

FCC Test Report FCC ID: 2AA7Y-MOSHIQI002

Product: Symbus Q

Trade Name: Moshi Model Number: 99MO084218 Serial Model: 99MO084215, 99MO084216, 99MO084217

Report No.: SER180718405001E

Prepared for

Aevoe Inc.

27F,No.68,Zhong Xiao E.Rd,Sec.5,Xin Yi Dist,Taipei 110,Taiwan

Prepared by

Shenzhen NTEK Testing Technology Co., Ltd.

 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen P.R. China
 Tel.: +86-0755-61156588 Fax.: +86-0755-61156599 Website: www.ntek.org.cn





TEST RESULT CERTIFICATION

Applicant's name	Aevoe Inc.				
Address:	27F,No.68,Zhong Xiao E.Rd,Sec.5,Xin Yi Dist,Taipei 110,Taiwan				
Manufacturer's Name:	Aevoe Inc.				
Address	27F,No.68	,Zhong Xiao E.Rd,Sec.5,Xin Yi Dist,Taipei 110,Taiwan			
Product description					
Product name:	Symbus Q				
Model and/or type reference :	99MO0842	218, 99MO084215, 99MO084216, 99MO084217			
Standards	FCC part ² ANSI C63	15C:2018 .10:2013			
results show that the equipment un applicable only to the tested sample This report shall not be reproduced	der test (El e identified except in f t may be al	ull, without the written approval of Shenzhen NTEK Testing Itered or revised by Shenzhen NTEK Testing Technology Co.,			
The test results of this report relate Date of Test	•	tested sample identified in this report.			
Date (s) of performance of tests.	:	19 Jul. 2018 ~ 27 Sep. 2018			
Date of Issue	:	27 Sep. 2018			
Test Result	:	Pass			
Testing Engine	er :	Eileen Wu. (Eileen Liu)			
Technical Man	ager :	Jason chen			
		(Jason Chen)			
Authorized Sig	natory :	(Jason Chen) Sam . Chaw			
		(Sam Chen)			





Table of Contents	Page
1. TEST SUMMARY	4
1.1 FACILITIES AND ACCREDITATIONS	5
1.2 LABORATORY ACCREDITATIONS AND LISTINGS	5
1.3 MEASUREMENT UNCERTAINTY	5
2 . GENERAL INFORMATION	7
2.1 GENERAL DESCRIPTION OF EUT	7
2.2 DESCRIPTION OF TEST SETUP	9
2.3 DESCRIPTION TEST PERIPHERAL AND EUT PERIPHERAL	10
2.4 MEASUREMENT INSTRUMENTS LIST	11
3 . EMC EMISSION TEST	12
 3.1 CONDUCTED EMISSION MEASUREMENT 3.1.1 POWER LINE CONDUCTED EMISSION 3.1.2 TEST PROCEDURE 3.1.3 TEST SETUP 3.1.4 EUT OPERATING CONDITIONS 3.1.5 TEST RESULTS 	12 12 13 13 13 13
3.2 RADIATED EMISSION MEASUREMENT 3.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT 3.2.2 TEST PROCEDURE 3.2.3 TEST SETUP 3.2.4 TEST RESULTS	18 18 19 20 21
4. ANTENNA APPLICATION 4.1 Antenna Requirement 4.2 Result	26 26 26





1. TEST SUMMARY

Test procedures according to the technical standards:

EMC Emission						
Standard Test Item		FCC Rules	Limit	Judgment	Remark	
FCC part 15C:2018 ANSI C63.10:2013	Conducted Emission	§15.207	Class B	PASS		
	Radiated Emission	§15.209	Class B	PASS		
	ANTENNA APPLICATION	§15.203	/	PASS		

NOTE:

(1) 'N/A' denotes test is not applicable in this Test Report

(2) For client's request and manual description, the test will not be executed.



1.1 FACILITIES AND ACCREDITATIONS

All measurement facilities used to collect the measurement data are located at

1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen 518126 P.R. China.

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.10 and CISPR Publication 22.

1.2 LABORATORY ACCREDITATIONS AND LISTINGS

Site Description		
CNAS-Lab.	The Laboratory has been assessed and proved to be in	compliance with
	CNAS-CL01:2006 (identical to ISO/IEC 17025:2005)	
	The Certificate Registration Number is L5516.	
IC-Registration	The Certificate Registration Number is 9270A-1.	
FCC- Accredited	Test Firm Registration Number: 463705.	
	Designation Number: CN1184	
A2LA-Lab.	The Certificate Registration Number is 4298.01	
	This laboratory is accredited in accordance with the rec International Standard ISO/IEC 17025:2005 General re the competence of testing and calibration laboratories. This accreditation demonstrates technical competence scope and the operation of a laboratory quality manage (refer to joint ISO-ILAC-IAF Communiqué dated 8 Janua	quirements for for a defined ment system
Name of Firm	Shenzhen NTEK Testing Technology Co., Ltd.	
Site Location	1/F, Building E, Fenda Science Park, Sanwei Communi	y, Xixiang
	Street, Bao'an District, Shenzhen 518126 P.R. China.	

