

FCC Radio Test Report

FCC ID: LDKDSKH2377

This report concerns: Original Grant

Project No.	:	2106H020
Equipment	:	Cisco Webex Desk Hub
Brand Name	:	Cisco
Test Model	:	CD-DSKH
Series Model	:	N/A
Applicant	:	Cisco Systems,Inc
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Manufacturer	:	Cisco Systems, Inc.
Address	:	170 West Tasman Drive, San Jose, CA, USA, 95134
Factory	:	1) WISTRON INFOCOMM (ZHONGSHAN) CORPORATION
		2) WISTRON MEXICO S.A DE C.V
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		ZONE, ZHONGSHAN CITY, GUANGDONG,CHINA
		2) CALLE BAUDELIO PÈREZ MUCHARRAS, NO. 420 ORIENTE,
		COL. ZARAGOZA, CD. JUAREZ, CHIHUAHUA, C.P. 32700,
		MEXICO
Date of Receipt	:	Jun. 21, 2021
Date of Test	:	Jun. 21, 2021~Sep. 01, 2021
Issued Date	:	Oct. 20, 2021
Report Version	:	R01
Test Sample	:	Engineering Sample No.:
		EUT:SH20210609121(RFD),SH2021082351(TDK) for radiated;
		SH20210609122(RFD),SH2021082351(TDK) for Conducted;
		Adapter:SH20210609121-4, SH20210609121-5
Standard(s)	:	FCC Part15, Subpart C
		ANSI C63.10-2013

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.

Maker Q

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The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective. Please note that the measurement uncertainty is provided for informational purpose only and are not use in determining the Pass/Fail results.



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REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue.	Sep. 18, 2021
R01	Revised report to address TCB's comments.	Oct. 20, 2021



1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC Part15, Subpart C (15.209)					
Standard(s) Section	Test Item	Test Result	Judgment	Remark	
15.207	AC Power Line Conducted Emissions	APPENDIX A	PASS		
15.209(a)	Radiated Emissions	APPENDIX B APPENDIX C	PASS		
15.215	Bandwidth	APPENDIX D	PASS		

NOTE:

(1) "N/A" denotes test is not applicable to this device.



1.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No. 29, Jintang Road, Tangzhen Industry Park, Pudong New Area, Shanghai 201210, China BTL's Test Firm Registration Number for FCC: 476765 BTL's Designation Number for FCC: CN1241

1.2 MEASUREMENT UNCERTAINTY

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)) The BTL measurement uncertainty as below table:

A. AC power line conducted emissions test:

Test Site	Method	Measurement Frequency Range	U, (dB)
SH-C01	CISPR	150 kHz ~ 30 MHz	2.64

B. Radiated emissions test:

Test Site	Method	Measurement Frequency Range	Ant. H / V	U, (dB)
SH-CB02	CISPR	9 KHz~30 MHz	-	2.16
		30 MHz~200 MHz	V	4.04
		30 MHz~200 MHz	Н	2.90
		200 MHz~1,000 MHz	V	3.76
		200 MHz~1,000 MHz	Н	3.82

C. Conducted test:

Parameter	U
Occupied Channel Bandwidth	±3.8 %
Temperature	±0.08 °C
Humidity	±1.5 %
Supply voltages	±0.3 %

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

1.3 TEST ENVIRONMENT CONDITIONS

Test Item	Temperature	Humidity	Test Voltage	Tested By
AC Power Line Conducted Emissions	23°C	59%	AC 120V/60Hz	Joven Xiong Vera Wei
Radiated Emissions-9K-30MHz	24°C-26°C	58%-61%	AC 120V/60Hz	Forest Li
Radiated Emissions-30 MHz to 1GHz	24°C-26°C	58%-61%	AC 120V/60Hz	Forest Li
Bandwidth	23°C	59%	AC 120V/60Hz	Danny Dang

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Cisco Webex Desk Hub
Brand Name	Cisco
Test Model	CD-DSKH
Series Model	N/A
Model Difference(s)	N/A
Software Version	novum1.1.0
Hardware Version	P2A-1
Power Source	Supplied from wireless charger.
Power Rating	DC 19V
Operation Frequency(MHz)	0.110-0.300

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

2. The Test Model has two kinds of coils: RFD and TDK, and the test data has been all listed in the report.



2.2 DESCRIPTION OF TEST MODES

The test system was pre-tested based on the consideration of all possible combinations of EUT operation mode.

Pretest Mode	Description
Mode 1	TX Mode

Following mode(s) was (were) found to be the worst case(s) and selected for the final test.

AC power line conducted emissions test		
Final Test Mode	Description	
Mode 1	TX Mode	

Radiated emissions test			
Final Test Mode	Description		
Mode 1	TX Mode		

Bandwidth test			
Final Test Mode Description			
Mode 1	TX Mode		

Note:

(1) The EUT has the maximum average output power when the support unit is in low power and being charged by EUT.



2.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



AC 100-240V

2.4 SUPPORT UNITS

ltem	Equipment	Brand	Model No.	Series No.
А	Wireless Speaker	PHILIPS	PDS50	N/A
В	Adapter	HUAWEI	N/A	N/A

ltem	Cable Type	Shielded Type	Ferrite Core	Length
1	USB Type-C Cable	NO	NO	0.5m



3. AC POWER LINE CONDUCTED EMISSIONS TEST

3.1 LIMIT

Frequency of Emission (MHz)	Limit (dBµV)		
Frequency of Emission (MHZ)	Quasi-peak	Average	
0.15 - 0.50	66 to 56*	56 to 46*	
0.50 - 5.0	56	46	
5.0 - 30.0	60	50	

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.

