

## ISED MPE REPORT

### Certification

**Applicant Name:**

SOLiD, Inc.

**Address:**

10, 9th Floor, SOLiD Space, Pangyoyeok-ro  
220, Bundang-gu, Seongnam-si, Gyeonggi-do, 463-400,  
South Korea

**Date of Issue:**

November 30, 2017

**Test Site/Location:**

HCT CO., LTD., 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA

**Report No.:** HCT-R-1711-E009

**ISED Registration Number:** 5944A-5

**IC** : 9354A-NHR1900P

**APPLICANT** : SOLiD, Inc.

**Model:** N20-R-HRDU-1900P

**EUT Type:** ALLIANCE\_N20

The measurements shown in this report were made in accordance with the procedures specified in §2.947. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them.

HCT CO., LTD. Certifies that no party to this application has subject to a denial of Federal benefits that includes FCC benefits pursuant to section 5301 of the Anti-Drug Abuse Act of 1998, 21 U.S.C. 853(a)



**Report prepared by : Kyung Soo Kang**  
Engineer of Telecommunication testing center



**Approved by : Jong Seok Lee**  
Manager of Telecommunication testing center

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## Version

TEST REPORT NO.	DATE	DESCRIPTION
HCT-R-1711-E009	November 30, 2017	- First Approval Report

# RF Exposure Statement

## 1. LIMITS

### 1-1 Limits for IC

The limit for Maximum Permissible Exposure (MPE), specified in IC RSS-102, is listed in Table 4  
According to IC RSS-102: the criteria listed in the following table shall be used to evaluate the environmental impact of human exposure to radio-frequency(RF) radiation as specified in RSS-102

Table 4: RF Field Strength Limits for Devices Used by the General Public (Uncontrolled Environment)

Frequency range (MHz)	Electric field Strength (V/m)	Magnetic field Strength (A/m)	Power density (W/m <sup>2</sup> )	Averaging time (minutes)
0.003-10	83	90	-	Instantaneous*
0.1-10	-	$0.73/f$	-	6**
1.1-10	$87/f^{0.5}$	-	-	6**
10-20	27.46	0.0728	-2	6
20-48	$58.07/f^{0.25}$	$0.1540/f^{0.25}$	$8.944/f^{0.5}$	6
48-300	22.06	0.05852	1.291	6
300-6000	$3.142 f^{0.3417}$	$0.008335 f^{0.3417}$	$0.02619 f^{0.6834}$	6
6000-15000	61.4	0.163	10	6
15000-150000	61.4	0.163	10	$616000/f^{1.2}$
150000-300000	$0.158 f^{0.5}$	$4.21 \times 10^{-4} f^{0.5}$	$6.67 \times 10^{-5} f$	$616000/f^{1.2}$

**Note:**  $f$  is frequency in MHz.

\* Based on nerve stimulation (NS).

\*\* Based on specific absorption rate (SAR).

## 2. MAXIMUM PERMISSIBLE EXPOSURE Prediction

Prediction of MPE limit at a given distance

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

S = Power density

P = power input to antenna

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

### 3. RESULTS

#### \* LTE (5 MHz)

Max Peak output Power at antenna input terminal	43.09000	dBm
Max Peak output Power at antenna input terminal	20.37042	W
Prediction distance	5.00000	m
Prediction frequency	1992.50000	MHz
Antenna Gain(typical)	17.00000	dBi
Antenna Gain(numeric)	50.11872	-
Power density at prediction frequency (S)	3.24975	W/m <sup>2</sup>
MPE limit for uncontrolled exposure at prediction frequency	4.70917	W/m <sup>2</sup>

#### \* LTE (10 MHz)

Max Peak output Power at antenna input terminal	43.09000	dBm
Max Peak output Power at antenna input terminal	20.37042	W
Prediction distance	5.00000	m
Prediction frequency	1990.00000	MHz
Antenna Gain(typical)	17.00000	dBi
Antenna Gain(numeric)	50.11872	-
Power density at prediction frequency (S)	3.24975	W/m <sup>2</sup>
MPE limit for uncontrolled exposure at prediction frequency	4.70513	W/m <sup>2</sup>

#### \* WCDMA

Max Peak output Power at antenna input terminal	42.99000	dBm
Max Peak output Power at antenna input terminal	19.90673	W
Prediction distance	5.00000	m
Prediction frequency	1992.50000	MHz
Antenna Gain(typical)	17.00000	dBi
Antenna Gain(numeric)	50.11872	-
Power density at prediction frequency (S)	3.17578	W/m <sup>2</sup>
MPE limit for uncontrolled exposure at prediction frequency	4.70917	W/m <sup>2</sup>

## \* CDMA

Max Peak output Power at antenna input terminal	43.08000	dBm
Max Peak output Power at antenna input terminal	20.32357	W
Prediction distance	5.00000	m
Prediction frequency	1993.75000	MHz
Antenna Gain(typical)	17.00000	dBi
Antenna Gain(numeric)	50.11872	-
Power density at prediction frequency (S)	3.24228	W/m <sup>2</sup>
MPE limit for uncontrolled exposure at prediction frequency	4.71119	W/m <sup>2</sup>

## \* GSM

Max Peak output Power at antenna input terminal	42.99000	dBm
Max Peak output Power at antenna input terminal	19.90673	W
Prediction distance	5.00000	m
Prediction frequency	1930.40000	MHz
Antenna Gain(typical)	17.00000	dBi
Antenna Gain(numeric)	50.11872	-
Power density at prediction frequency (S)	3.17578	W/m <sup>2</sup>
MPE limit for uncontrolled exposure at prediction frequency	4.60836	W/m <sup>2</sup>