|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  | adshkkljjl |  |  |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| 仪器名称 | 无线通信测试仪 | 型号规格 | SP8011 |
| 制造厂家 | 北京星河亮点技术股份有限公司 | 出厂编号 |  |
| 送检单位名称 |  | | 资产编号 / |
| 客户地址 |  | | |

## 

## 1. Reference output frequency accuracy

REF OUT

|  |  |
| --- | --- |
| Ref Out(MHz) | Measured Value(MHz) |
| 10 |  |

The uncertainty of measurement results(*k* = 2): *U* = 6.0×10-8

## 2. RF signal generator frequency accuracy

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Frequency  (MHz) | RF1 IN/OUT Measured Value(MHz) | RF2 IN/OUT Measured Value(MHz) | RF1 OUT Measured Value(MHz) | RF2 OUT Measured Value(MHz) |
| 700 |  |  |  |  |
| 750 |  |  |  |  |
| 800 |  |  |  |  |
| 850 |  |  |  |  |
| 900 |  |  |  |  |
| 950 |  |  |  |  |
| 1000 |  |  |  |  |
| 1050 |  |  |  |  |
| 1100 |  |  |  |  |
| 1150 |  |  |  |  |
| 1200 |  |  |  |  |
| 1250 |  |  |  |  |
| 1300 |  |  |  |  |
| 1350 |  |  |  |  |
| 1400 |  |  |  |  |
| 1450 |  |  |  |  |
| 1500 |  |  |  |  |
| 1550 |  |  |  |  |
| 1600 |  |  |  |  |
| 1650 |  |  |  |  |

## RF signal generator frequency accuracy (continued)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Frequency  (MHz) | RF1 IN/OUT Measured Value(MHz) | RF2 IN/OUT Measured Value(MHz) | RF1 OUT Measured Value(MHz) | RF2 OUT Measured Value(MHz) |
| 1700 |  |  |  |  |
| 1750 |  |  |  |  |
| 1800 |  |  |  |  |
| 1850 |  |  |  |  |
| 1900 |  |  |  |  |
| 1950 |  |  |  |  |
| 2000 |  |  |  |  |
| 2050 |  |  |  |  |
| 2100 |  |  |  |  |
| 2150 |  |  |  |  |
| 2200 |  |  |  |  |
| 2250 |  |  |  |  |
| 2300 |  |  |  |  |
| 2350 |  |  |  |  |
| 2400 |  |  |  |  |
| 2450 |  |  |  |  |
| 2500 |  |  |  |  |
| 2550 |  |  |  |  |
| 2600 |  |  |  |  |
| 2650 |  |  |  |  |
| 2700 |  |  |  |  |

The uncertainty of measurement results(*k* = 2): *U* = 6.0×10-8

## 3. RF signal generator output level (RF1)

### 1. f=935.2MHz (GSM)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level(dBm) | Limit(dBm) | | IN/OUT Measured Value(dBm) | OUT Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| Upper | Lower |
| -10 | -9.00 | -11.00 |  |  | 0.19 |
| -20 | -19.00 | -21.00 |  |  | 0.19 |
| -30 | -29.00 | -31.00 |  |  | 0.19 |
| -40 | -39.00 | -41.00 |  |  | 0.19 |
| -50 | -49.00 | -51.00 |  |  | 0.24 |
| -60 | -59.00 | -61.00 |  |  | 0.24 |
| -70 | -69.00 | -71.00 |  |  | 0.24 |
| -80 | -79.00 | -81.00 |  |  | 0.24 |
| -90 | -89.00 | -91.00 |  |  | 0.24 |
| -100 | -99.00 | -101.00 |  |  | 0.24 |
| -110 | -109.00 | -111.00 |  |  | 0.25 |
| -120 | -119.00 | -121.00 |  |  | 0.25 |

### 2. f=959.8MHz (GSM)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level(dBm) | Limit(dBm) | | IN/OUT Measured Value(dBm) | OUT Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| Upper | Lower |
| -10 | -9.00 | -11.00 |  |  | 0.19 |
| -20 | -19.00 | -21.00 |  |  | 0.19 |
| -30 | -29.00 | -31.00 |  |  | 0.19 |
| -40 | -39.00 | -41.00 |  |  | 0.19 |
| -50 | -49.00 | -51.00 |  |  | 0.24 |
| -60 | -59.00 | -61.00 |  |  | 0.24 |
| -70 | -69.00 | -71.00 |  |  | 0.24 |
| -80 | -79.00 | -81.00 |  |  | 0.24 |
| -90 | -89.00 | -91.00 |  |  | 0.24 |
| -100 | -99.00 | -101.00 |  |  | 0.24 |
| -110 | -109.00 | -111.00 |  |  | 0.25 |
| -120 | -119.00 | -121.00 |  |  | 0.25 |

