz)



Plot for Channel = 165

Channel	Frequency (MHz)	Antenna Horiz./ Vert.	Receiver Reading U _R (dBuV)	A _T (dB)	A _{Factor} (dB@3m)	Max. Emission E (dBµV/m)	Limit (dBµV/m)	Verdict	Detector Type
165	5850.00	Horizontal	46.42	-50.65	32.11	27.88	78.2	Pass	Peak
165	5850.00	Vertical	35.48	-50.65	32.11	16.94	78.2	Pass	reak



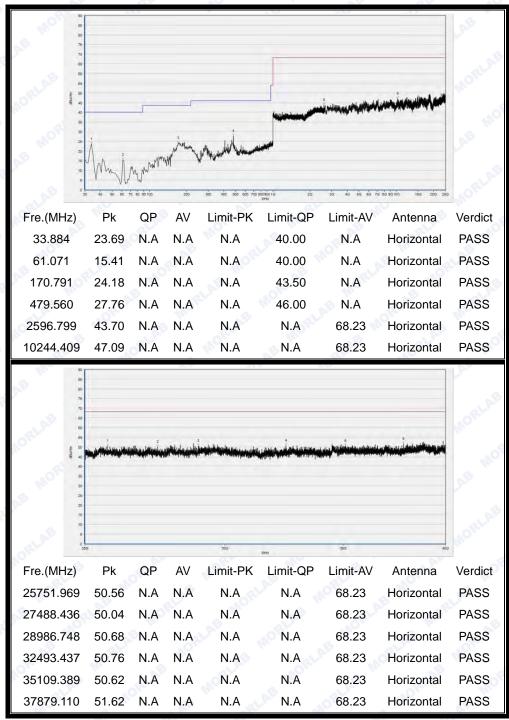
(Channel = 165 Horizontal @ 802.11a)



(Channel = 165 Vertical @ 802.11a)

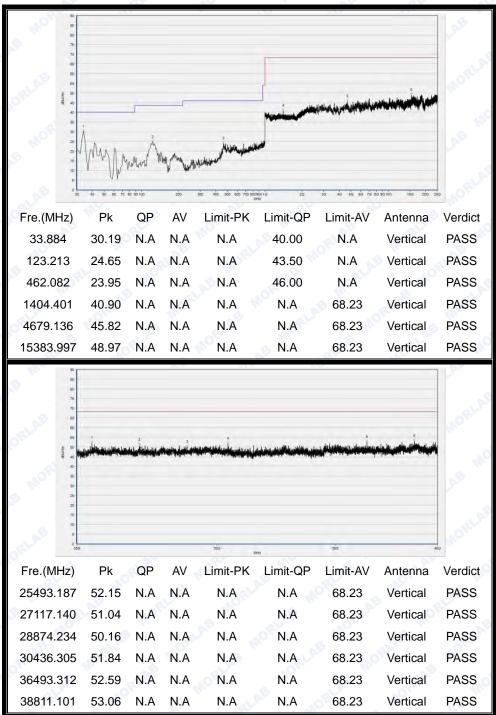






(Antenna Horizontal, 30MHz to 40GHz)





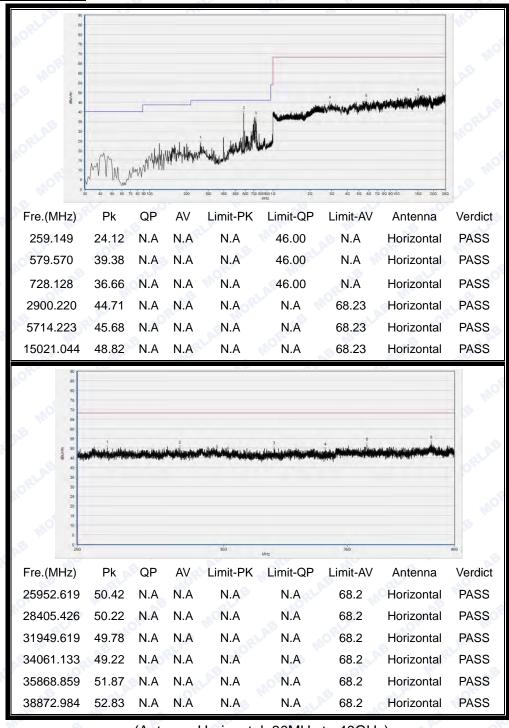
(Antenna Vertical, 30MHz to 40GHz)



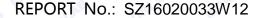
2.8.3.4 802.11ac-40MHz MIMO Test mode

A. Test Plots for the Whole Measurement Frequency Range:

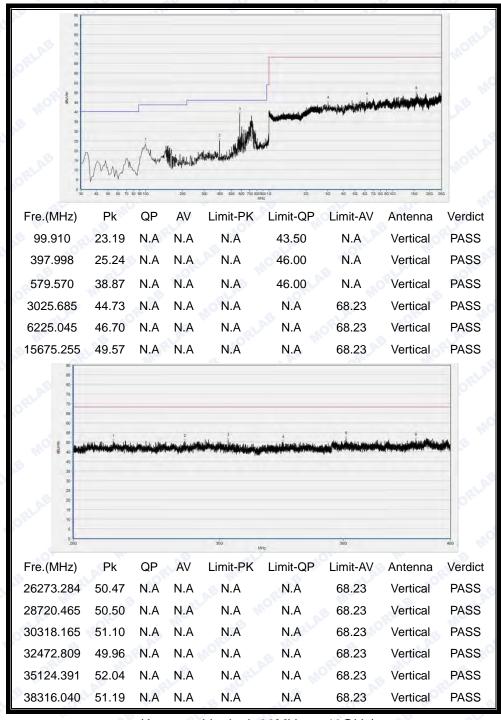
Plots for Channel = 38



(Antenna Horizontal, 30MHz to 40GHz)



