



**Version**

<b>Version No.</b>	<b>Date</b>	<b>Description</b>
V1.0	August 26, 2021	Original

**Shenzhen UnionTrust Quality and Technology Co., Ltd.**

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UTTR-RF-RSS102-V1.1

## CONTENTS

<b>1.</b>	<b>Test Laboratory .....</b>	<b>4</b>
<b>2.</b>	<b>Client Information .....</b>	<b>5</b>
<b>2.1.</b>	<b>Applicant Information .....</b>	<b>5</b>
<b>2.2.</b>	<b>Manufacturer Information .....</b>	<b>5</b>
<b>3.</b>	<b>Equipment Under Test (EUT) and Ancillary Equipment (AE).....</b>	<b>6</b>
<b>3.1.</b>	<b>About EUT .....</b>	<b>6</b>
<b>4.</b>	<b>Power Output Test Results .....</b>	<b>7</b>
<b>4.1.</b>	<b>RF Power Output .....</b>	<b>7</b>
<b>4.2.</b>	<b>Duty cycle .....</b>	<b>7</b>
<b>5.</b>	<b>Reference Documents for FCC .....</b>	<b>8</b>
<b>5.1.</b>	<b>Applicable Standards .....</b>	<b>8</b>
<b>5.2.</b>	<b>Test Limits .....</b>	<b>8</b>
<b>5.3.</b>	<b>Calculation Information .....</b>	<b>9</b>
<b>5.4.</b>	<b>Max. Antenna gain calculations .....</b>	<b>10</b>
<b>5.5.</b>	<b>Conclusion for maximum admissible antenna gain (FCC).....</b>	<b>10</b>

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### 1. Test Laboratory

<b>Company Name:</b>	Shenzhen UnionTrust Quality and Technology Co., Ltd.
<b>Address:</b>	Unit D/E of 9/F and 16/F, Block A, Building 6, Baoneng science and technology park, Longhua district, Shenzhen, China 518109
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 UTRR-RF-RSS102-V1.1

## 2. Client Information

### 2.1. Applicant Information

**Company Name:** Thales DIS AIS Deutschland GmbH  
**Address /Post:** Siemensdamm 50, 13629 Berlin, Germany  
**Telephone:** /  
**Postcode:** /

### 2.2. Manufacturer Information

**Company Name:** Thales DIS AIS Deutschland GmbH  
**Address /Post:** Werinherstr.81, 81541 Munich, Germany  
**Telephone:** /  
**Postcode:** /

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### 3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

#### 3.1. About EUT

<b>EUT Description</b>	Module
<b>Model name</b>	PLS63-W
<b>GSM Bands</b>	GSM850/1900
<b>UTRA Bands</b>	Band II/ Band IV/ Band V
<b>E-UTRA Bands</b>	FDD Band 2/ Band 4/ Band 5/ Band 7/Band 8/ Band 12/ Band 13/ Band 26/ Band 66
	TDD Band 38/ Band 41
<b>Antenna Type</b>	External Antenna
<b>FCC ID:</b>	QIPPLS63-W

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#### 4. Power Output Test Results

##### 4.1. RF Power Output

Frequency Band	Highest Power Output(dBm)
LTE Band 8	24.5

##### 4.2. Duty cycle

Mode	Duty Cycle
LTE	1:1

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## 5. Reference Documents for FCC

### 5.1. Applicable Standards

The MPE report was carried out on a sample equipment to demonstrate limited compliance with FCC CFR 47 Part 2.1091.

FCC CFR 47, Part 2, FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS, Oct 1, 2011

Section 2.1091 Radiofrequency radiation exposure evaluation.

### 5.2. Test Limits

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 level 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 0.2m normally can be maintained between the user and the device.

Limits for Occupational / Controlled Exposure

Frequency Range [MHz]	Electric Field Strength (E) [V/m]	Magnetic Field Strength (H) [A/m]	Power Density (S) [mW/cm <sup>2</sup> ]	Averaging Times  E  <sup>2</sup> ,  H  <sup>2</sup> or S [minutes]
0.3 – 3.0	614	1.63	(100)*	6
3.0 – 30	1824/f	4.89/f	(900/f)*	6
30 – 300	61.4	0.163	1.0	6
300 – 1500	--	--	F/300	6
1500 - 100000	--	--	5	6

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/cm <sup>2</sup> ]	Averaging Times  E  <sup>2</sup> ,  H  <sup>2</sup> 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 - 100000	--	--	1.0	30

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

For the DUT, the limits for General Population / Uncontrolled Exposure are applicable.

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FCC: §1.1307	Cellular Radiotelephone Service (subpart H of part 22) Non-building-mounted antennas: height above ground level to lowest point of antenna < 10 m and total power of all channels > 1000 W ERP (1640 W EIRP)
FCC §1.1307	Personal Communications Services (part 24) Broadband PCS (subpart E): non-building-mounted antennas: height above ground level to lowest point of antenna < 10 m and total power of all channels > 2000 W ERP (3280 W EIRP)
FCC §1.1310	LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE) Table 1(B) Limits for General Population/Uncontrolled Exposure 300–1500 MHz: f/1500 mW/cm <sup>2</sup> 1500–100,000 MHz: 1.0 mW/cm <sup>2</sup> Subject to routine evaluation is required when the device operate at frequencies of 1.5 GHz or below and their
FCC §2.1091	effective radiated power (ERP) is 1.5 watts or more, or if they operate at frequencies above 1.5 GHz and their ERP is 3 watts or more.(a) Base stations are limited to 1640 watts peak equivalent isotropically radiated power (e.i.r.p.) with an antenna
FCC §27.1507(a)(3):	Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band are limited to 1 watt EIRP.

### 5.3. Calculation Information

For conservative evaluation consideration, only maximum power of each frequency band based on the tighter limits respectively are used to calculate the boundary power density.

Based on the FCC KDB 447498 D01 and 47 CFR §2.1091, the DUT is evaluated as a mobile device.

$$\text{Given } S = \frac{P \times G}{4\pi d^2} \qquad \text{Equation 1}$$

Where

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

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**5.4. Max. Antenna gain calculations**

Maximum antenna gain considerations for fixed/mobile operations for complying with limits:

Band	Highest Frame-Averaged Output Power (dBm)	Limit (mW/cm <sup>2</sup> )	Max antenna gain at 20cm (dBi)
LTE Band 8	24.5	0.599	9.7

Power limit according to §22.913(a), §24.232(c), §27.50(d)(4), §27.50(c)(10), §27.50(h)(2), §27.50(b)(10), §90.635:

Band	Highest Frame-Averaged Output Power (dBm)	Limit (W) (ERP/EIRP)	Max antenna gain at 20cm(dBi)
LTE Band 8	24.5	10	15

**5.5. Conclusion for maximum admissible antenna gain (FCC)**

Band	Maximum admissible antenna gain (dBi)
LTE Band 8	9.7

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\*\*\* End of Report \*\*\*

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