3. f=1805.2MHz (GSM)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level(dBm) | Limit(dBm) | | IN/OUT Measured Value(dBm) | OUT Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| Upper | Lower |
| -10 | -9.00 | -11.00 |  |  | 0.19 |
| -20 | -19.00 | -21.00 |  |  | 0.19 |
| -30 | -29.00 | -31.00 |  |  | 0.19 |
| -40 | -39.00 | -41.00 |  |  | 0.19 |
| -50 | -49.00 | -51.00 |  |  | 0.24 |
| -60 | -59.00 | -61.00 |  |  | 0.24 |
| -70 | -69.00 | -71.00 |  |  | 0.24 |
| -80 | -79.00 | -81.00 |  |  | 0.24 |
| -90 | -89.00 | -91.00 |  |  | 0.24 |
| -100 | -99.00 | -101.00 |  |  | 0.24 |
| -110 | -109.00 | -111.00 |  |  | 0.25 |
| -120 | -119.00 | -121.00 |  |  | 0.25 |

### 4. f=1879.8MHz (GSM)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level(dBm) | Limit(dBm) | | IN/OUT Measured Value(dBm) | OUT Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| Upper | Lower |
| -10 | -9.00 | -11.00 |  |  | 0.19 |
| -20 | -19.00 | -21.00 |  |  | 0.19 |
| -30 | -29.00 | -31.00 |  |  | 0.19 |
| -40 | -39.00 | -41.00 |  |  | 0.19 |
| -50 | -49.00 | -51.00 |  |  | 0.24 |
| -60 | -59.00 | -61.00 |  |  | 0.24 |
| -70 | -69.00 | -71.00 |  |  | 0.24 |
| -80 | -79.00 | -81.00 |  |  | 0.24 |
| -90 | -89.00 | -91.00 |  |  | 0.24 |
| -100 | -99.00 | -101.00 |  |  | 0.24 |
| -110 | -109.00 | -111.00 |  |  | 0.25 |
| -120 | -119.00 | -121.00 |  |  | 0.25 |

5. f=1930.2MHz (GSM)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level(dBm) | Limit(dBm) | | IN/OUT Measured Value(dBm) | OUT Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| Upper | Lower |
| -10 | -9.00 | -11.00 |  |  | 0.19 |
| -20 | -19.00 | -21.00 |  |  | 0.19 |
| -30 | -29.00 | -31.00 |  |  | 0.19 |
| -40 | -39.00 | -41.00 |  |  | 0.19 |
| -50 | -49.00 | -51.00 |  |  | 0.24 |
| -60 | -59.00 | -61.00 |  |  | 0.24 |
| -70 | -69.00 | -71.00 |  |  | 0.24 |
| -80 | -79.00 | -81.00 |  |  | 0.24 |
| -90 | -89.00 | -91.00 |  |  | 0.24 |
| -100 | -99.00 | -101.00 |  |  | 0.24 |
| -110 | -109.00 | -111.00 |  |  | 0.25 |
| -120 | -119.00 | -121.00 |  |  | 0.25 |

### 6. f=1989.8MHz (GSM)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level(dBm) | Limit(dBm) | | IN/OUT Measured Value(dBm) | OUT Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| Upper | Lower |
| -10 | -9.00 | -11.00 |  |  | 0.19 |
| -20 | -19.00 | -21.00 |  |  | 0.19 |
| -30 | -29.00 | -31.00 |  |  | 0.19 |
| -40 | -39.00 | -41.00 |  |  | 0.19 |
| -50 | -49.00 | -51.00 |  |  | 0.24 |
| -60 | -59.00 | -61.00 |  |  | 0.24 |
| -70 | -69.00 | -71.00 |  |  | 0.24 |
| -80 | -79.00 | -81.00 |  |  | 0.24 |
| -90 | -89.00 | -91.00 |  |  | 0.24 |
| -100 | -99.00 | -101.00 |  |  | 0.24 |
| -110 | -109.00 | -111.00 |  |  | 0.25 |
| -120 | -119.00 | -121.00 |  |  | 0.25 |

### 7. f=530MHz (TD-SCDMA)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level(dBm) | Limit(dBm) | | IN/OUT Measured Value(dBm) | OUT Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| Upper | Lower |
| -10 | -9.00 | -11.00 |  |  | 0.19 |
| -20 | -19.00 | -21.00 |  |  | 0.19 |
| -30 | -29.00 | -31.00 |  |  | 0.19 |
| -40 | -39.00 | -41.00 |  |  | 0.19 |
| -50 | -49.00 | -51.00 |  |  | 0.24 |
| -60 | -59.00 | -61.00 |  |  | 0.24 |
| -70 | -69.00 | -71.00 |  |  | 0.24 |
| -80 | -79.00 | -81.00 |  |  | 0.24 |
| -90 | -89.00 | -91.00 |  |  | 0.24 |
| -100 | -99.00 | -101.00 |  |  | 0.24 |
| -110 | -109.00 | -111.00 |  |  | 0.25 |
| -120 | -119.00 | -121.00 |  |  | 0.25 |