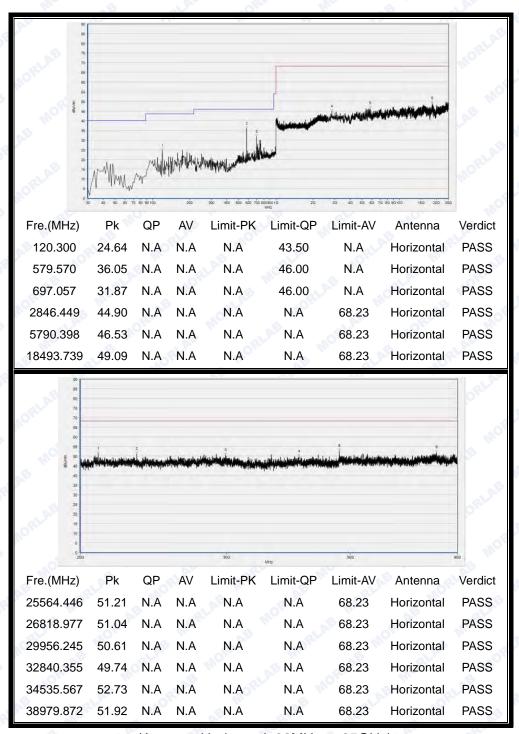




(Antenna Vertical, 30MHz to 40GHz)

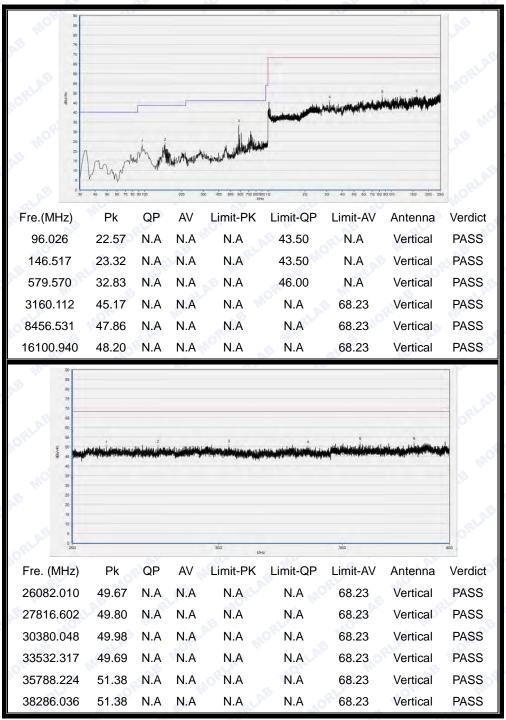


Plot for Channel = 46



(Antenna Horizontal, 30MHz to 25GHz)





(Antenna Vertical, 30MHz to 40GHz)



Plot for Channel = 151

Channel	Frequency (MHz)	Frequency Ar	Antenna	Receiver Reading A _T (A _T (dB)	A _T (dB)		Limit	Verdict	Detector
		Hz) Horiz./ Vert.	U _R (dBuV)	AT (UD)	(dB@3m)	Emission E (dBµV/m)	(dBµV/m)	verdict	Туре	
151	5715.00	Horizontal	48.67	-50.65	32.11	30.13	78.2	Pass	Peak	
151	5715.00	Vertical	41.52	-50.65	32.11	22.98	78.2	Pass	Feak	

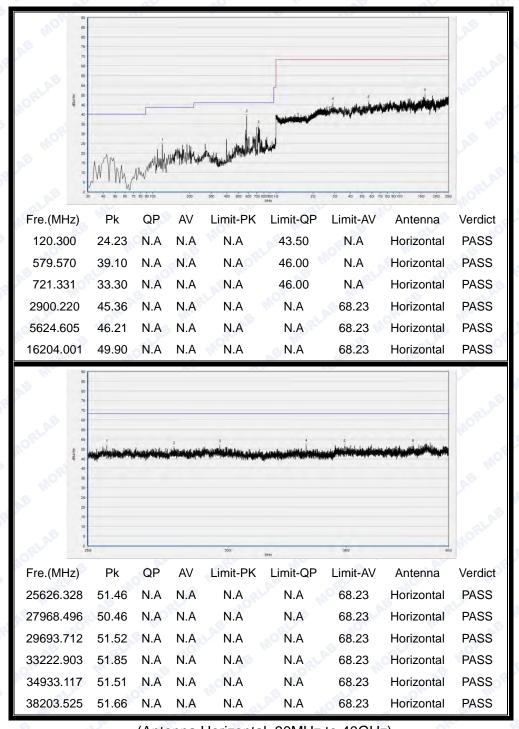


(Channel = 151 Horizontal @ 802.11ac)