1.3 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U, (dB)	NOTE
NTEKC01	ANSI	150 KHz ~ 30MHz	3.2	

B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	U, (dB)	NOTE
NTEKA01	ANSI	30MHz ~ 1000MHz	4.7	
		1GHz ~12.4GHz	5.0	





Revision History

Report No.	Version	Description	Issued Date
SER180718405001E	Rev.01	Initial issue of report	27 Sep.2018



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

	Product Feature and Specification			
Equipment	Symbus Q			
Trade Name	Moshi			
FCC ID	2AA7Y-MOSHIQI002			
Model No.	99MO084218			
Serial Model	99MO084215, 99MO084216, 99MO084217			
Model Difference	All models are the same circuit and RF module, except the model No			
Operating Frequency	110kHz~140kHz			
Modulation Technique	Induction			
Antenna Type	Induction coil			
	AC supply:			
Power supply	Adapter supply: Model:FSP090-DIECN2 Input: 100-240V~1.5A, 50-60Hz Output: 19.0V4.74A MAX(90W MAX)			
Output	5W*2			
HW Version	1.2.4			
SW Version	1.2.4			



Report No.: SER180718405001E

2.1.1 DESCRIPTION OF TEST MODES

EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

EUT Exercise

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

The following summary table is showing all test modes to demonstrate in compliance with the standard.

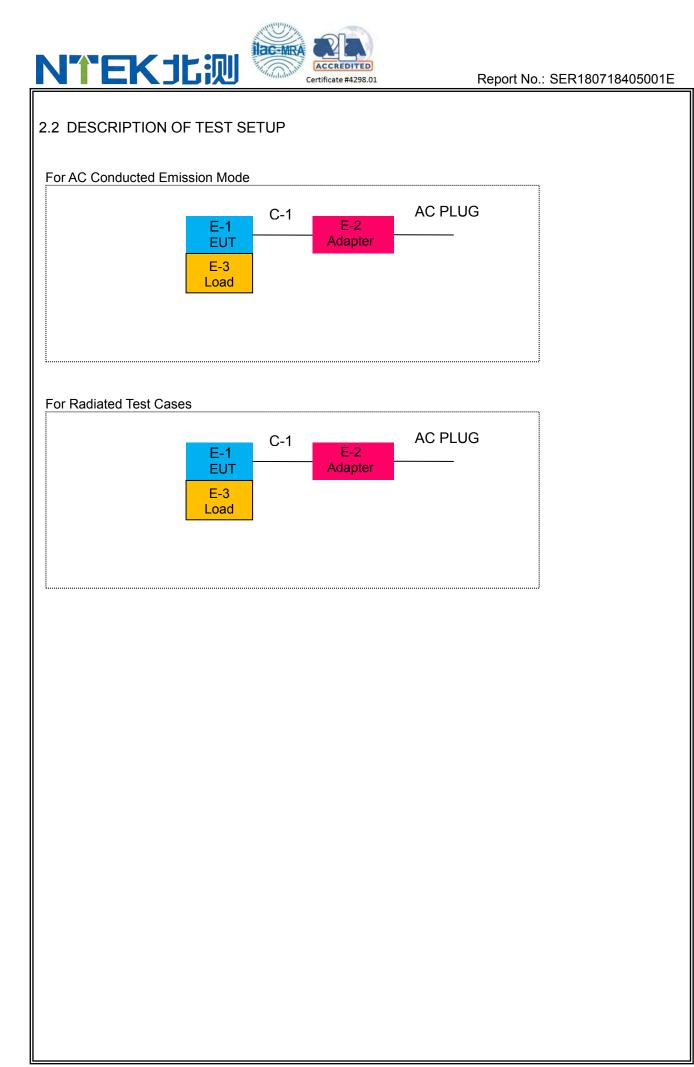
Test Cases			
Test Item	Data Rate/ Modulation		
AC Conducted Emission	Mode 1: Max load*		
Radiated Test Cases	Mode 1: Max load		

(*)EUT can only access the specified load, can not adjust the size of the load

Carrier Frequency and Channel list:

Channel	Frequency(MHz)
1	0.110
2	0.131
3	0.140

The EUT supports one voltage input and output. The EUT performs one voltage mode pretests.





2.3 DESCRIPTION TEST PERIPHERAL AND EUT PERIPHERAL

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Note
EUT
Peripherals
Peripherals
-

Item	Cable Type	Shielded Type	Ferrite Core	Length	Note
C-1	DC Cable	NO	YES	1.45m	

Note:

(1) The support equipment was authorized by Declaration of Confirmation.

(2) For detachable type I/O cable should be specified the length in cm in $\[$ Length $\]$ column.

(3) "YES" means "shielded" "with core"; "NO" means "unshielded" "without core".