### 8. f=2010.8MHz (TD-SCDMA)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level(dBm) | Limit(dBm) | | IN/OUT Measured Value(dBm) | OUT Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| Upper | Lower |
| -10 | -9.00 | -11.00 |  |  | 0.19 |
| -20 | -19.00 | -21.00 |  |  | 0.19 |
| -30 | -29.00 | -31.00 |  |  | 0.19 |
| -40 | -39.00 | -41.00 |  |  | 0.19 |
| -50 | -49.00 | -51.00 |  |  | 0.24 |
| -60 | -59.00 | -61.00 |  |  | 0.24 |
| -70 | -69.00 | -71.00 |  |  | 0.24 |
| -80 | -79.00 | -81.00 |  |  | 0.24 |
| -90 | -89.00 | -91.00 |  |  | 0.24 |
| -100 | -99.00 | -101.00 |  |  | 0.24 |
| -110 | -109.00 | -111.00 |  |  | 0.25 |
| -120 | -119.00 | -121.00 |  |  | 0.25 |

### 9. f=2024.2MHz (TD-SCDMA)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level(dBm) | Limit(dBm) | | IN/OUT Measured Value(dBm) | OUT Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| Upper | Lower |
| -10 | -9.00 | -11.00 |  |  | 0.19 |
| -20 | -19.00 | -21.00 |  |  | 0.19 |
| -30 | -29.00 | -31.00 |  |  | 0.19 |
| -40 | -39.00 | -41.00 |  |  | 0.19 |
| -50 | -49.00 | -51.00 |  |  | 0.24 |
| -60 | -59.00 | -61.00 |  |  | 0.24 |
| -70 | -69.00 | -71.00 |  |  | 0.24 |
| -80 | -79.00 | -81.00 |  |  | 0.24 |
| -90 | -89.00 | -91.00 |  |  | 0.24 |
| -100 | -99.00 | -101.00 |  |  | 0.24 |
| -110 | -109.00 | -111.00 |  |  | 0.25 |
| -120 | -119.00 | -121.00 |  |  | 0.25 |

### 10. f=1400MHz (LTE)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level(dBm) | Limit(dBm) | | IN/OUT Measured Value(dBm) | OUT Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| Upper | Lower |
| -10 | -9.00 | -11.00 |  |  | 0.19 |
| -20 | -19.00 | -21.00 |  |  | 0.19 |
| -30 | -29.00 | -31.00 |  |  | 0.19 |
| -40 | -39.00 | -41.00 |  |  | 0.19 |
| -50 | -49.00 | -51.00 |  |  | 0.24 |
| -60 | -59.00 | -61.00 |  |  | 0.24 |
| -70 | -69.00 | -71.00 |  |  | 0.24 |
| -80 | -79.00 | -81.00 |  |  | 0.24 |
| -90 | -89.00 | -91.00 |  |  | 0.24 |
| -100 | -99.00 | -101.00 |  |  | 0.24 |
| -110 | -109.00 | -111.00 |  |  | 0.25 |
| -120 | -119.00 | -121.00 |  |  | 0.25 |

11. f=1900MHz (LTE)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level(dBm) | Limit(dBm) | | IN/OUT Measured Value(dBm) | OUT Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| Upper | Lower |
| -10 | -9.00 | -11.00 |  |  | 0.19 |
| -20 | -19.00 | -21.00 |  |  | 0.19 |
| -30 | -29.00 | -31.00 |  |  | 0.19 |
| -40 | -39.00 | -41.00 |  |  | 0.19 |
| -50 | -49.00 | -51.00 |  |  | 0.24 |
| -60 | -59.00 | -61.00 |  |  | 0.24 |
| -70 | -69.00 | -71.00 |  |  | 0.24 |
| -80 | -79.00 | -81.00 |  |  | 0.24 |
| -90 | -89.00 | -91.00 |  |  | 0.24 |
| -100 | -99.00 | -101.00 |  |  | 0.24 |
| -110 | -109.00 | -111.00 |  |  | 0.25 |
| -120 | -119.00 | -121.00 |  |  | 0.25 |

### 12. f=2150MHz (LTE)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level(dBm) | Limit(dBm) | | IN/OUT Measured Value(dBm) | OUT Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| Upper | Lower |
| -10 | -9.00 | -11.00 |  |  | 0.19 |
| -20 | -19.00 | -21.00 |  |  | 0.19 |
| -30 | -29.00 | -31.00 |  |  | 0.19 |
| -40 | -39.00 | -41.00 |  |  | 0.19 |
| -50 | -49.00 | -51.00 |  |  | 0.24 |
| -60 | -59.00 | -61.00 |  |  | 0.24 |
| -70 | -69.00 | -71.00 |  |  | 0.24 |
| -80 | -79.00 | -81.00 |  |  | 0.24 |
| -90 | -89.00 | -91.00 |  |  | 0.24 |
| -100 | -99.00 | -101.00 |  |  | 0.24 |
| -110 | -109.00 | -111.00 |  |  | 0.25 |
| -120 | -119.00 | -121.00 |  |  | 0.25 |