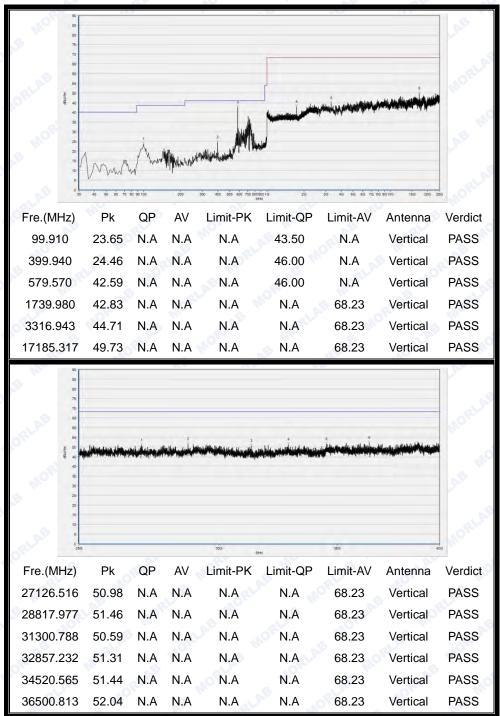
(Channel = 151 Vertical @ 802.11ac)





(Antenna Horizontal, 30MHz to 40GHz)





(Antenna Vertical, 30MHz to 40GHz)



Plots for Channel = 159

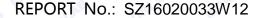
Channel	Frequency (MHz)	Antenna Horiz./ Vert.	Receiver Reading A _T (dB)	A _{Factor}	Max. Emission	Limit	Verdict	Detector	
			U _R (dBuV)		(dB@3m)	E (dBµV/m)	(dBµV/m)	voluiot	Type
159	5860.00	Horizontal	44.69	-50.65	32.11	26.15	78.2	Pass	Peak
159	5860.00	Vertical	39.73	-50.65	32.11	21.19	78.2	Pass	FEAK



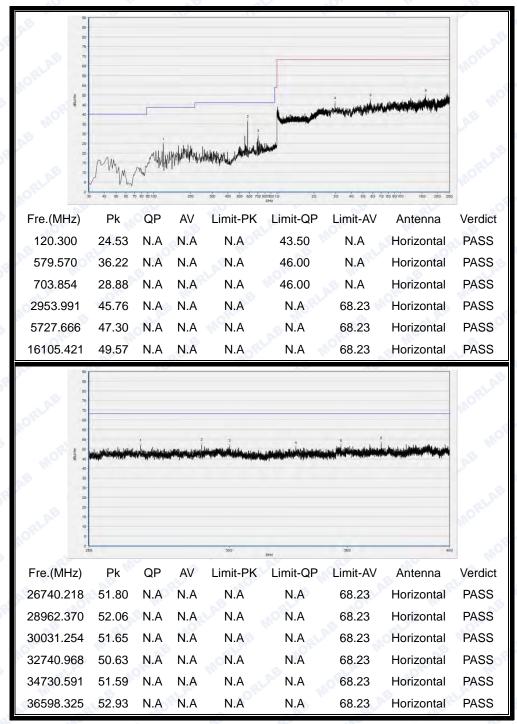
(Channel = 159 Horizontal @ 802.11ac)



(Channel = 159 Vertical @ 802.11ac)

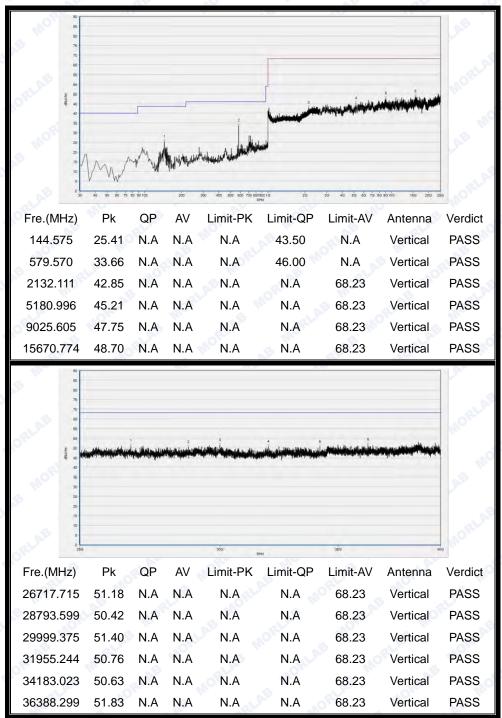






(Antenna Horizontal, 30MHz to 40GHz)