3.2 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 equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- 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.
- e. For the actual test configuration, please refer to the related Item -EUT Test Photos.

3.3 DEVIATION FROM TEST STANDARD

No deviation



3.4 TEST SETUP



3.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

3.6 TEST RESULTS

Please refer to the APPENDIX A.

Remark:

- (1) All readings are QP Mode value unless otherwise stated AVG in column of [Note]. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform. In this case, a " * " marked in AVG Mode column of Interference Voltage Measured.
- (2) Measuring frequency range from 150 kHz to 30 MHz.



4. RADIATED EMISSION TEST

4.1 LIMIT

In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

LIMITS OF RADIATED EMISSION MEASUREMENT(9 kHz-1000 MHz)

Frequency	Field Strength	Measurement Distance
(MHz)	(microvolts/meter)	(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

Note:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

4.2 TEST PROCEDURE

- a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1 GHz)
- b. The height of the equipment or of the substitution antenna shall be 0.8m or 1.5m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- c. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
- d. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform. (below 1 GHz)
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.3 DEVIATION FROM TEST STANDARD

No deviation.



4.4 TEST SETUP





4.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

4.6 TEST RESULT - 9 kHz TO 30 MHz

Please refer to the APPENDIX B

Remark:

- (1) Distance extrapolation factor = 40 log (specific distance / test distance) (dB).
- (2) Limit line = specific limits (dBuV) + distance extrapolation factor.

4.7 TEST RESULTS - 30 MHZ TO 1000 MHZ

Please refer to the APPENDIX C.



5. BANDWIDTH

5.1 LIMIT

Section	Test Item
FCC 15.215	Bandwidth

5.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.

b. The following table is the setting of the spectrum analyzer:

Spectrum Parameters	Setting
Span Frequency	> Measurement Bandwidth
RBW	1 kHz
VBW	3 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

5.3 DEVIATION FROM STANDARD

No deviation.

5.4 TEST SETUP



5.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

5.6 TEST RESULTS

Please refer to the APPENDIX D.

6. MEASUREMENT INSTRUMENTS LIST

	AC Power Line Conducted Emissions					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until	
1	Line Impedance Stabilisation Network	Schwarzbeck	NNLK 8121	8121-822	Mar. 20, 2022	
2	TWO-LINE V-NETWORK	R&S	ENV216	101340	Aug. 23, 2021 Aug. 23, 2022	
3	Test Cable	emci	EMCRG400-BM-N M-10000	170628	Apr. 11, 2022	
4	EMI Test Receiver	R&S	ESCI	100082	Mar. 21, 2022	
5	50Ω Terminator	SHX	TF2-1G-A	17051602	Mar. 20, 2022	
6	50Ω coaxial switch	Anritsu	MP59B	6201750902	Mar. 21, 2022	
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A	

Radiated Emissions - 9 kHz to 30 MHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Loop Antenna	EMCI	EMCI LPA600	275	May. 20, 2022
2	MXE EMI Receiver	Keysight	N9038A	MY56400088	Mar. 21, 2022
3	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

	Radiated Emissions - 30 MHz to 1 GHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until	
1	TRILOG Broadband Antenna	Schwarzbeck	VULB 9160	9160-3233	Mar. 26, 2022	
2	Pre-Amplifier	emci	EMC9135	980401	Mar. 20, 2022	
3	MXE EMI Receiver	Keysight	N9038A	MY56400088	Mar. 21, 2022	
4	Test Cable	emci	EMC104-SM-SM-7 000	181020	Apr. 11, 2022	
5	Test Cable	emci	EMC104-SM-SM-2 500	170618	Apr. 11, 2022	
6	Test Cable	emci	EMC104-SM-SM-8 00	170647	Apr. 11, 2022	
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A	

Bandwidth					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100626	May 29, 2022
2	Attenuator	JUK	ATT-2W6G-S-10	N/A	N/A

Remark: "N/A" denotes no model name, serial no. or calibration specified.

"*" calibration period of equipment list is three year.

Except * item, all calibration period of equipment list is one year.



7. EUT TEST PHOTO

AC Power Line Conducted Emissions Test Photos

















APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS





- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





3

4

5

6

*

0.8384

1.2163

1.8104

16.9845

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.

33.97

32.29

31.53

26.96

9.81

9.83

9.87

10.56

43.78

42.12

41.40

37.52

56.00

56.00

56.00

60.00

-12.22

-13.88

-14.60

-22.48

peak

peak

peak

peak





- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





6

16.9845

(1) Measurement Value = Reading Level + Correct Factor.

10.56

38.52

60.00

-21.48

peak

(2) Margin Level = Measurement Value - Limit Value.

27.96



APPENDIX B - RADIATED EMISSION - 9 KHZ TO 30 MHZ





(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.





(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.





(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.





(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.





(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.





(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.





(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.





(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.



APPENDIX C - RADIATED EMISSION - 30 MHZ TO 1000 MHZ





- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





REMARKS:		

3

4

5

6

330.2150

528.5800

651.2850

731.7950

(1) Measurement Value = Reading Level + Correct Factor.

-14.84

-10.79

-8.54

-7.46

34.74

34.22

31.51

29.22

46.00

46.00

46.00

46.00

-11.26

-11.78

-14.49

-16.78

peak

peak

peak

peak

(2) Margin Level = Measurement Value - Limit Value.

49.58

45.01

40.05

36.68

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.

6

901.0600

(1) Measurement Value = Reading Level + Correct Factor.

-5.91

30.30

46.00

-15.70

peak

(2) Margin Level = Measurement Value - Limit Value.

36.21

APPENDIX D - BANDWIDTH