13. f=2350MHz (LTE)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level(dBm) | Limit(dBm) | | IN/OUT Measured Value(dBm) | OUT Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| Upper | Lower |
| -10 | -9.00 | -11.00 |  |  | 0.19 |
| -20 | -19.00 | -21.00 |  |  | 0.19 |
| -30 | -29.00 | -31.00 |  |  | 0.19 |
| -40 | -39.00 | -41.00 |  |  | 0.19 |
| -50 | -49.00 | -51.00 |  |  | 0.24 |
| -60 | -59.00 | -61.00 |  |  | 0.24 |
| -70 | -69.00 | -71.00 |  |  | 0.24 |
| -80 | -79.00 | -81.00 |  |  | 0.24 |
| -90 | -89.00 | -91.00 |  |  | 0.24 |
| -100 | -99.00 | -101.00 |  |  | 0.24 |
| -110 | -109.00 | -111.00 |  |  | 0.25 |
| -120 | -119.00 | -121.00 |  |  | 0.25 |

### 14. f=2610MHz (LTE)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level(dBm) | Limit(dBm) | | IN/OUT Measured Value(dBm) | OUT Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| Upper | Lower |
| -10 | -9.00 | -11.00 |  |  | 0.19 |
| -20 | -19.00 | -21.00 |  |  | 0.19 |
| -30 | -29.00 | -31.00 |  |  | 0.19 |
| -40 | -39.00 | -41.00 |  |  | 0.19 |
| -50 | -49.00 | -51.00 |  |  | 0.24 |
| -60 | -59.00 | -61.00 |  |  | 0.24 |
| -70 | -69.00 | -71.00 |  |  | 0.24 |
| -80 | -79.00 | -81.00 |  |  | 0.24 |
| -90 | -89.00 | -91.00 |  |  | 0.24 |
| -100 | -99.00 | -101.00 |  |  | 0.24 |
| -110 | -109.00 | -111.00 |  |  | 0.25 |
| -120 | -119.00 | -121.00 |  |  | 0.25 |

15 f=2650MHz (LTE)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level(dBm) | Limit(dBm) | | IN/OUT Measured Value(dBm) | OUT Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| Upper | Lower |
| -10 | -9.00 | -11.00 |  |  | 0.19 |
| -20 | -19.00 | -21.00 |  |  | 0.19 |
| -30 | -29.00 | -31.00 |  |  | 0.19 |
| -40 | -39.00 | -41.00 |  |  | 0.19 |
| -50 | -49.00 | -51.00 |  |  | 0.24 |
| -60 | -59.00 | -61.00 |  |  | 0.24 |
| -70 | -69.00 | -71.00 |  |  | 0.24 |
| -80 | -79.00 | -81.00 |  |  | 0.24 |
| -90 | -89.00 | -91.00 |  |  | 0.24 |
| -100 | -99.00 | -101.00 |  |  | 0.24 |
| -110 | -109.00 | -111.00 |  |  | 0.25 |
| -120 | -119.00 | -121.00 |  |  | 0.25 |

## RF signal generator output level (RF2) (continued)

### 1. f=935.2MHz (GSM)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level(dBm) | Limit(dBm) | | IN/OUT Measured Value(dBm) | OUT Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| Upper | Lower |
| -10 | -9.00 | -11.00 |  |  | 0.19 |
| -20 | -19.00 | -21.00 |  |  | 0.19 |
| -30 | -29.00 | -31.00 |  |  | 0.19 |
| -40 | -39.00 | -41.00 |  |  | 0.19 |
| -50 | -49.00 | -51.00 |  |  | 0.24 |
| -60 | -59.00 | -61.00 |  |  | 0.24 |
| -70 | -69.00 | -71.00 |  |  | 0.24 |
| -80 | -79.00 | -81.00 |  |  | 0.24 |
| -90 | -89.00 | -91.00 |  |  | 0.24 |
| -100 | -99.00 | -101.00 |  |  | 0.24 |
| -110 | -109.00 | -111.00 |  |  | 0.25 |
| -120 | -119.00 | -121.00 |  |  | 0.25 |

