

Timco Engineering, Inc

From: andrea.hsia@tw.bureauveritas.com
Sent: Friday, April 20, 2018 4:28 AM
To: cb@timcoengr.com
Cc: andrea.hsia@tw.bureauveritas.com
Subject: Re: SUBJECT: TIMCO-TCB/Desk Aduit - CISCO SYSTEMS INC. - FCC ID: UDX-60057010 - JOB #: 2534ATC16-2534BTC16
Attachments: Test Report (NII)_rev 2.pdf; Theory of Operation (Antenna spec-Ant. 20)_rev 2.pdf; Theory of Operation (Antenna spec-Ant. 21 V)_rev 2.pdf; Theory of Operation (Antenna spec-Ant. 25 V)_rev 2.pdf; Theory of Operation (Antenna spec-Ant. 27 V)_rev 2.pdf; Theory of Operation (Antenna spec-AIR-ANT2513P4M-N Azimuth)_rev 2.pdf; Theory of Operation (Antenna spec-AIR-ANT2513P4M-N Elevation)_rev 2.pdf; Users Manual_rev 2.pdf

Hi Sirs,

Please refer to as below for our reply.

Please kindly help us to review it, if have no any further question please submit to FCC.

Thank you so much.

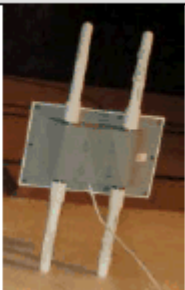
1. The 21dBm at above 30 degree restriction is not added to the test report.

BV TW: We modified p154~174 of NII report.

(See attached file: Test Report (NII)_rev 2.pdf)

2. Checking your response, how to achieve and maintain the 21dBm at above 30 degree was not addressed. This should be clearly described in the test report and user/installation manual.

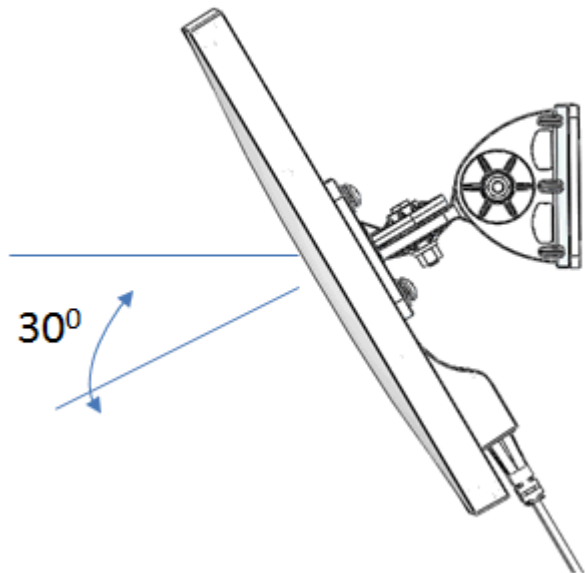
BV TW: We modified p11~12 of NII report. Also modified antenna pattern to you.

Ant. No.	Antenna Gain (dBi)	Antenna Install Degree
20	-1	

Due to device Will restricted installation position as above photo, thus consider to above 30 degrees highest antenna gain are chosen from XZ and YZ Plane (antenna specification of 60~-60 dug and 120~-120 dug)

(See attached file: Theory of Operation (Antenna spec-Ant. 20)_rev 2.pdf)

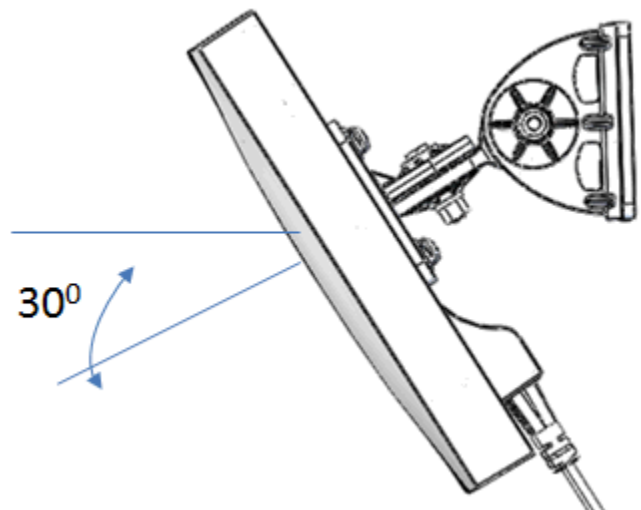
21	11.2
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Due to device Will restriced installation position as above photo, thus consider to above 30 degrees highest antenna gain are chosen from XZ and YZ Plane (antenna specification of 30~180 dug)

