

# RF Exposure Evaluation

Test report

On Behalf of

Shenzhen ThreeNH Technology Co.,Ltd.

For

GRATING SPECTROPHOTOMETER

Model No.:TS7700, TS7706, TS7708, TS7709, TS7600, TS7606, TS7608,  
TS7609, TS7400, TS7410, TS7420, TS7430, TS7010, TS7010A, TS7020,  
TS7030, TS7036, TS7060, TS7080, TS7090, DS-100, DS-100A, DS-200,  
DS-300, DS360, DS-600, DS-800, DS-900, TS10, TS10A, TS20

FCC ID: 2AMRM-TS7NXX

Prepared for : Shenzhen ThreeNH Technology Co.,Ltd.  
4/F,Building 8,Nangang Second Industry Zone,Xili,Nanshan  
District,Shenzhen, Guangdong, China

Prepared By : Shenzhen HUAK Testing Technology Co., Ltd.  
1F, B2 Building, Junfeng Zhongcheng Zhizao Innovation Park, Fuhai  
Street, Bao'an District, Shenzhen City, China

Date of Test: Sep. 03, 2020 -- Sep. 14, 2020

Date of Report: Sep. 14, 2020

## 1 General Description of EUT

Product Name:	GRATING SPECTROPHOTOMETER
Model/Type reference:	TS7700
Serial Model:	TS7706, TS7708, TS7709, TS7600, TS7606, TS7608, TS7609, TS7400, TS7410, TS7420, TS7430, TS7010, TS7010A, TS7020, TS7030, TS7036, TS7060, TS7080, TS7090, DS-100, DS-100A, DS-200, DS-300, DS360, DS-600, DS-800, DS-900, TS10, TS10A, TS20
Trade Mark:	3nh
FCC ID	2AMRM-TS7NXX
Hardware Version:	V1.0
Software Version:	V1.3
Operation frequency:	2402MHz ~ 2480MHz
Channel separation:	2MHz
Channel number:	40
Modulation Technology:	GFSK
Antenna Type:	Chip Antenna
Antenna Gain:	1.5dBi
Power Supply:	DC3.7V from battery

## 2 RF Exposure Compliance Requirement

### 2.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

#### 4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

### 2.2 Limits

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances  $\leq 50$  mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$  for 1-g SAR and  $\leq 7.5$  for 10-g extremity SAR, where

$f(\text{GHz})$  is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation<sup>17</sup>

The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is  $\leq 50$  mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation

distance is  $< 5$  mm, a distance of 5 mm is applied to determine SAR test exclusion

### 3 EUT RF Exposure

GFSK						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	2.543	2±1	3	1.995	0.618	3.0
Middle (2440MHz)	2.357	2±1	3	1.995	0.623	
Highest (2480MHz)	2.362	2±1	3	1.995	0.628	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: HK2009102514-E