NTEK北测



2.4 MEASUREMENT INSTRUMENTS LIST

ilac-MR

ACCRED

Certificate #4298.01

Radiation Test equipment

	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibrati on period
1	Spectrum Analyzer	Aglient	E4407B	MY45108040	2018.05.19	2019.05.18	1 year
2	Spectrum Analyzer	Agilent	N9020A	MY49100060	2017.10.26	2018.10.25	1 year
4	Test Receiver	R&S	ESPI	101318	2018.05.19	2019.05.18	1 year
5	Bilog Antenna	TESEQ	CBL6111D	31216	2018.04.08	2019.04.07	1 year
6	50Ω Coaxial Switch	Anritsu	MP59B	6200983705	2018.05.19	2019.05.18	1 year
7	Amplifier	EMC	EMC051835 SE	980246	2017.12.06	2018.12.06	1 year
8	Amplifier	MITEQ	TTA1840-35- HG	177156	2018.08.05	2019.08.04	1 year
9	Loop Antenna	ARA	PLA-1030/B	1029	2018.05.19	2019.05.18	1 year
10	Test Cable (9KHz-30MHz)	N/A	R-01	N/A	2017.04.21	2020.04.20	3 year
11	Test Cable (30MHz-1GHz)	N/A	R-02	N/A	2017.04.21	2020.04.20	3 year

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Test Receiver	R&S	ESCI	101160	2018.05.19	2019.05.18	1 year
2	LISN	R&S	ENV216	101313	2018.04.18	2019.04.17	1 year
3	LISN	SCHWARZBE CK	NNLK 8129	8129245	2018.05.19	2019.05.18	1 year
4	50Ω Coaxial Switch	ANRITSU CORP	MP59B	6200983704	2018.05.19	2019.05.18	1 year
5	Test Cable (9KHz-30MH z)	N/A	C01	N/A	2017.04.21	2020.04.20	3 year
6	Test Cable (9KHz-30MH z)	N/A	C02	N/A	2017.04.21	2020.04.20	3 year
7	Test Cable (9KHz-30MH z)	N/A	C03	N/A	2017.04.21	2020.04.20	3 year



3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION (Frequency Range 150KHz-30MHz)

	limit				
FREQUENCY (MHz)	Quasi-peak	Average			
0.15 -0.5	66 - 56 *	56 - 46 *			
0.50 -5.0	56.00	46.00			
5.0 -30.0	60.00	50.00			

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz



3.1.2 TEST PROCEDURE

a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

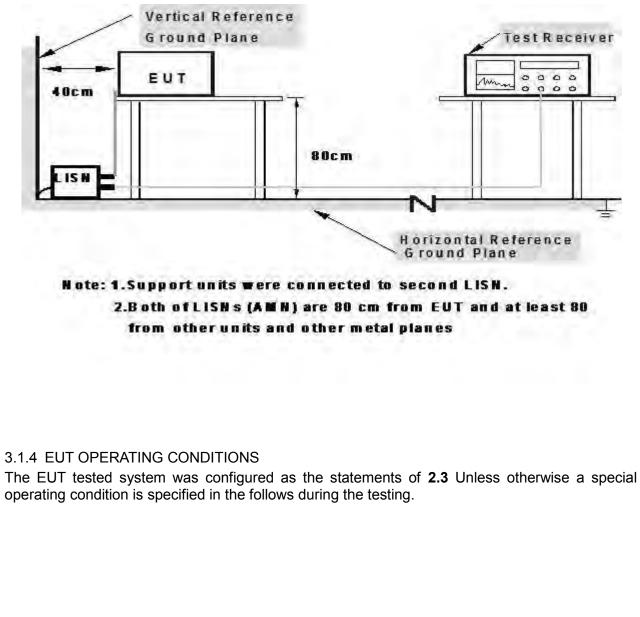
Certificate #4298.01

- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.

AC-MR

e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 TEST SETUP



NTEK北测

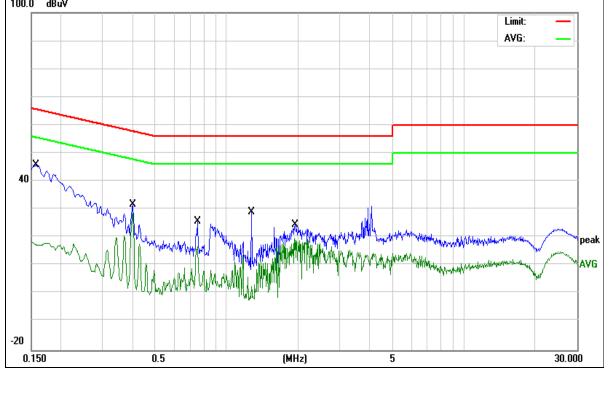


3.1.5 TEST RESULTS

EUT:	Symbus Q	Model Name. :	99MO084218				
Temperature:	26 ℃	Relative Humidity:	54%				
Pressure:	1010hPa	Test Date:	2018-09-20				
Test Mode:	Mode 1(Normal link)	Mode 1(Normal link) Phase : L					
Test Voltage:	DC 19V from adapter AC 120V/60Hz						