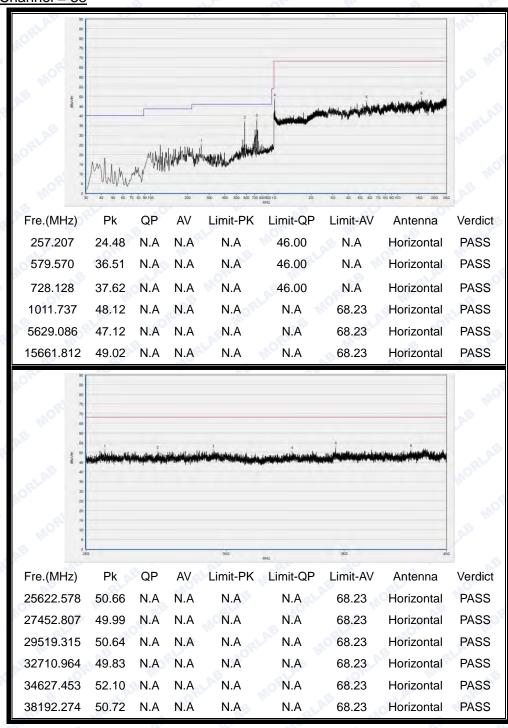
(Antenna Vertical, 30MHz to 40GHz)



2.8.3.5 802.11n-40MHz MIMO Test mode

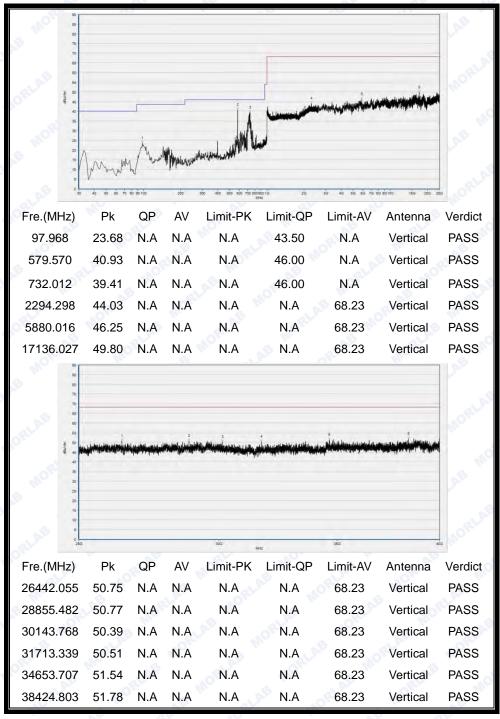
A. Test Plots for the Whole Measurement Frequency Range:

Plots for Channel = 38



(Antenna Horizontal, 30MHz to 40GHz)

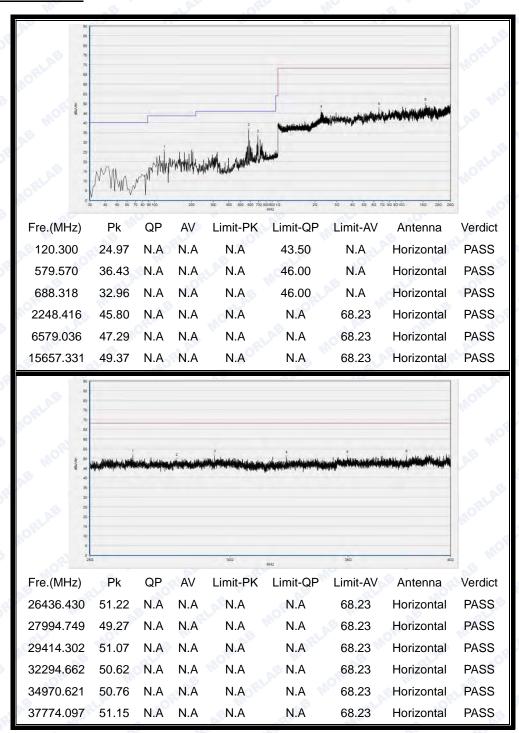




(Antenna Vertical, 30MHz to 40GHz)

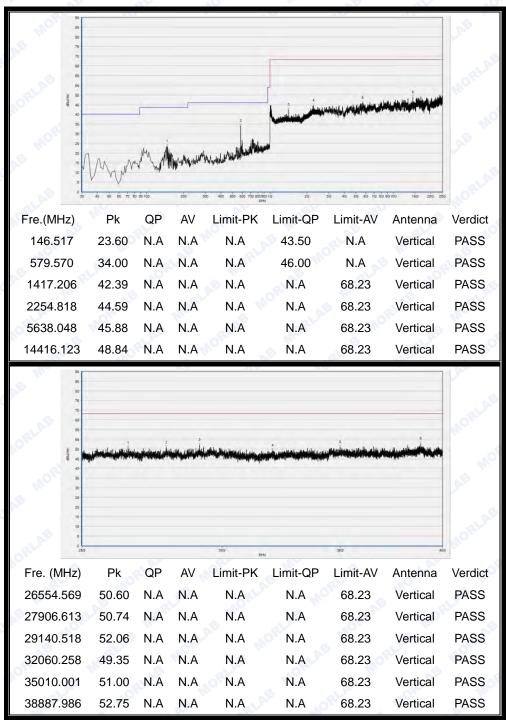


Plot for Channel = 46



(Antenna Horizontal, 30MHz to 25GHz)





(Antenna Vertical, 30MHz to 40GHz)