(See attached file: Theory of Operation (Antenna spec-Ant. 21 V)_rev 2.pdf)

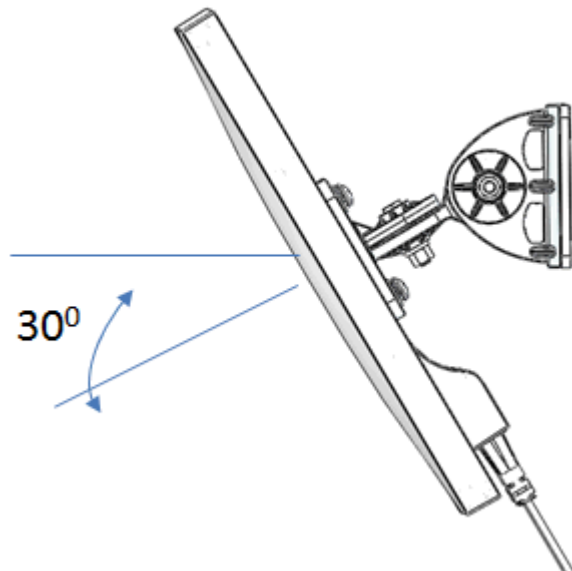
25	1.8
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Due to device Will restriced installation position as above photo, thus consider to above 30 degrees highest antenna gain are chosen from XZ and YZ Plane (antenna specification of 60~180 dug and -150~-180 dug)

(See attached file: Theory of Operation (Antenna spec-Ant. 25 V)_rev 2.pdf)

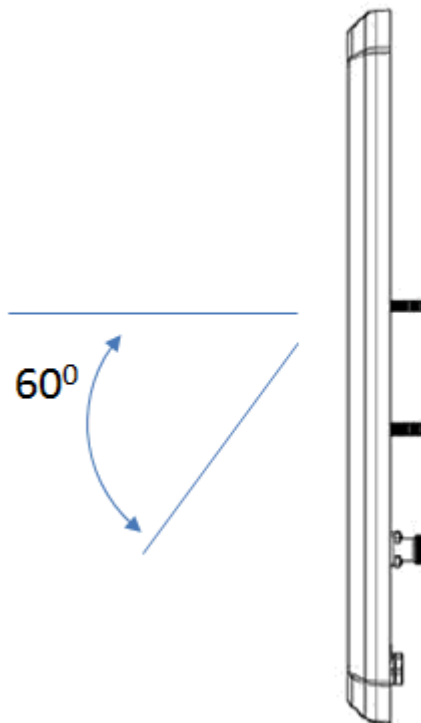
27	9.7
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Due to device Will restriced installation position as above photo, thus consider to above 30 degrees highest antenna gain are chosen from XZ and YZ Plane (antenna specification of 30~180 dug)

(See attached file: Theory of Operation (Antenna spec-Ant. 27 V)_rev 2.pdf)

AIR-ANT2513P4M-N	0.77
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Due to device Will restriced installation position as above photo, thus consider to above 30 degrees highest antenna gain are chosen from Azimuth and Elevation Plane (antenna specification of 0~30 dug and 210~360 dug)

(See attached file: Theory of Operation (Antenna spec-AIR-ANT2513P4M-N Azimuth)_rev 2.pdf)(See attached file: Theory of Operation (Antenna spec-AIR-ANT2513P4M-N Elevation)_rev 2.pdf)

3	-	5.20	
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Due to device Will restriced installation position as above photo, thus consider to above 30 degrees highest antenna gain are chosen from Max Gain

3. Who is responsible for installation, user or professional installer? If professional, is there any training?

BV TW: Please refer to as below for client's reply.

Regarding the further examination of professional installation here are our replies:

The equipment will be installed by professional installers. These installers are associated with the Meraki sales partners/distributers. Since Meraki does not sell its devices directly to users, partners are responsible for the final install of the equipment.

