

Application for FCC Certification
On behalf of

Zhejiang Dahua Vision Technology Co., Ltd.

Product Name	Model No.
CPE	DH-PFM881

FCC ID: SVNDH-PFM881

(MPE Calculation)

Prepared For : Zhejiang Dahua Vision Technology Co., Ltd.
The 1st floor, building F, No1199
Bin an road Changhe Street, Binjiang District,
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Report No. : ACI-F14150A1
Date of Test : Sep. 11 – 19, 2014
Date of Report : Nov. 04, 2014

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TEST REPORT FOR FCC CERTIFICATE

Applicant : Zhejiang Dahua Vision Technology Co., Ltd.

Manufacturer : Zhejiang Dahua Vision Technology Co., Ltd.

EUT Description :

EUT	Model No.
CPE	DH-PFM881

Power Supply : DC 24V (POE Power)

Test Voltage : AC 120V/60Hz (to POE adapter)

Test Procedure Used:

FCC OET Bulletin 65 August 1997

The device described above is tested by Audix Technology (Shanghai) Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC OET Bulletin 65.

The test results are contained in this test report and Audix Technology (Shanghai) Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. This report also shows that the EUT (M/N: Refer to Sec2.1), which was tested on Sep. 11 – 19, 2014 is technically compliance with the FCC limits.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Audix Technology (Shanghai) Co., Ltd.

This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

Date of Test : Sep. 11 – 19, 2014 Date of Report : Nov. 04, 2014

Producer : Kathy Wang
KATHY WANG / Supervisor

Review : Dio Yang
DIO YANG / Deputy Manager

AUDIX[®] For and on behalf of
Audix Technology (Shanghai) Co., Ltd.

Signatory : Sammy Chen
Authorized Signature EMC SAMMY CHEN / Deputy Manager

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test

Description :

EUT	Model Number
CPE	DH-PFM881

Type of EUT : Production Pre-product Pro-type

Note #1 : The modified histories of report are as follows:

Report No.	Model No.	Rev. Summary	Edition No.	Data of Rev.
ACI-F14150	DH-PFM880	Original Report	0	Sep 22, 2014
ACI-F14150A1	DH-PFM881	To add a new model	Rev. A1	Nov 04, 2014

Note #2 : The DH-PFM880 and DH-PFM881 are all the same except for different enclosure and antenna.
(DH-PFM880 using metal enclosure and external antenna, DH-PFM881 using plastic enclosure and built-in antenna.)

Thus, the MPE was re-calculated using DH-PFM881's antenna gain, and recorded in the report.

Radio Tech : IEEE 802.11a/n HT20, HT40

Freq. Band : 5.8GHz band:
For 802.11a & 802.11n HT20:
5745MHz (Ch149), 5765MHz (Ch153),
5785MHz (Ch157), 5805MHz (Ch161),
5825MHz (Ch165)
For 802.11n HT40:
5755MHz (Ch151), 5795MHz (Ch159)

Tested Freq. : For 802.11a & 802.11n HT20:
5745MHz (Ch149), 5785MHz (Ch157),
5825MHz (Ch165)
For 802.11n HT40:
5755MHz (Ch151), 5795MHz (Ch159)

Modulation : OFDM

Antenna Gain : 15 dBi for DH-PFM881

Applicant : Zhejiang Dahua Vision Technology Co., Ltd.
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Manufacturer : Zhejiang Dahua Vision Technology Co., Ltd.
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Bin an road Changhe Street, Binjiang District,
Hangzhou, P.R. China.

1.2 Description of Test Facility

Site Description (Semi-Anechoic Chamber) : Sept. 17, 1998 file on
Mar 16, 2012 Renewed
Federal Communications Commission
FCC Engineering Laboratory
7435 Oakland Mills Road
Columbia, MD 21046, USA

Name of Firm : Audix Technology (Shanghai) Co., Ltd.