2. f=959.8MHz (GSM)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level(dBm) | Limit(dBm) | | IN/OUT Measured Value(dBm) | OUT Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| Upper | Lower |
| -10 | -9.00 | -11.00 |  |  | 0.19 |
| -20 | -19.00 | -21.00 |  |  | 0.19 |
| -30 | -29.00 | -31.00 |  |  | 0.19 |
| -40 | -39.00 | -41.00 |  |  | 0.19 |
| -50 | -49.00 | -51.00 |  |  | 0.24 |
| -60 | -59.00 | -61.00 |  |  | 0.24 |
| -70 | -69.00 | -71.00 |  |  | 0.24 |
| -80 | -79.00 | -81.00 |  |  | 0.24 |
| -90 | -89.00 | -91.00 |  |  | 0.24 |
| -100 | -99.00 | -101.00 |  |  | 0.24 |
| -110 | -109.00 | -111.00 |  |  | 0.25 |
| -120 | -119.00 | -121.00 |  |  | 0.25 |

### 3. f=1805.2MHz (GSM)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level(dBm) | Limit(dBm) | | IN/OUT Measured Value(dBm) | OUT Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| Upper | Lower |
| -10 | -9.00 | -11.00 |  |  | 0.19 |
| -20 | -19.00 | -21.00 |  |  | 0.19 |
| -30 | -29.00 | -31.00 |  |  | 0.19 |
| -40 | -39.00 | -41.00 |  |  | 0.19 |
| -50 | -49.00 | -51.00 |  |  | 0.24 |
| -60 | -59.00 | -61.00 |  |  | 0.24 |
| -70 | -69.00 | -71.00 |  |  | 0.24 |
| -80 | -79.00 | -81.00 |  |  | 0.24 |
| -90 | -89.00 | -91.00 |  |  | 0.24 |
| -100 | -99.00 | -101.00 |  |  | 0.24 |
| -110 | -109.00 | -111.00 |  |  | 0.25 |
| -120 | -119.00 | -121.00 |  |  | 0.25 |

4. f=1879.8MHz (GSM)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level(dBm) | Limit(dBm) | | IN/OUT Measured Value(dBm) | OUT Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| Upper | Lower |
| -10 | -9.00 | -11.00 |  |  | 0.19 |
| -20 | -19.00 | -21.00 |  |  | 0.19 |
| -30 | -29.00 | -31.00 |  |  | 0.19 |
| -40 | -39.00 | -41.00 |  |  | 0.19 |
| -50 | -49.00 | -51.00 |  |  | 0.24 |
| -60 | -59.00 | -61.00 |  |  | 0.24 |
| -70 | -69.00 | -71.00 |  |  | 0.24 |
| -80 | -79.00 | -81.00 |  |  | 0.24 |
| -90 | -89.00 | -91.00 |  |  | 0.24 |
| -100 | -99.00 | -101.00 |  |  | 0.24 |
| -110 | -109.00 | -111.00 |  |  | 0.25 |
| -120 | -119.00 | -121.00 |  |  | 0.25 |

### 5. f=1930.2MHz (GSM)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level(dBm) | Limit(dBm) | | IN/OUT Measured Value(dBm) | OUT Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| Upper | Lower |
| -10 | -9.00 | -11.00 |  |  | 0.19 |
| -20 | -19.00 | -21.00 |  |  | 0.19 |
| -30 | -29.00 | -31.00 |  |  | 0.19 |
| -40 | -39.00 | -41.00 |  |  | 0.19 |
| -50 | -49.00 | -51.00 |  |  | 0.24 |
| -60 | -59.00 | -61.00 |  |  | 0.24 |
| -70 | -69.00 | -71.00 |  |  | 0.24 |
| -80 | -79.00 | -81.00 |  |  | 0.24 |
| -90 | -89.00 | -91.00 |  |  | 0.24 |
| -100 | -99.00 | -101.00 |  |  | 0.24 |
| -110 | -109.00 | -111.00 |  |  | 0.25 |
| -120 | -119.00 | -121.00 |  |  | 0.25 |

6. f=1989.8MHz (GSM)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level(dBm) | Limit(dBm) | | IN/OUT Measured Value(dBm) | OUT Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| Upper | Lower |
| -10 | -9.00 | -11.00 |  |  | 0.19 |
| -20 | -19.00 | -21.00 |  |  | 0.19 |
| -30 | -29.00 | -31.00 |  |  | 0.19 |
| -40 | -39.00 | -41.00 |  |  | 0.19 |
| -50 | -49.00 | -51.00 |  |  | 0.24 |
| -60 | -59.00 | -61.00 |  |  | 0.24 |
| -70 | -69.00 | -71.00 |  |  | 0.24 |
| -80 | -79.00 | -81.00 |  |  | 0.24 |
| -90 | -89.00 | -91.00 |  |  | 0.24 |
| -100 | -99.00 | -101.00 |  |  | 0.24 |
| -110 | -109.00 | -111.00 |  |  | 0.25 |
| -120 | -119.00 | -121.00 |  |  | 0.25 |