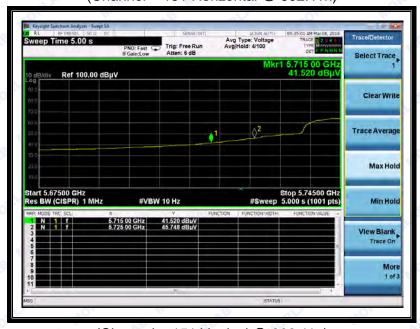


Plot for Channel = 151

Channel	Frequency	Antenna	Receiver Reading	A⊤(dB)	A _{Factor}	Max. Emission	Limit	Verdict	Detector
	(MHz)	Horiz./ Vert.	U _R (dBuV)	• • • • •	(dB@3m)	E (dBµV/m)	(dBµV/m)	VOIGIOU	Туре
151	5715.00	Horizontal	48.67	-50.65	32.11	30.13	78.2	Pass	Peak
151	5715.00	Vertical	41.52	-50.65	32.11	22.98	78.2	Pass	reak

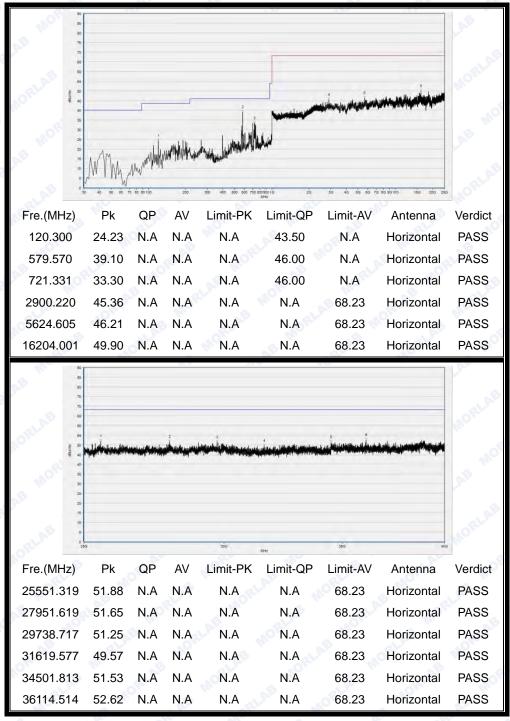


(Channel = 151 Horizontal @ 802.11n)



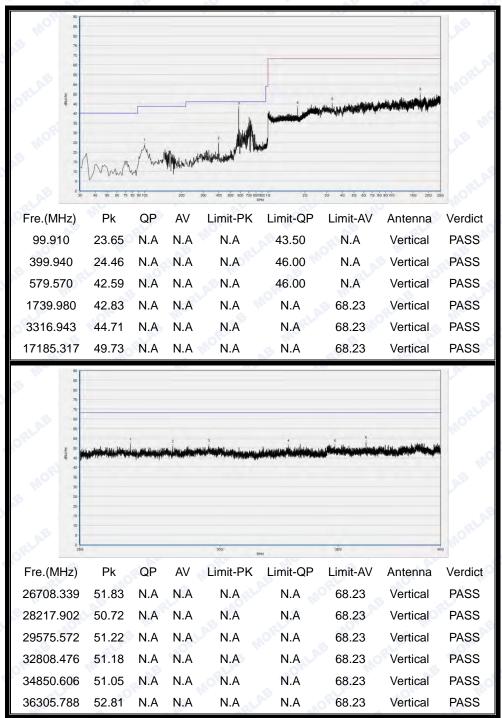
(Channel = 151 Vertical @ 802.11n)





(Antenna Horizontal, 30MHz to 40GHz)





(Antenna Vertical, 30MHz to 40GHz)



Plots for Channel = 159

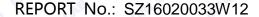
Channel	Frequency (MHz)		Receiver Reading A _T	A _T (dB)	A _{Factor}	Max. Emission E (dBμV/m)	Limit	Verdict	Detector
			U _R (dBuV)	, ,	(dB@3m)		(dBµV/m)		Туре
159	5860.00	Horizontal	44.62	-50.65	32.11	26.08	78.2	Pass	Peak
159	5860.00	Vertical	39.28	-50.65	32.11	20.74	78.2	Pass	reak



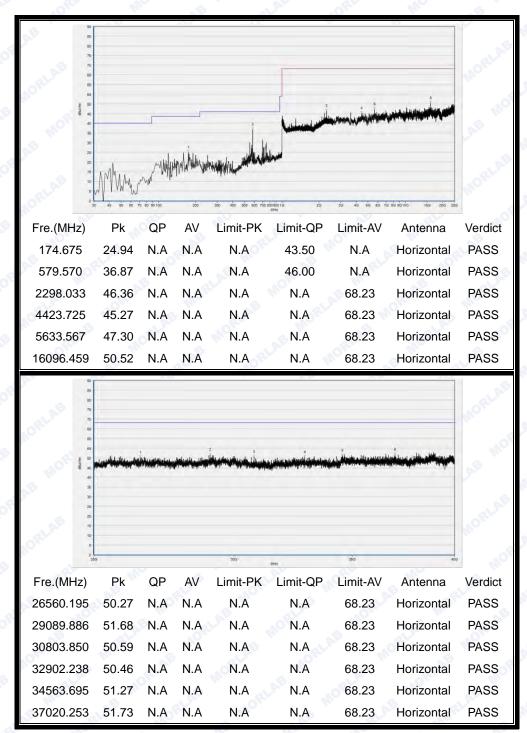
(Channel = 159 Horizontal @ 802.11n)