						1
Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBµV)	(dB)	(dBµV)	(dBµV)	(dB)	Remark
0.1580	35.96	9.75	45.71	65.56	-19.85	QP
0.1580	8.89	9.75	18.64	55.56	-36.92	AVG
0.4020	22.03	9.74	31.77	57.81	-26.04	QP
0.4020	18.89	9.74	28.63	47.81	-19.18	AVG
0.7580	16.09	9.74	25.83	56.00	-30.17	QP
0.7580	6.89	9.74	16.63	46.00	-29.37	AVG
1.2740	19.38	9.74	29.12	56.00	-26.88	QP
1.2740	4.10	9.74	13.84	46.00	-32.16	AVG
1.9380	14.74	9.78	24.52	56.00	-31.48	QP
1.9380	10.02	9.78	19.80	46.00	-26.20	AVG

Remark:

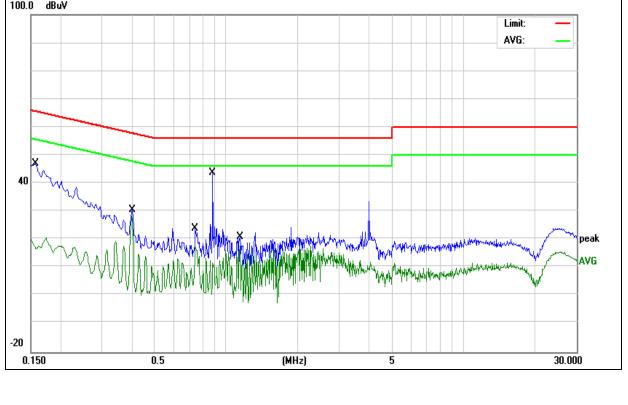






EUT: Symbus Q		M	Model Name. :		99MO084218		
Temperature: 26 °C		Re	Relative Humidity:		54%		
Pressure:	1010hPa		Те	est Da	te:	2018-09-20	
Test Mode:	Mode 1(No	ormal link)	Pł	hase :		Ν	
Test Voltage:	DC 19V fro	om adapter AC	C 120V/60	OHz			
Frequency	Reading Level	Correct Factor	Measure-r	ment	Limits	Margin	
(MHz)	(dBµV)	(dB)	(dBµ\	V)	(dBµV)	(dB)	- Remark
0.1580	37.18	9.74	46.9	2	65.56	-18.64	QP
0.1580	10.79	9.74	20.5	3	55.56	-35.03	AVG
0.3980	20.92	9.75	30.6	7	57.89	-27.22	QP
0.3980	18.85	9.75	28.6	0	47.89	-19.29	AVG
0.7460	14.05	9.75	23.8	0	56.00	-32.20	QP
0.7460	7.66	9.75	17.4	1	46.00	-28.59	AVG
0.8780	34.09	9.75	43.84	4	56.00	-12.16	QP
0.8780	2.81	9.75	12.5	6	46.00	-33.44	AVG
1.1420	11.29	9.75	21.04	4	56.00	-34.96	QP
1.1420	7.78	9.75	17.5	3	46.00	-28.47	AVG

Remark:



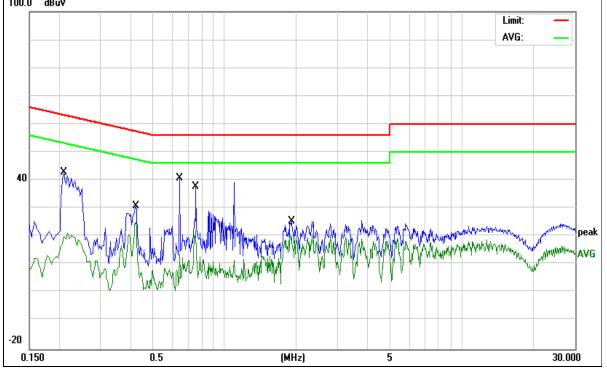




EUT:		Symbus Q I		Model Name. :		99MO084218			
Ten	Temperature: 26 °C F		Relative Humidity:		54%				
Pre	ssure:	1010hPa			Test Date	e:	2018	8-09-20	
Tes	t Mode:	Mode 1(Nori	mal link)		Phase :		L		
Tes	t Voltage:	DC 19V fron	n adapter AC	240V	/60Hz				
Γ	Frequency	Reading Level	Correct Factor	Meas	ure-ment	Limits		Margin	
	(MHz)	(dBµV)	(dB)	(dBµV)	(dBµV)		(dB)	- Remark
	0.2100	33.13	9.76		42.89	63.20		-20.31	QP
	0.2100	11.38	9.76		21.14	53.20		-32.06	AVG
	0.4220	21.08	9.74		30.82	57.41		-26.59	QP
	0.4220	15.34	9.74		25.08	47.41		-22.33	AVG
	0.6460	31.13	9.74		40.87	56.00		-15.13	QP
	0.6460	4.15	9.74		13.89	46.00		-32.11	AVG
	0.7580	28.12	9.74		37.86	56.00		-18.14	QP
	0.7580	12.55	9.74		22.29	46.00		-23.71	AVG
	1.8900	15.58	9.78		25.36	56.00		-30.64	QP
	1.8900	10.53	9.78		20.31	46.00		-25.69	AVG