### 7. f=530MHz (TD-SCDMA)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level(dBm) | Limit(dBm) | | IN/OUT Measured Value(dBm) | OUT Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| Upper | Lower |
| -10 | -9.00 | -11.00 |  |  | 0.19 |
| -20 | -19.00 | -21.00 |  |  | 0.19 |
| -30 | -29.00 | -31.00 |  |  | 0.19 |
| -40 | -39.00 | -41.00 |  |  | 0.19 |
| -50 | -49.00 | -51.00 |  |  | 0.24 |
| -60 | -59.00 | -61.00 |  |  | 0.24 |
| -70 | -69.00 | -71.00 |  |  | 0.24 |
| -80 | -79.00 | -81.00 |  |  | 0.24 |
| -90 | -89.00 | -91.00 |  |  | 0.24 |
| -100 | -99.00 | -101.00 |  |  | 0.24 |
| -110 | -109.00 | -111.00 |  |  | 0.25 |
| -120 | -119.00 | -121.00 |  |  | 0.25 |

8. f=2010.8MHz (TD-SCDMA)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level(dBm) | Limit(dBm) | | IN/OUT Measured Value(dBm) | OUT Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| Upper | Lower |
| -10 | -9.00 | -11.00 |  |  | 0.19 |
| -20 | -19.00 | -21.00 |  |  | 0.19 |
| -30 | -29.00 | -31.00 |  |  | 0.19 |
| -40 | -39.00 | -41.00 |  |  | 0.19 |
| -50 | -49.00 | -51.00 |  |  | 0.24 |
| -60 | -59.00 | -61.00 |  |  | 0.24 |
| -70 | -69.00 | -71.00 |  |  | 0.24 |
| -80 | -79.00 | -81.00 |  |  | 0.24 |
| -90 | -89.00 | -91.00 |  |  | 0.24 |
| -100 | -99.00 | -101.00 |  |  | 0.24 |
| -110 | -109.00 | -111.00 |  |  | 0.25 |
| -120 | -119.00 | -121.00 |  |  | 0.25 |

### 9. f=2024.2MHz (TD-SCDMA)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level(dBm) | Limit(dBm) | | IN/OUT Measured Value(dBm) | OUT Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| Upper | Lower |
| -10 | -9.00 | -11.00 |  |  | 0.19 |
| -20 | -19.00 | -21.00 |  |  | 0.19 |
| -30 | -29.00 | -31.00 |  |  | 0.19 |
| -40 | -39.00 | -41.00 |  |  | 0.19 |
| -50 | -49.00 | -51.00 |  |  | 0.24 |
| -60 | -59.00 | -61.00 |  |  | 0.24 |
| -70 | -69.00 | -71.00 |  |  | 0.24 |
| -80 | -79.00 | -81.00 |  |  | 0.24 |
| -90 | -89.00 | -91.00 |  |  | 0.24 |
| -100 | -99.00 | -101.00 |  |  | 0.24 |
| -110 | -109.00 | -111.00 |  |  | 0.25 |
| -120 | -119.00 | -121.00 |  |  | 0.25 |

10. f=1400MHz (LTE)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level(dBm) | Limit(dBm) | | IN/OUT Measured Value(dBm) | OUT Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| Upper | Lower |
| -10 | -9.00 | -11.00 |  |  | 0.19 |
| -20 | -19.00 | -21.00 |  |  | 0.19 |
| -30 | -29.00 | -31.00 |  |  | 0.19 |
| -40 | -39.00 | -41.00 |  |  | 0.19 |
| -50 | -49.00 | -51.00 |  |  | 0.24 |
| -60 | -59.00 | -61.00 |  |  | 0.24 |
| -70 | -69.00 | -71.00 |  |  | 0.24 |
| -80 | -79.00 | -81.00 |  |  | 0.24 |
| -90 | -89.00 | -91.00 |  |  | 0.24 |
| -100 | -99.00 | -101.00 |  |  | 0.24 |
| -110 | -109.00 | -111.00 |  |  | 0.25 |
| -120 | -119.00 | -121.00 |  |  | 0.25 |

### 11. f=1900MHz (LTE)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level(dBm) | Limit(dBm) | | IN/OUT Measured Value(dBm) | OUT Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| Upper | Lower |
| -10 | -9.00 | -11.00 |  |  | 0.19 |
| -20 | -19.00 | -21.00 |  |  | 0.19 |
| -30 | -29.00 | -31.00 |  |  | 0.19 |
| -40 | -39.00 | -41.00 |  |  | 0.19 |
| -50 | -49.00 | -51.00 |  |  | 0.24 |
| -60 | -59.00 | -61.00 |  |  | 0.24 |
| -70 | -69.00 | -71.00 |  |  | 0.24 |
| -80 | -79.00 | -81.00 |  |  | 0.24 |
| -90 | -89.00 | -91.00 |  |  | 0.24 |
| -100 | -99.00 | -101.00 |  |  | 0.24 |
| -110 | -109.00 | -111.00 |  |  | 0.25 |
| -120 | -119.00 | -121.00 |  |  | 0.25 |