(Channel = 159 Vertical @ 802.11n)

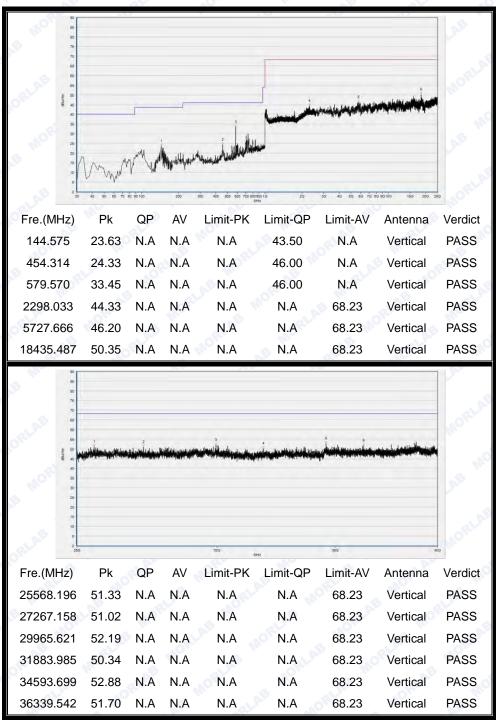






(Antenna Horizontal, 30MHz to 40GHz)





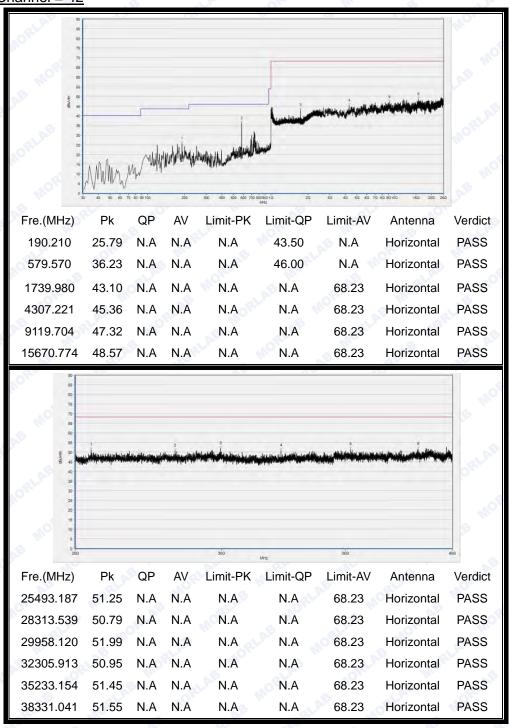
(Antenna Vertical, 30MHz to 40GHz)



2.8.3.6 802.11ac-80MHz MIMO Test mode

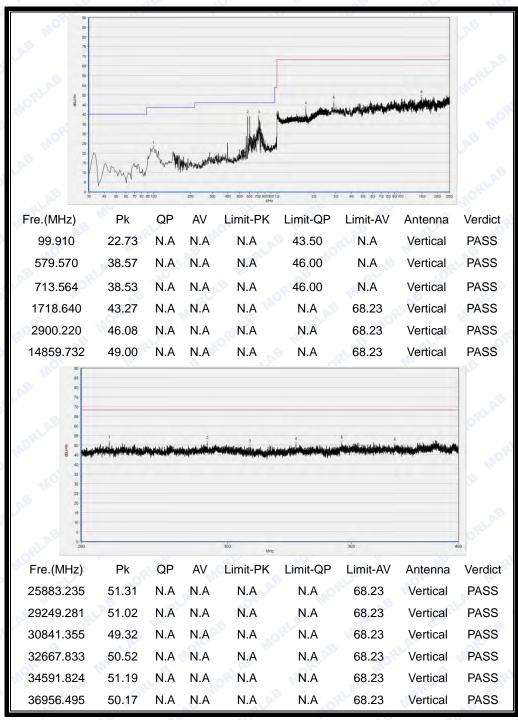
A. Test Plots for the Whole Measurement Frequency Range:

Plots for Channel = 42



(Antenna Horizontal, 30MHz to 40GHz)



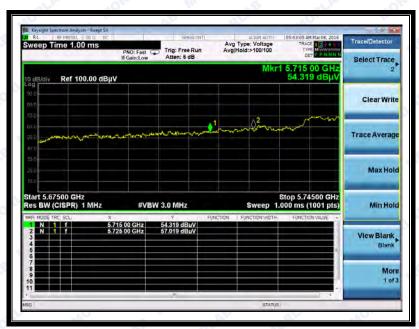


(Antenna Vertical, 30MHz to 40GHz)