Site Location : 3F 34 Bldg 680 Guiping Rd.,
Caohejing Hi-Tech Park,
Shanghai 200233, China

FCC registration Number : 91789

Accredited by NVLAP, Lab Code : 200371-0

1.3 Measurement Uncertainty

Maximum Conducted Output Power Expanded Uncertainty : $U = \pm 1.56\text{dB}$

2 SUMMARY OF STANDARDS AND RESULTS

2.1 Applicable Standard

FCC OET Bulletin 65:1997

2.2 Specification Limits

Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/150	30
1500-100,000	--	--	1.0	30

f = frequency in MHz

*Plane-wave equivalent power density

NOTE: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

The limit value 1.0mW/cm² is available for this EUT.

2.3 MPE Calculation Method

$$S = PG/(4 \pi R^2)$$

$$R = [PG/(4 \pi S)]^{0.5}$$

where: S = power density (in appropriate units, e.g. mW/ cm²)

P = power input to the antenna (in appropriate units, e.g., mW)

(the measured power value see Report: F14144 Section 6.6)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

2.4 Calculated Result

2.4.1 Radio Frequency Radiation Exposure Evaluation–802.11a

Frequency	Total Peak Power	Output Power to Antenna	Antenna Gain		Power Density	Limit
(MHz)	(dBm)	(mW)	(dBi)	(Numeric)	(mW/cm ²)	(mW/cm ²)
5745	12.79	19.01	15.00	31.62	0.12	1.0
5785	13.24	21.09	15.00	31.62	0.13	1.0
5825	13.26	21.18	15.00	31.62	0.13	1.0

Separation distance R= 20cm.

Frequency	Total Peak Power	Output Power to Antenna	Antenna Gain		Limit	Distance
(MHz)	(dBm)	(mW)	(dBi)	(Numeric)	(mW/cm ²)	(cm)
5745	12.79	19.01	15.00	31.62	1.0	20
5785	13.24	21.09	15.00	31.62	1.0	20
5825	13.26	21.18	15.00	31.62	1.0	20

The antenna used for this transmitter must be installed to provide a separation distance of at least 20cm from all persons.

2.4.2 Radio Frequency Radiation Exposure Evaluation–802.11n HT20

Frequency	Total Peak Power	Output Power to Antenna	Antenna Gain		Power Density	Limit
(MHz)	(dBm)	(mW)	(dBi)	(Numeric)	(mW/cm ²)	(mW/cm ²)
5745	13.13	20.56	15.00	31.62	0.13	1.0
5785	13.34	21.58	15.00	31.62	0.14	1.0
5825	12.86	19.32	15.00	31.62	0.12	1.0

Separation distance R= 20cm.

Frequency	Total Peak Power	Output Power to Antenna	Antenna Gain		Limit	Distance
(MHz)	(dBm)	(mW)	(dBi)	(Numeric)	(mW/cm ²)	(cm)
5745	13.13	20.56	15.00	31.62	1.0	20.00
5785	13.34	21.58	15.00	31.62	1.0	20.00
5825	12.86	19.32	15.00	31.62	1.0	20.00

The antenna used for this transmitter must be installed to provide a separation distance of at least 20cm from all persons.

2.4.3 Radio Frequency Radiation Exposure Evaluation – HT40

Frequency	Total Peak Power	Output Power to Antenna	Antenna Gain		Power Density	Limit
(MHz)	(dBm)	(mW)	(dBi)	(Numeric)	(mW/cm ²)	(mW/cm ²)
5755	11.70	14.79	15.00	31.62	0.09	1.0
5795	15.56	35.97	15.00	31.62	0.23	1.0

Separation distance R= 20cm.

Frequency	Total Peak Power	Output Power to Antenna	Antenna Gain		Limit	Distance
(MHz)	(dBm)	(mW)	(dBi)	(Numeric)	(mW/cm ²)	(cm)
5755	11.70	14.79	15.00	31.62	1.0	20.00
5795	15.56	35.97	15.00	31.62	1.0	20.00

The antenna used for this transmitter must be installed to provide a separation distance of at least 20cm from all persons.