Remark:



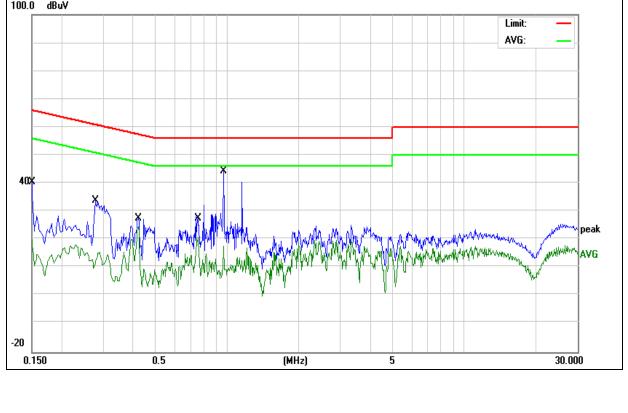






EUT:	EUT: Symbus Q I		Mod	Model Name. :		99MO084218	
Temperature: 26 °C		Rela	Relative Humidity:		54%		
Pressure:	1010hPa		Test	Da	te:	2018-09-20	
Test Mode:	Mode 1(N	ormal link)	Pha	se :	1	Ν	
Test Voltage:	DC 19V fr	om adapter AC	C 240V/60⊢	z			
Frequency Reading Level Correct Factor Measu		Measure-me	nt	Limits	Margin		
(MHz)	(dBµV)	(dB)	(dBµV)		(dBµV)	(dB)	- Remark
0.1500	30.64	9.74	40.38		65.99	-25.61	QP
0.1500	10.41	9.74	20.15		55.99	-35.84	AVG
0.2779	24.25	9.74	33.99		60.88	-26.89	QP
0.2779	5.70	9.74	15.44		50.88	-35.44	AVG
0.4220	17.91	9.75	27.66		57.41	-29.75	QP
0.4220	14.84	9.75	24.59		47.41	-22.82	AVG
0.7580	19.59	9.75	29.34		56.00	-26.66	QP
0.7580	11.13	9.75	20.88		46.00	-25.12	AVG
0.9660	34.55	9.75	44.30		56.00	-11.70	QP
0.9660	7.86	9.75	17.61		46.00	-28.39	AVG

Remark:





3.2 RADIATED EMISSION MEASUREMENT

3.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table 15.209(a):

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100**	3
88-216	150**	3
216-960	200**	3
Above 960	500	3

$15.\,205$ Restricted bands of operation

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
¹ 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(2)
13.36-13.41			

Notes:

- (1) Measurement was performed at an antenna to the closed point of EUT distance of meters.
- (2) Emission level (dBuV/m)=20log Emission level (uV/m).
- (3) Only spurious frequency is permitted to locate within the Restricted Bands specified in provision of 15.205, and the emissions located in restricted bands also comply with 15.209 limit.
- (4) The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector





3.2.2 TEST PROCEDURE

Test Arrangement for Radiated Emissions up to 1 GHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at an accredited test facility. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna(Blow 30M, use loop antenna), and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

Note: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for quasi-peak detection (QP) at frequency below 1GHz.

Test Arrangement for Radiated Emissions above 1 GHz.

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at an accredited chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna can be varied from one meter to four meters, the height of adjustment depends on the EUT height and the antenna 3dB beamwidth both, to detect the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

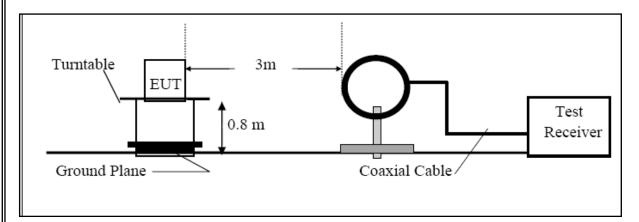
During the radiated emission test, the Spectrum Analyzer was set with the following configurations:

Use the following receiver/spectrum analyzer settings: Span = wide enough to fully capture the emission being measured RBW=200Hz for 9KHz to 150KHz, RBW=9kHz for 150KHz to 30MHz, RBW=120KHz for 30MHz to 1GHz VBW \geq 3*RBW Sweep = auto Detector function = QP Trace = max hold

