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Project No: CB10510244

Maximum Permissible Exposure

Applicant's company	Technicolor Delivery Technologies Belgium
Applicant Address	Prins Boudewijnlaan 47, 2650 EDEGEM BELGIUM
FCC ID	RSE-TG1700DACHP
Manufacturer's company	Technicolor Delivery Technologies Belgium
Manufacturer Address	Prins Boudewijnlaan 47, 2650 EDEGEM BELGIUM

Model Name	MediaAccess TG1700ac High Power
Brand Name	technicolor
Model No.	TG1700dac HP, TG1700ETIdac HP
Ref. Standard(s)	47 CFR FCC Part 2 Subpart J, section 2.1091
EUT Freq. Range	2400 ~ 2483.5MHz / 5150 ~ 5250MHz / 5725 ~ 5850MHz
Received Date	Oct. 07, 2014
Final Test Date	Sep. 19, 2016
Submission Type	Original Equipment

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Testing Laboratory
1190

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History of This Assessment Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA4O2168-02	Rev. 01	Initial issue of report	Dec. 19, 2016

1. MAXIMUM PERMISSIBLE EXPOSURE

1.1. Applicable Standard

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2 m normally can be maintained between the user and the device.

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm²)	Averaging Time |E|², |H|² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	6
30-300	61.4	0.163	1.0	6
300-1500			f /300	6
1500-100,000			5	6

(B) 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/ cm²)	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)*	30
30-300	27.5	0.073	0.2	30
300-1500			f /1500	30
1500-100,000			1.0	30

Note: f = frequency in MHz ; *Plane-wave equivalent power density

1.2. MPE Calculation Method

E (V/m) = $\frac{\sqrt{30 \times P \times G}}{d}$ Power Density: *Pd* (W/m²) = $\frac{E^2}{377}$

E = Electric field (V/m)

P = Peak RF output power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

Pd = $\frac{30 \times P \times G}{377 \times d^2}$

From the EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna, the RF power density can be obtained.

1.3. Basic Description of Equipment under Test

Model Name : MediaAccess TG1700ac High Power

Model No. : TG1700dac HP, TG1700ETIdac HP

Brand Name : technicolor

Product Code :

Model No.	Product Code	Description
TG1700dac HP	DSLCBH843HP	GW TG1700dac HP Gen NAM
TG1700dac HP	DSLCBH643RJ	GW TG1700dac HP Gen ROW
TG1700ETIdac HP	DSLCBH643EM	GW TG1700dac HP Etisalat AE

1.4. Calculated Result and Limit

Exposure Environment: General Population / Uncontrolled Exposure

For 5GHz UNII Band:

Antenna Type : Printed Antenna

Conducted Power for IEEE 802.11VHT20 / SDM MCS0Nss3: 22.26 dBm

Distance (m)	Antenna Gain (dBi)	Antenna Gain (numeric)	The maximum combined Average Output Power		Power Density (S) (mW/cm²)	Limit of Power Density (S) (mW/cm²)	Test Result
			(dBm)	(mW)			
0.2	7.64	5.8076	22.1961	165.8093	0.191672	1	Complies

For 2.4GHz Band:

Antenna Type : Printed Antenna

Conducted Power for IEEE 11n HT20 / MCS0 CDD : 24.89dBm

Distance (m)	Antenna Gain (dBi)	Antenna Gain (numeric)	The maximum combined Average Output Power		Power Density (S) (mW/cm²)	Limit of Power Density (S) (mW/cm²)	Test Result
			(dBm)	(mW)			
0.2	5.33	3.4104	24.8863	308.0590	0.209115	1	Complies

Conclusion:

Both of the WLAN 2.4GHz Band and WLAN 5GHz Band can transmit simultaneously, the formula of calculatedthe MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + ...etc. < 1

CPD = Calculation power density

LPD = Limit of power density

Therefore, the worst-case situation is 0.209115 / 1 + 0.191672 / 1 = 0.400787, which is less than "1". This confirmed that the device comply with FCC 1.1310 MPE limit.