There is no formal training for installers, however each Meraki partner and subsequent install must follow the instructions in the official Meraki installation guide. This is a condition for distribution.

4. The manual should be detailed and specific about the restriction.

BV TW: Client modified the manual and reply as below.

I have updated the install guide to address the rule explanations as well as how we limit the power for band 1. See section 6 in the attached guide. Specific reference to our software defined radio usage.

(See attached file: Users Manual_rev 2.pdf)

4. It appears this device is Point-to-Multipoint (P2M)? Therefore, please address KDB 789033 D02, particularly, section H

BV TW: Please refer to as below for client's reply.

For **outdoor operation of the AP in the 5150-5250 MHz band**, the maximum output power shall not exceed 1W. EIRP at any elevation angle above 30 degrees (as measured from the horizon) shall not exceed 125mW, per the FCC Part 15.407 rules. The highest antenna gains from the horizon above 30 degrees are as below:

Radio	Ant. No.	Antenna Gain (dBi)	Antenna Install Degree
2	20	-1	
	21	11.2	
	25	1.8	
	27	9.7	
	AIR-ANT2513P4M-N	0.77	
3	-	5.20	

And the following condition for maximum EIRP must apply:
and shall not exceed 21 dBm above 30 degrees over the horizon. This is maintained through the Cisco Meraki Software Defined Radio implementation, limiting the power output at a given band, limiting the maximum EIRP for 5150-5250 MHz to 21 dBm when implemented outdoors. All power limits and band usage according to FCC rules are implemented through the SDR.

5. In the test report, both indoor/outdoor is mentioned. Mixed indoor/outdoor is not allowed unless professionally installed.

BV TW: Please refer to as below for client's reply.

It is professionally installed

Best Regards,

Andrea Hsia, Certification Div.
Bureau Veritas CPS (H.K.) Ltd., Taoyuan Branch

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▼ "Timco Engineering, Inc" ---2018/03/26 上午 11:57:50---TIMCO ENGINEERING INC.
and Certification

Product Testing

From: "Timco Engineering, Inc" <cb@timcoengr.com>
To: Annie Cheng/TWN/VERITAS@VERITAS, Andrea Hsia/TWN/VERITAS@VERITAS, Miffy Tsao/TWN/VERITAS@VERITAS, Amanda Wu/TWN/VERITAS@VERITAS, Emily Lin/TWN/VERITAS@VERITAS, Ida Chen/TWN/VERITAS@VERITAS
Date: 2018/03/26 上午 11:57
Subject: SUBJECT: TIMCO-TCB/Desk Audit - CISCO SYSTEMS INC. - FCC ID: UDX-60057010 - JOB #: 2534ATC16-2534BTC16

TIMCO ENGINEERING INC.

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Certification ✉: cb@timcoengr.com

Testing ✉: testing@timcoengr.com

Product Testing and Certification

FCC Approvals

Industry Canada Approvals

Notified Body for Europe

Product Safety Approvals

Australian Testing

03/25/2018

Ms. Anne Kuo

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SUBJECT: TIMCO-TCB/Desk Audit - CISCO SYSTEMS INC. - FCC ID: UDX-60057010 - JOB #: 2534ATC16-2534BTC16

Dear Ms. Kuo:

We received a second RT for FCC ID: UDX-60057010, please find the email from FCC below. Kindly note the FCC requires they received a reply within 30 days.

Date of Original E-mail:
03/23/2018

We checked the response. However, the issues weren't addressed adequately.

1. The 21dBm at above 30 degree restriction is not added to the test report.
2. Checking your response, how to achieve and maintain the 21dBm at above 30 degree was not addressed. This

should be clearly described in the test report and user/installation manual.

3. Who is responsible for installation, user or professional installer? If professional, is there any training?

4. The manual should be detailed and specific about the restriction.

4. It appears this device is Point-to-Multipoint (P2M)? Therefore, please address KDB 789033 D02, particularly, section H

5. In the test report, both indoor/outdoor is mentioned. Mixed indoor/outdoor is not allowed unless professionally installed.

Sincerely,

Timco Engineering, Inc.

"This message contains confidential information.

To know more, please click on the following link: <http://disclaimer.bureauveritas.com>"