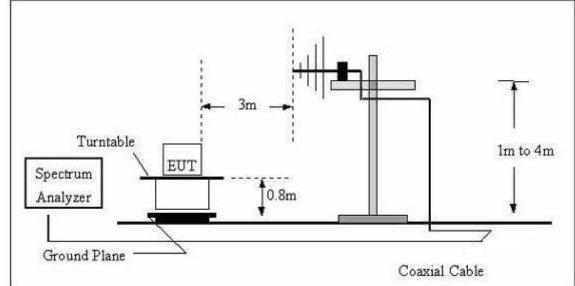


3.2.3 TEST SETUP

For Radiated Emission Test Set-Up, Frequency Below 30MHz



For Radiated Emission 30~1000MHz



NTEK北测



3.2.4 TEST RESULTS

TEST RESULTS (9KHz~30MHz)

EUT:	Symbus Q	Model Name. :	99MO084218				
Temperature:	24 °C	Relative Humidity:	54%				
Pressure:	1010 hPa	Test Date :	2018-09-20				
Test Mode :	Low frequency/Max Load						
Test Power :	DC 19V from adapter AC 120V/60Hz						

Certificate #4298.01

Frequency	Ant.Pol.	Emissio	Limits	Margin	Remark
		n Level			
(MHz)		(dBuV/m)	(dBuV/m)	(dB)	
0.084	Х	46.11	109.119	-63.01	Avg
0.110	х	70.46	106.776	-36.32	Avg(fundamenta
0.110	~	70.40	100.770	-30.32	l frequency)
0.684	Х	45.17	70.903	-25.73	QP
1.241	Х	40.98	65.729	-24.75	QP
5.509	Х	40.21	69.542	-29.33	QP

Note:

Below 30MHz, Pre-test the X, Y, Z axis to find X axis is worst case, so only record X axis test data.

X: Field strength which this device generates since the position of the charging coil and loop antenna differ by 0 degrees.

Y: Field strength which this device generates since the position of the charging coil and loop antenna differ by 90 degrees.

Z: Field strength which this device generates since the position of the charging coil and loop antenna differ by 180 degrees.





|--|

EUT:	Symbus Q	Model Name. :	99MO084218
Temperature:	24 °C	Relative Humidity:	54%
Pressure:	1010 hPa	Test Date :	2018-09-20
Test Mode :	Mid frequency/Max Load	Polarization :	Х
Test Power :	DC 19V from adapter AC 120V	//60Hz	

Frequency	Ant.Pol.	Emission Level	Limits	Margin	Remark
(MHz)		(dBuV/m)	(dBuV/m)	(dB)	
0.131	х	69.85	105.2590	-35.41	Avg(fundamental frequency)
0.427	Х	46.63	94.9960	-48.37	Avg
2.658	Х	41.14	69.542	-28.40	QP
8.630	Х	38.57	69.542	-30.97	QP
22.197	Х	40.75	69.542	-28.79	QP

Note:

Below 30MHz, Pre-test the X, Y, Z axis to find X axis is worst case, so only record X axis test data. X: Field strength which this device generates since the position of the charging coil and loop antenna differ by 0 degrees.

Y: Field strength which this device generates since the position of the charging coil and loop antenna differ by 90 degrees.

Z: Field strength which this device generates since the position of the charging coil and loop antenna differ by 180 degrees.



EUT:	Symbus Q	Model Name. :	99MO084218
Temperature:	24 °C	Relative Humidity:	54%
Pressure:	1010 hPa	Test Date :	2018-09-20
Test Mode :	High frequency/Max Load	Polarization :	Х
Test Power :	DC 19V from adapter AC 120V	/60Hz	

Frequency	Ant.Pol.	Emission	Limits	Margin	Remark
		Level			
(MHz)		(dBuV/m)	(dBuV/m)	(dB)	
0.096	Х	48.41	107.959	-59.55	Avg
0.140	х	69.92	104.682	-34.76	Avg(fundamental
0.140	Λ	03.32	104.002	-54.70	frequency)
4.512	Х	44.25	69.542	-25.29	QP
10.239	Х	40.62	69.542	-28.92	QP
19.987	Х	42.39	69.542	-27.15	QP

Note:

NTEK北测

Below 30MHz, Pre-test the X, Y, Z axis to find X axis is worst case, so only record X axis test data. X: Field strength which this device generates since the position of the charging coil and loop antenna differ by 0 degrees.

Y: Field strength which this device generates since the position of the charging coil and loop antenna differ by 90 degrees.

Z: Field strength which this device generates since the position of the charging coil and loop antenna differ by 180 degrees.





