RF Exposure Evaluation Declaration

FCC ID:	NCY-A600
APPLICANT:	Trango Systems, Inc.

Application Type:	Certification
Product:	Altum AC600
Model No.:	A600-25-US, A600-19-US, A600-EXT-US
Brand Name:	Trango
FCC Classification:	Unlicensed National Information Infrastructure (UNII) Digital Transmission System (DTS)

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ACCREDITED
TESTING LABORATORY
CERTIFICATE #3628.01

The test results relate only to the samples tested.
The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.
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Revision History

Report No.	Version	Description	Issue Date
1412RSU01505	Rev. 01	Initial report	12-23-2014

1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name	Altum AC600
Model No.	A600-25-US, A600-19-US, A600-EXT-US
Power Type	POE input
Frequency Range	**For 2.4GHz Band:** 802.11b/g/n: 2412 ~ 2462 MHz **For 5.0GHz Band:** 802.11a/n/ac: 5150 ~ 5250MHz 5725 ~ 5850MHz
Type of Modulation	802.11b: DSSS 802.11g/a/n/ac: OFDM
Adapter	Power Over Ethernet (Gigabit) M/N: HS36-2401250US Input: 100-240V ~ 50/60Hz 1.0A Output: +24.0V ~ 1250mA

Note: The difference of models is that the product uses the different antennas.

2. RF Exposure Evaluation

2.1. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	f/1500	6
1500-100,000	--	--	1	30

f= Frequency in MHz

Calculation Formula: Pd = (Pout*G)/(4*pi*r2)

Where
Pd = power density in mW/cm2
Pout = output power to antenna in mW
G = gain of antenna in linear scale
Pi = 3.1416
r = distance between observation point and center of the radiator in cm

Pd is the limit of MPE, 1mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

2.2. Test Result of RF Exposure Evaluation

Product	Altum AC600
Test Item	RF Exposure Evaluation

Antenna Gain: The maximum gain measured in fully anechoic chamber is 9dBi for 2.4GHz and 25dBi for 5GHz in logarithm scale.

For 2.4G ISM Band:

Test Mode	Frequency Band (MHz)	Maximum Average Output Power (dBm)	Limit of Power Density S(mW/cm^2)	Safety Distance (cm)
802.11b/g/n-HT20	2412 ~ 2462	22.36	1	10.43
802.11n-HT40	2422 ~ 2452	14.75	1	4.34

For 5G UNII Band:

Test Mode	Frequency Band (MHz)	Maximum Average Output Power (dBm)	Limit of Power Density S(mW/cm^2)	Safety Distance (cm)
802.11a/n-HT20/ ac-VHT20	5180 ~ 5240	15.05	1	28.37
	5745 ~ 5825	29.13	1	143.51
802.11n-HT40/ ac-VHT40	5190 ~ 5230	14.02	1	25.20
	5755 ~ 5795	29.02	1	141.71
802.11ac-VHT80	5210	13.52	1	23.79
	5775	28.75	1	137.37

CONCULISON:

The Safety Distance of this equipment was 143.51 cm.

The End