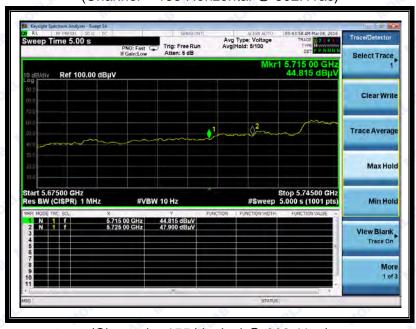


Plot for Channel = 155

Channel	Frequency (MHz)	Frequency	Antenna	Receiver Reading	A _T (dB)	A _{Factor}	Max. Emission	Limit	Verdict	Detector
		MHz) Horiz./ Vert.	U _R (dBuV)	AT (UD)	(dB@3m)	E (dBµV/m)	(dBµV/m)	verdict	Туре	
155	5715.00	Horizontal	54.32	-50.65	32.11	35.78	78.2	Pass	Peak	
155	5715.00	Vertical	44.82	-50.65	32.11	26.28	78.2	Pass	Feak	



(Channel = 155 Horizontal @ 802.11ac)



(Channel = 155 Vertical @ 802.11ac)



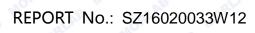
J	Channel	Frequency (MHz)	Antenna Horiz./ Vert.	Receiver Reading	A _T (dB)	A _{Factor}	Max. Emission	Limit (dBµV/m)	Verdict	Detector Type
L		, , Horiz./ Vert.	Honz./ vert.	Vert. U _R (dBuV)			E (dBµV/m)			туре
\$	155	5860.00	Horizontal	49.37	-50.65	32.11	30.83	78.2	Pass	Peak
	155	5860.00	Vertical	46.66	-50.65	32.11	28.12	78.2	Pass	i can



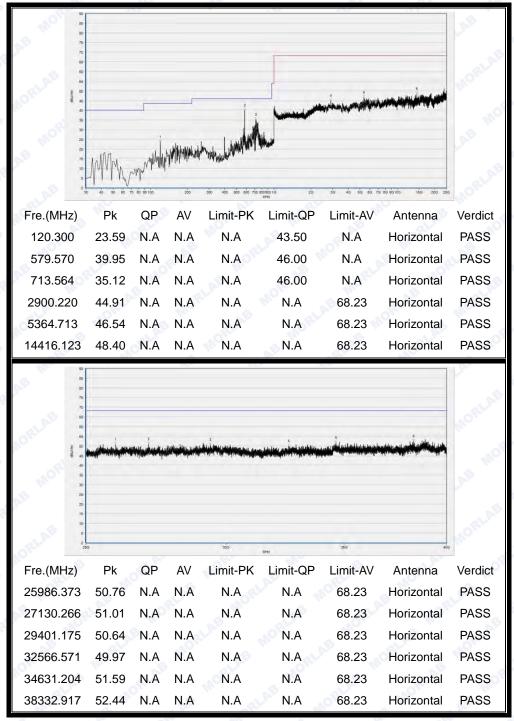
(Channel = 155 Horizontal @ 802.11ac)



(Channel = 155 Vertical @ 802.11ac)

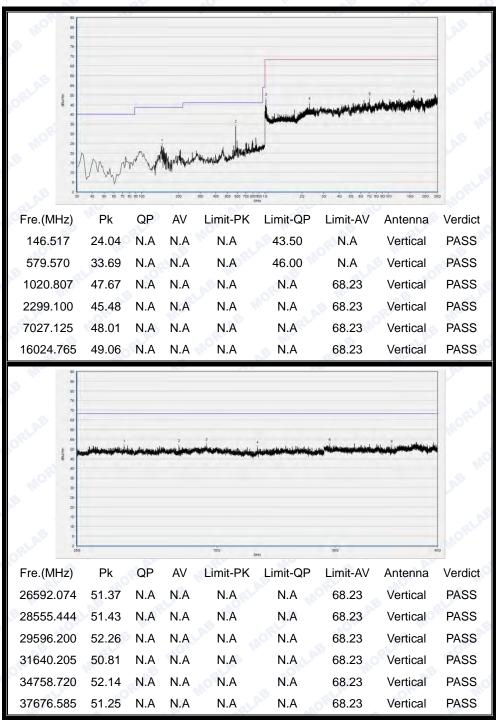






(Antenna Horizontal, 30MHz to 25GHz)





(Antenna Vertical, 30MHz to 25GHz)



ANNEX A GENERAL INFORMATION

1.1 Identification of the Responsible Testing Laboratory

Company Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Department:	Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Responsible Test Lab Manager:	Mr. Su Feng
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

1.2 Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd.
	Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang
	Road, Block 67, BaoAn District, ShenZhen, GuangDong
	Province, P. R. China

1.3 Facilities and Accreditations

All measurement facilities used to collect the measurement data are located at FL.1, Building A, FeiYang Science Park, Block 67, BaoAn District, Shenzhen, 518101 P. R. China. The test site is constructed in conformance with the requirements of ANSI C63.10 2013 and CISPR Publication 22; the FCC registration number is 695796.

