FCC Test Report

Report No.: FVC-ESH-P20112382B-14

FCC ID: T2C-A30

Product: Video Conferencing Endpoint

Model: MeetingBar A30

Received Date: Dec.30, 2020

Test Date: Jan.02 to Jan.22, 2021

Issued Date: Jan.23, 2021

Applicant: YEALINK(XIAMEN) NETWORK TECHNOLOGY CO.,LTD.

Address: 309, 3rd Floor, No.16, Yun Ding North Road, Huli District, Xiamen City, Fujian, P.R. China

Manufacturer: YEALINK(XIAMEN) NETWORK TECHNOLOGY CO.,LTD.

Address: 309, 3rd Floor, No.16, Yun Ding North Road, Huli District, Xiamen City, Fujian, P.R. China

Issued By: BUREAU VERITAS ADT (Shanghai) Corporation

Lab Address: No. 829, Xinzhuan Road, Shanghai, P.R.China (201612)

ACCREDITED
Test Lab
Cert 2343.01

Table of Contents

Release Control Record

Issue No.	Description	Date Issued
FVC-ESH-P20112382B-14	Original release	Jan.23, 2021

1 Certificate of Conformity

Product: Video Conferencing Endpoint

Brand: Yealink

Model: MeetingBar A30

Applicant: YEALINK(XIAMEN) NETWORK TECHNOLOGY CO.,LTD.

Test Date: Jan.02 to Jan.22, 2021

Standards: 47 CFR Part 15, Subpart E 15.407

The above equipment has been tested by **BUREAU VERITAS ADT (Shanghai) Corporation**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by : Yuan ZHANG , **Date:** Jan.23, 2021

Yuan ZHANG
Project Engineer

Approved by : , **Date:** Jan.23, 2021

Daniel Sun
EMC Lab Manager

2 Summary of Test Results

The EUT has been tested according to the following specifications:

47 CFR FCC Part 15, Subpart E (SECTION 15.407)			
FCC Clause	Test Item	Result	Remarks
15.203	Antenna Requirement	PASS	No antenna connector is used.
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit.
15.407(a)	26dB Emission bandwidth	PASS	Meet the requirement of limit.
15.407(e)	Minimum 6 dB bandwidth (5.725-5.85 GHz band)	PASS	Meet the requirement of limit.
15.407(a)	Maximum Conducted output power	PASS	Meet the requirement of limit.
15.407(a)	Peak Power spectrum density	PASS	Meet the requirement of limit.
15.205 / 15.209 / 15.407(b)	Emissions in restricted frequency bands	PASS	Meet the requirement of limit.
15.209 / 15.247(d)	Radiated Emissions Measurement	PASS	Meet the requirement of limit.

2.1 Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Hybrid Antenna(25MHz-1.5GHz)	Schwarzbeck	VULB9168	E1A1012	Jul.29, 20	Jul.28, 22
Horn Antenna(1GHz -18GHz)	Schwarzbeck	BBHA9120D	E1A1017	Aug.25, 20	Aug.24, 22
Double Ridge Horn Antenna(18G-40G)	COM-POWER	AH-840	E1A1040	Jul.15, 20	Jul.14, 22
Pre-Amplifier(100kHz-1.3GHz)	Agilent	8447D	E1A2001	Apr.20, 20	Apr.19, 21
Pre-Amplifier(0.5GHz-18GHz)	EMCI	EMC184045SE	E1A2009	Jul.06, 20	Jul.05, 21
Pre-Amplifier(18GHz-40GHz)	EMCI	EMC051845SE	E1A2008	Jul.06, 20	Jul.05, 21
EMI test recerver	R&S	ESR7	E1R1005	Apr.20, 20	Apr.19, 21
Spectrum Analyzer	Keysight	N9030B	E1S1003	Jul.23, 20	Jul.22, 21
Spectrum Analyzer	Keysight	N9020A	E1S1004	Mar.03, 20	Mar.02, 21
EMI test recerver	R&S	ESCS30	E1R1001	May.12, 20	May.11, 21
LISN	R&S	ENV216	E1L1011	May.12, 20	May.11, 21
Humidity&Temp Tester	Baolima	WS508	E1H1011	Apr. 03, 20	Apr. 02, 21
RF Control Unit	Toscend	JS0806-2	E1C5003	N/A	N/A
Test Software	ADT	ADT_COND_V7.3.1	N/A	N/A	N/A
Test Software	Toscend	JS32-RE	N/A	N/A	N/A
Test Software	Toscend	JS1120	N/A	N/A	N/A
Test Software	Toscend	JS1120-3	N/A	N/A	N/A