12. f=2150MHz (LTE)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level(dBm) | Limit(dBm) | | IN/OUT Measured Value(dBm) | OUT Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| Upper | Lower |
| -10 | -9.00 | -11.00 |  |  | 0.19 |
| -20 | -19.00 | -21.00 |  |  | 0.19 |
| -30 | -29.00 | -31.00 |  |  | 0.19 |
| -40 | -39.00 | -41.00 |  |  | 0.19 |
| -50 | -49.00 | -51.00 |  |  | 0.24 |
| -60 | -59.00 | -61.00 |  |  | 0.24 |
| -70 | -69.00 | -71.00 |  |  | 0.24 |
| -80 | -79.00 | -81.00 |  |  | 0.24 |
| -90 | -89.00 | -91.00 |  |  | 0.24 |
| -100 | -99.00 | -101.00 |  |  | 0.24 |
| -110 | -109.00 | -111.00 |  |  | 0.25 |
| -120 | -119.00 | -121.00 |  |  | 0.25 |

### 13. f=2350MHz (LTE)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level(dBm) | Limit(dBm) | | IN/OUT Measured Value(dBm) | OUT Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| Upper | Lower |
| -10 | -9.00 | -11.00 |  |  | 0.19 |
| -20 | -19.00 | -21.00 |  |  | 0.19 |
| -30 | -29.00 | -31.00 |  |  | 0.19 |
| -40 | -39.00 | -41.00 |  |  | 0.19 |
| -50 | -49.00 | -51.00 |  |  | 0.24 |
| -60 | -59.00 | -61.00 |  |  | 0.24 |
| -70 | -69.00 | -71.00 |  |  | 0.24 |
| -80 | -79.00 | -81.00 |  |  | 0.24 |
| -90 | -89.00 | -91.00 |  |  | 0.24 |
| -100 | -99.00 | -101.00 |  |  | 0.24 |
| -110 | -109.00 | -111.00 |  |  | 0.25 |
| -120 | -119.00 | -121.00 |  |  | 0.25 |

14. f=2610MHz (LTE)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level(dBm) | Limit(dBm) | | IN/OUT Measured Value(dBm) | OUT Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| Upper | Lower |
| -10 | -9.00 | -11.00 |  |  | 0.19 |
| -20 | -19.00 | -21.00 |  |  | 0.19 |
| -30 | -29.00 | -31.00 |  |  | 0.19 |
| -40 | -39.00 | -41.00 |  |  | 0.19 |
| -50 | -49.00 | -51.00 |  |  | 0.24 |
| -60 | -59.00 | -61.00 |  |  | 0.24 |
| -70 | -69.00 | -71.00 |  |  | 0.24 |
| -80 | -79.00 | -81.00 |  |  | 0.24 |
| -90 | -89.00 | -91.00 |  |  | 0.24 |
| -100 | -99.00 | -101.00 |  |  | 0.24 |
| -110 | -109.00 | -111.00 |  |  | 0.25 |
| -120 | -119.00 | -121.00 |  |  | 0.25 |

### 15. f=2650MHz (LTE)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level(dBm) | Limit(dBm) | | IN/OUT Measured Value(dBm) | OUT Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| Upper | Lower |
| -10 | -9.00 | -11.00 |  |  | 0.19 |
| -20 | -19.00 | -21.00 |  |  | 0.19 |
| -30 | -29.00 | -31.00 |  |  | 0.19 |
| -40 | -39.00 | -41.00 |  |  | 0.19 |
| -50 | -49.00 | -51.00 |  |  | 0.24 |
| -60 | -59.00 | -61.00 |  |  | 0.24 |
| -70 | -69.00 | -71.00 |  |  | 0.24 |
| -80 | -79.00 | -81.00 |  |  | 0.24 |
| -90 | -89.00 | -91.00 |  |  | 0.24 |
| -100 | -99.00 | -101.00 |  |  | 0.24 |
| -110 | -109.00 | -111.00 |  |  | 0.25 |
| -120 | -119.00 | -121.00 |  |  | 0.25 |

## 4. RF signal generator harmonic distortion

### 1. RF1 IN/OUT

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Frequency (MHz) | Second Harmonic Measured Value(dBc) | Third Harmonic Measured Value(dBc) | Half Harmonic Measured Value(dBc) | The uncertainty of measurement results  (dB)(*k* = 2) |
| 935.2 |  |  |  | 2.2 |
| 959.8 |  |  |  | 2.2 |
| 1805.2 |  |  |  | 2.2 |
| 1879.8 |  |  |  | 2.2 |
| 1930.2 |  |  |  | 2.2 |
| 1989.8 |  |  |  | 2.2 |
| 530 |  |  |  | 2.2 |
| 2010.8 |  |  |  | 2.2 |
| 2024.2 |  |  |  | 2.2 |
| 1400 |  |  |  | 2.2 |
| 1900 |  |  |  | 2.2 |
| 2150 |  |  |  | 2.2 |
| 2350 |  |  |  | 2.2 |
| 2610 |  |  |  | 2.2 |
| 2650 |  |  |  | 2.2 |