TEST RESULTS (30MHz ~1000MHz)

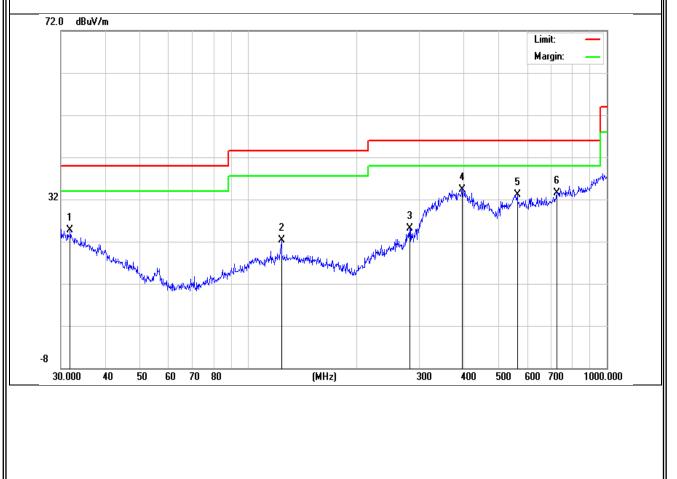
Note: The High/ Middle/ Low frequency mode has been tested. But the Low frequency mode is the worst mode, just reported the worst data.

EUT:	Symbus Q	Model Name. :	99MO084218
Temperature:	24 °C	Relative Humidity:	54%
Pressure:	1010 hPa	Test Date :	2018-09-20
Test Mode :	High frequency/Max Load	Polarization :	Horizontal
Test Power :	DC 19V from adapter AC 120V	//60Hz	

Polar (H/V) H H H H H	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
(H/V)	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	Roman
Н	31.8427	6.53	18.25	24.78	40.00	-15.22	QP
Н	123.6985	8.96	13.28	22.24	43.50	-21.26	QP
Н	281.9945	8.48	16.63	25.11	46.00	-20.89	QP
Н	394.8545	15.10	19.30	34.40	46.00	-11.60	QP
Н	562.6624	8.97	24.15	33.12	46.00	-12.88	QP
Н	724.2611	6.66	26.85	33.51	46.00	-12.49	QP

Remark:

Factor = Antenna Factor + Cable Loss - Amplifier.