2.2 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT:

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

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.83 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	5.36 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	3.47 dB
	6GHz ~ 18GHz	3.75 dB
	18GHz ~ 40GHz	3.30 dB

2.3 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Video Conferencing Endpoint
Brand	Yealink
Test Model	MeetingBar A30
Power Rating	I/P: 48V ⎓, 0.7A for Video Conferencing Endpoint; I/P: 100-240Vac, 50/60Hz, 1.0A; O/P: 48V ⎓, 0.7A for AC Adapter.
Modulation Type	OFDM
Modulation Technology	802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK) 802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM) 802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)
Operating Frequency	5150 ~ 5250MHz, 5250 ~ 5350MHz, 5470 ~ 5725MHz, 5745 ~ 5850MHz
Number of Channel	See clause 3.2
Output Power	17.24dBm
Antenna Type	PCB Antenna
Antenna Connector	--
Antenna Gain	Ant1:3dBi Ant2:3dBi MIMO Gain:6.01dBi

Note: For more details, please refer to the User's manual of the EUT.

Special comments: The model MeetingBar A30 and MeetingBar A20 use same wireless module, so we choose RSE for further test.

Modulation Mode	TX /RX Function
802.11a	2TX / 2RX
802.11n/ac (20MHz)	2TX / 2RX
802.11n/ac (40MHz)	2TX / 2RX
802.11ac (80MHz)	2TX / 2RX

3.2 Description of Test Modes

FOR 5150 ~ 5250MHz

4 channels are provided for 802.11a, 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz

2 channels are provided for 802.11n (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (80MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
42	5210 MHz		

FOR 5250 ~ 5350MHz

4 channels are provided for 802.11a, 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
52	5260 MHz	60	5300 MHz
56	5280 MHz	64	5320 MHz

2 channels are provided for 802.11n (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270 MHz	62	5310 MHz

1 channel is provided for 802.11ac (80MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
58	5290 MHz		

FOR 5470 ~ 5725MHz

11 channels are provided for 802.11a, 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
100	5500 MHz	124	5620 MHz
104	5520 MHz	128	5640 MHz
108	5540 MHz	132	5660 MHz
112	5560 MHz	136	5680 MHz
116	5580 MHz	140	5700 MHz
120	5600 MHz		

5 channels are provided for 802.11n (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
102	5510 MHz	126	5630 MHz
110	5550 MHz	134	5670 MHz
118	5590 MHz		

2 channel is provided for 802.11ac (80MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
106	5530 MHz	122	5610 MHz

FOR 5725 ~ 5850MHz

4 channels are provided for 802.11a, 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
153	5765 MHz	157	5785 MHz
149	5745 MHz	161	5805 MHz

2 channels are provided for 802.11n (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
151	5755 MHz	159	5795 MHz

1 channel is provided for 802.11ac (80MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
155	5775 MHz		

3.2.1 Test Mode Applicability:

EUT Configure Mode	Applicable to				Description
	RE ≥ 1G	RE < 1G	PLC	APCM	
-	√	√	√	√	-

Where **RE≥1G:** Radiated Emission above 1GHz **RE≤1G:** Radiated Emission below 1GHz

PLC: Power Line Conducted Emission **APCM:** Antenna Port Conducted Measurement

Radiated Emission Test (Above 1 GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ 802.11n mode EIRP power is greater than 802.11ac, so test 11a mode and 11an mode.

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
-	802.11a	5150-5250	36 to 48	36, 44, 48	OFDM	6.0
-	802.11n (20MHz)		36 to 48	36, 44, 48	OFDM	MCS0
-	802.11n (40MHz)		38 to 46	38, 46	OFDM	MCS0
-	802.11ac (80MHz)		42	42	OFDM	MCS0
-	802.11a	5250-5350	52 to 64	52, 56, 64	OFDM	6.0
-	802.11n (20MHz)		52 to 64	52, 56, 64	OFDM	MCS0
-	802.11n (40MHz)		54 to 62	54, 62	OFDM	MCS0
-	802.11ac (80MHz)		58	58	OFDM	MCS0
-	802.11a	5470-5725	100 to 144	100, 120, 140	OFDM	6.0
-	802.11n (20MHz)		100 to 140	100, 120, 140	OFDM	MCS0
-	802.11n (40MHz)		102 to 134	102, 118, 134	OFDM	MCS0
-	802.11ac (80MHz)		106	106,122	OFDM	MCS0
-	802.11a	5725-5850	149 to 161	149, 157, 165	OFDM	6.0
-	802.11n (20MHz)		149 to 161	149, 157, 165	OFDM	MCS0
-	802.11n (40MHz)		151 to 159	151, 159	OFDM	MCS0
-	802.11ac (80MHz)		155	155	OFDM	MCS0