1.4 Maximum measurement uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for test performed on the EUT as specified in CISPR 16-1-2:

Measurements	Frequency	Uncertainty		
Conducted emissions	9KHz~30MHz	2.44dB		
JRD MC AE	30MHz~200MHz	2.93		
De distant and others	200MHz~1000MHz	2.95		
Radiated emissions	1GHz~18GHz	2.26		
	18GHz~40GHz	1.94		

This uncertainty represent an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2



1.5 Test Equipments Utilized

1.5.1 Conducted Test Equipments

Cond	ducted Test Equipm	nent	LAE C	RILL	S ME	ORLA
No.	Equipment Name	Serial No.	Туре	Manufacturer	Cal. Date	Cal. Due
E1 1111	Spectrum Analyzer	MY45101810	E4407B	Agilent	2016.03.02	2017.03.01
2	Power Splitter	NW521	1506A	Weinschel	2016.03.02	2017.03.01
3	Attenuator 1	(n.a.)	10dB	Resnet	2016.03.02	2017.03.01
4	Attenuator 2	(n.a.)	3dB	Resnet	2016.03.02	2017.03.01
5	USB Wideband Power Sensor	MY52280010	U2021XA	Agilent	2016.03.02	2017.03.01
6	EXA Signal Analzyer	MY51440152	N9010A	Agilent	2016.03.02	2017.03.01
7	RF cable (30MHz-26GHz)	CB01	RF01	Morlab	N/A	N/A
8	Coaxial cable (30MHz-26GHz)	CB02	RF02	Morlab	N/A	N/A
9	SMA connector	CN01	RF03	HUBER-SUHNE R	N/A	N/A

1.5.2 Conducted Emission Test Equipments

Cond	ducted Emission Test	Equipments	S W	AE ORLAS	More	MA
No.	Equipment Name	Serial No.	Туре	Manufacturer	Cal. Date	Cal. Due
1	Receiver	US44210471	E7405A	Agilent	2016.03.02	2017.03.01
2	LISN	812744	NSLK 8127	Schwarzbeck	2016.03.02	2017.03.01
3	Pulse Limiter (20dB)	9391	VTSD 9561-D	Schwarzbeck	2016.03.02	2017.03.01
4	Coaxial cable (BNC) (30MHz-40GHz)	CB01	EMC01	Morlab	N/A	N/A



1.5.3 Radiated Test Equipments

Radia	ated Test Equipments					
No.	Equipment Name	Serial No.	Туре	Manufacturer	Cal. Date	Cal.Due Date
1 .	System Simulator	100448	CMU200	R&S	2016.03.02	2017.03.01
2	Receiver	US44210471	E7405A	Agilent	2016.03.02	2017.03.01
3	Test Antenna - Bi-Log	9163-274	9m*6m*6m	Albatross	2016.03.02	2017.03.01
4	Test Antenna - Horn	9120D-963	VULB 9163	Schwarzbeck	2016.03.02	2017.03.01
5	Test Antenna - Horn	71688	BBHA 9120D	Schwarzbeck	2016.03.02	2017.03.01
6	Test Antenna – Horn (26.5GHz)	C00589	MWH-1826/B	ARA	2016.03.02	2017.03.01
7.05	Test Antenna – Horn (40GHz)	C00981	MWH-2640/B	ARA	2016.03.02	2017.03.01
8	Test Antenna - Loop	1519-022	HL050S7	R&S	2016.03.02	2017.03.01
9	Reject Filter	(n.a.)	BRM50702	Micro-Tronics	2016.03.02	2017.03.01
10	Coaxial cable (BNC) (9KHz-30MHz)	CB04	EMC04	Morlab	N/A	N/A
11	Coaxial cable (BNC) (30MHz-40GHz)	CB01	EMC01	Morlab	N/A	N/A
12	1-18GHz pre-Amplifier	MA02	TS-PR18	Rohde&Schwar z	2016.03.02	2017.03.01
13	18-26.5GHz pre-Amplifier	MA03	TS-PR18	Rohde&Schwar z	2016.03.02	2017.03.01
14	26.5-40GHz pre-Amplifier	C00990	NSP4000-SP 2	Miteq	2016.03.02	2017.03.01

1.5.4 Climate Chamber

Clima	ate Chamber	Mole	S W	LAE ORLA	MORE	a ME
No.	Equipment Name	Serial No.	Туре	Manufacturer	Cal.Date	Cal.Due Date
1	Climate Chamber	2004012	HL4003T	Yinhe	2016.03.02	2017.03.01

1.5.5 Vibration Table

Vibra	ation Table	, MC AF	RLAN	MORE	ME	ORLAL MO
No.	Equipment Name	Serial No.	Туре	Manufacturer	Cal.Date	Cal.Due Date
ORLAL 1	Vibration Table	N/A	ACT2000- S015L	CMI-COM	2016.03.02	2017.03.01



1.5.6 Anechoic Chamber

Anec	hoic Chamber	AB ORLA	WOL	-E MI SLAE	ORLA	More B III
No.	Equipment Name	Serial No.	Type	Manufacturer	Cal.Date	Cal.Due Date
1	Anechoic Chamber	N/A	9m*6m*6m	Albatross	2016.03.02	2017.03.01

1.5.7 Auxiliary Test Equipment

Auxili	iary Test Equipmen	t AB ORLA				
No.	Equipment Name	Model No.	Brand Name	Manufacturer	Cal.Date	Cal.Due Date
1	Computer	T430i	Think Pad	Lenovo	N.A	N.A
2	AC Adapter	GSCU2000S0 12V24G	GSP	N.A	N.A	N.A

***** END OF REPORT *****