Report No.: SER180718405001E

mperature: 24 °C Relative Humidity: 54% essure: 1010 hPa Test Date : 2018-09-20 st Mode : High frequency/Max Load Polarization : Vertical st Power : DC 19V from adapter AC 120V/60Hz Vertical plar Frequency Meter Reading Factor Emission Level Limits Margin Remark V/V) (MHz) (dBuV) (dB) (dBuV/m) (dBuV/m) QP V 30.6379 9.71 18.67 28.38 40.00 -11.62 QP V 39.1615 11.31 14.78 26.09 40.00 -13.91 QP V 102.7192 10.37 11.97 22.34 43.50 -21.16 QP V 178.7583 11.14 10.83 21.97 43.50 -21.53 QP V 375.9384 9.68 18.42 28.10 46.00 -17.90 QP	EUT:		Symb	ous Q		Model Nam	e. :	99MO	084218	
Essure: 1010 hPa Test Date : 2018-09-20 st Mode : High frequency/Max Load Polarization : Vertical St Power : DC 19V from adapter AC 120V/60Hz Limits Margin Remark Value (MHz) (dBuV) (dB) (dBuV/m) (dBuV/m) (dB) Remark V 30.6379 9.71 18.67 28.38 40.00 -11.62 QP V 39.1615 11.31 14.78 26.09 40.00 -13.91 QP V 102.7192 10.37 11.97 22.34 43.50 -21.53 QP V 178.7583 11.14 10.83 21.97 43.50 -21.63 QP V 375.9384 9.68 18.42 28.10 46.00 -17.90 QP V 552.8832 7.77 24.51 32.28 46.00 -13.72 QP nark: tor = Antenna Factor + Cable Loss - Amplifier. 5 5 5 4 4 4 4 4 4 4 4 4 4 4 <td>Temper</td> <td>ature:</td> <td></td> <td></td> <td></td> <td>Relative Hu</td> <td>midity:</td> <td>54%</td> <td></td> <td></td>	Temper	ature:				Relative Hu	midity:	54%		
st Power : DC 19V from adapter AC 120V/60Hz Plar Frequency Meter Reading Factor Emission Level Limits Margin Remark VV 30.6379 9.71 18.67 28.38 40.00 -11.62 QP V 39.1615 11.31 14.78 26.09 40.00 -13.91 QP V 102.7192 10.37 11.97 22.34 43.50 -21.16 QP V 375.9384 9.68 18.42 28.10 46.00 -17.90 QP V 552.8832 7.77 24.51 32.28 46.00 -13.72 QP nark: tor = Antenna Factor + Cable Loss - Amplifier. T20 dBW/m	Pressur		1010	hPa		Test Date :		2018-	09-20	
st Power : DC 19V from adapter AC 120V/60Hz Plar Frequency Meter Reading Factor Emission Level Limits Margin Remark VV 30.6379 9.71 18.67 28.38 40.00 -11.62 QP V 39.1615 11.31 14.78 26.09 40.00 -13.91 QP V 102.7192 10.37 11.97 22.34 43.50 -21.16 QP V 375.9384 9.68 18.42 28.10 46.00 -17.90 QP V 552.8832 7.77 24.51 32.28 46.00 -13.72 QP nark: tor = Antenna Factor + Cable Loss - Amplifier. T20 dBW/m			High	frequency/N	lax Load		:			
Prequency Reading Pactor Level Limits Margin Remark V 30.6379 9.71 18.67 28.38 40.00 -11.62 QP V 39.1615 11.31 14.78 26.09 40.00 -13.91 QP V 39.1615 11.31 14.78 26.09 40.00 -13.91 QP V 102.7192 10.37 11.97 22.34 43.50 -21.16 QP V 178.7583 11.14 10.83 21.97 43.50 -21.63 QP V 375.9384 9.68 18.42 28.10 46.00 -17.90 QP v 552.8832 7.77 24.51 32.28 46.00 -13.72 QP nark: tor = Antenna Factor + Cable Loss - Amplifier.	Test Po	wer:				V/60Hz				
Prequency Reading Pactor Level Limits Margin Remark V 30.6379 9.71 18.67 28.38 40.00 -11.62 QP V 39.1615 11.31 14.78 26.09 40.00 -13.91 QP V 39.1615 11.31 14.78 26.09 40.00 -13.91 QP V 102.7192 10.37 11.97 22.34 43.50 -21.16 QP V 178.7583 11.14 10.83 21.97 43.50 -21.63 QP V 375.9384 9.68 18.42 28.10 46.00 -17.90 QP v 552.8832 7.77 24.51 32.28 46.00 -13.72 QP nark: tor = Antenna Factor + Cable Loss - Amplifier.										
Image: Non-State State St	Polar	Freque	ncy		Factor		Lim	its	Margin	Domark
V 39.1615 11.31 14.78 26.09 40.00 -13.91 QP V 102.7192 10.37 11.97 22.34 43.50 -21.16 QP V 178.7583 11.14 10.83 21.97 43.50 -21.53 QP V 375.9384 9.68 18.42 28.10 46.00 -17.90 QP V 552.8832 7.77 24.51 32.28 46.00 -13.72 QP nark: tor = Antenna Factor + Cable Loss - Amplifier. 1.11 diagon: diagon 32 48uV/m	(H/V)	(MHz	:)	(dBuV)	(dB)	(dBuV/m)	(dBu\	//m)	(dB)	Remain
V 102.7192 10.37 11.97 22.34 43.50 -21.16 QP V 178.7583 11.14 10.83 21.97 43.50 -21.53 QP V 375.9384 9.68 18.42 28.10 46.00 -17.90 QP V 552.8832 7.77 24.51 32.28 46.00 -13.72 QP nark: tor = Antenna Factor + Cable Loss - Amplifier. 72.0 dBuV/m Jumit adbuv/m Jumit 33 4 Adv Amplifier.	V									
V 178.7583 11.14 10.83 21.97 43.50 -21.53 QP V 375.9384 9.68 18.42 28.10 46.00 -17.90 QP V 552.8832 7.77 24.51 32.28 46.00 -13.72 QP nark: tor = Antenna Factor + Cable Loss - Amplifier. 720 dBuV/m $\frac{1000}{2}$ $\frac{11.14}{2}$ $\frac{1000}{2}$ <td>V</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	V									
V 375.9384 9.68 18.42 28.10 46.00 -17.90 QP V 552.8832 7.77 24.51 32.28 46.00 -13.72 QP nark: tor = Antenna Factor + Cable Loss - Amplifier. Total deuv/m Imark: tor = Antenna Factor + Cable Loss - Amplifier. Total deuv/m Imark: Imark: <td< td=""><td>V</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	V									
V 552.8832 7.77 24.51 32.28 46.00 -13.72 QP nark: tor = Antenna Factor + Cable Loss - Amplifier. Image: Comparison of the co	V									
nark: tor = Antenna Factor + Cable Loss - Amplifier.	V									
tor = Antenna Factor + Cable Loss - Amplifier.	V	552.88	32	7.77	24.51	32.28	46.	00	-13.72	QP
$32 \frac{1}{2} \frac{1}{2} \frac{3}{4} \frac{4}{4} \frac{5}{4} \frac{5}{4} \frac{1}{4} \frac$	72.0	dBu∀/m								_
$32 \frac{6}{1} \frac{3}{1} \frac{2}{1} \frac{3}{1} \frac{4}{1} \frac$										-
	_									
	-									
	32								6	WV ^{ANYA}
	³² 1 X	2					5 X.	Sect	Wandard	
	1	Mul Mar			3 X	4		MMMMM .		
		water Mayor	N.	and the second second	Man the second the method	W The way to an add the way had	1 ¹¹¹¹¹			
-8			"WWW have	wheel the on the second prototice						
-8	-									
-8										
30.000 40 50 60 70 80 (MHz) 300 400 500 600 700 1000.000										
			WW	upped Villigen Annual Provident						



4. ANTENNA APPLICATION 4.1 Antenna Requirement

15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible partyshall be used with the device. **4.2 Result**

The EUT antenna is permanent attached antenna. It comply with the standard requirement.

END REPORT