Radiated Emission Test (Below 1 GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	36 to 48	36	OFDM	DBPSK	6.0

Power Line Conducted Emission Test:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	36 to 48	36	OFDM	DBPSK	6.0

Antenna Port Conducted Measurement

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
-	802.11a	5150-5250	36 to 48	36, 44, 48	OFDM	6.0
-	802.11n/ac (20MHz)		36 to 48	36, 44, 48	OFDM	MCS0
-	802.11n/ac (40MHz)		38 to 46	38, 46	OFDM	MCS0
-	802.11ac (80MHz)		42	42	OFDM	MCS0
-	802.11a	5250-5350	52 to 64	52, 56, 64	OFDM	6.0
-	802.11n/ac (20MHz)		52 to 64	52, 56, 64	OFDM	MCS0
-	802.11n/ac (40MHz)		54 to 62	54, 62	OFDM	MCS0
-	802.11ac (80MHz)		58	58	OFDM	MCS0
-	802.11a	5470-5725	100 to 144	100, 120, 140	OFDM	6.0
-	802.11n/ac (20MHz)		100 to 140	100, 120, 140	OFDM	MCS0
-	802.11n/ac (40MHz)		102 to 134	102, 118, 134	OFDM	MCS0
-	802.11ac (80MHz)		106	106,22	OFDM	MCS0
-	802.11a	5725-5850	149 to 161	149, 157, 161	OFDM	6.0
-	802.11n/ac (20MHz)		149 to 161	149, 157, 161	OFDM	MCS0
-	802.11n/ac (40MHz)		151 to 159	151, 159	OFDM	MCS0
-	802.11ac (80MHz)		155	155	OFDM	MCS0

3.2.2 Test Condition:

Applicable to	Normal Environmental Conditions	Normal Input Power
RE ≥ 1G	25deg. C, 60%RH	120Vac, 60Hz
RE < 1G	25deg. C, 60%RH	120Vac, 60Hz
PLC	25deg. C, 60%RH	120Vac, 60Hz
APCM	25deg. C, 60%RH	120Vac, 60Hz

3.3 Duty Cycle of Test Signal

The test result refer to the report FVC-ESH-P20112379B-14.

Test Mode	Antenna	Channel [MHz]	Duty Cycle [%]	10log(1/x) Factor[dB]
11A	Ant1	5180	98.10	0.08
	Ant2	5180	98.10	0.08
	Ant1	5220	98.10	0.08
	Ant2	5220	98.10	0.08
	Ant1	5240	98.10	0.08
	Ant2	5240	98.10	0.08
	Ant1	5260	98.10	0.08
	Ant2	5260	98.10	0.08
	Ant1	5280	98.10	0.08
	Ant2	5280	98.10	0.08
	Ant1	5320	98.10	0.08
	Ant2	5320	98.10	0.08
	Ant1	5500	98.10	0.08
	Ant2	5500	98.10	0.08
	Ant1	5600	98.10	0.08
	Ant2	5600	98.10	0.08
	Ant1	5700	98.10	0.08
	Ant2	5700	98.10	0.08
	Ant1	5745	98.10	0.08
	Ant2	5745	98.10	0.08
	Ant1	5785	98.10	0.08
	Ant2	5785	98.10	0.08
	Ant1	5825	98.10	0.08
	Ant2	5825	98.10	0.08
11N20MIMO	Ant1	5180	97.96	0.09
	Ant2	5180	97.96	0.09
	Ant1	5220	97.96	0.09
	Ant2	5220	97.96	0.09
	Ant1	5240	97.96	0.09
	Ant2	5240	97.96	0.09
	Ant1	5260	97.96	0.09
	Ant2	5260	97.96	0.09
	Ant1	5280	97.96	0.09
	Ant2	5280	97.96	0.09
	Ant1	5320	97.96	0.09
	Ant2	5320	97.96	0.09
	Ant1	5500	97.96	0.09
	Ant2	5500	97.96	0.09
	Ant1	5600	97.96	0.09