RF signal generator harmonic distortion (continued)

### 2. RF1 OUT

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Frequency (MHz) | Second Harmonic Measured Value(dBc) | Third Harmonic Measured Value(dBc) | Half Harmonic Measured Value(dBc) | The uncertainty of measurement results  (dB)(*k* = 2) |
| 935.2 |  |  |  | 2.2 |
| 959.8 |  |  |  | 2.2 |
| 1805.2 |  |  |  | 2.2 |
| 1879.8 |  |  |  | 2.2 |
| 1930.2 |  |  |  | 2.2 |
| 1989.8 |  |  |  | 2.2 |
| 530 |  |  |  | 2.2 |
| 2010.8 |  |  |  | 2.2 |
| 2024.2 |  |  |  | 2.2 |
| 1400 |  |  |  | 2.2 |
| 1900 |  |  |  | 2.2 |
| 2150 |  |  |  | 2.2 |
| 2350 |  |  |  | 2.2 |
| 2610 |  |  |  | 2.2 |
| 2650 |  |  |  | 2.2 |

RF signal generator harmonic distortion (continued)

### 3. RF2 IN/OUT

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Frequency (MHz) | Second Harmonic Measured Value(dBc) | Third Harmonic Measured Value(dBc) | Half Harmonic Measured Value(dBc) | The uncertainty of measurement results  (dB)(*k* = 2) |
| 935.2 |  |  |  | 2.2 |
| 959.8 |  |  |  | 2.2 |
| 1805.2 |  |  |  | 2.2 |
| 1879.8 |  |  |  | 2.2 |
| 1930.2 |  |  |  | 2.2 |
| 1989.8 |  |  |  | 2.2 |
| 530 |  |  |  | 2.2 |
| 2010.8 |  |  |  | 2.2 |
| 2024.2 |  |  |  | 2.2 |
| 1400 |  |  |  | 2.2 |
| 1900 |  |  |  | 2.2 |
| 2150 |  |  |  | 2.2 |
| 2350 |  |  |  | 2.2 |
| 2610 |  |  |  | 2.2 |
| 2650 |  |  |  | 2.2 |

RF signal generator harmonic distortion (continued)

### 4. RF2 OUT

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Frequency (MHz) | Second Harmonic Measured Value(dBc) | Third Harmonic Measured Value(dBc) | Half Harmonic Measured Value(dBc) | The uncertainty of measurement results  (dB)(*k* = 2) |
| 935.2 |  |  |  | 2.2 |
| 959.8 |  |  |  | 2.2 |
| 1805.2 |  |  |  | 2.2 |
| 1879.8 |  |  |  | 2.2 |
| 1930.2 |  |  |  | 2.2 |
| 1989.8 |  |  |  | 2.2 |
| 530 |  |  |  | 2.2 |
| 2010.8 |  |  |  | 2.2 |
| 2024.2 |  |  |  | 2.2 |
| 1400 |  |  |  | 2.2 |
| 1900 |  |  |  | 2.2 |
| 2150 |  |  |  | 2.2 |
| 2350 |  |  |  | 2.2 |
| 2610 |  |  |  | 2.2 |
| 2650 |  |  |  | 2.2 |

## 5. LTE signal generator digital modulation

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Frequency  (MHz) | Item | Limit | RF1 IN/OUT  Measured Value | RF2 IN/OUT  Measured Value | RF1 OUT  Measured Value | RF2 OUT  Measured Value |
| 2610 | EVM(%) | <1.5 |  |  |  |  |
| Frequency Error(Hz) | <261 |  |  |  |  |
| IQ Offset(dB) | <-25 |  |  |  |  |

The uncertainty of measurement results (*k* = 2):

EVM: *U* =0.58%

Frequency Error *U* =5.9Hz

IQ Offset): *U* =0.50dB

## 6. LTE Occupied bandwidth

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Frequency(MHz) | Limit | RF1 IN/OUT  Measured Value(MHz) | RF2 IN/OUT  Measured Value(MHz) | RF1 OUT  Measured Value(MHz) | RF2 OUT  Measured Value(MHz) |
| 2610 | <20MHz |  |  |  |  |

The uncertainty of measurement results(*k* = 2): *U* = 0.016MHz

## 7. LTE signal generator ACPR

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Frequency(MHz) | Offset(MHz) | Limit(dB) | RF1 IN/OUT  Measured Value(dB) | RF2 IN/OUT  Measured Value(dB) | RF1 OUT  Measured Value(dB) | RF2 OUT  Measured Value(dB) |
| 2610 | -20 | ≤-40 |  |  |  |  |
| +20 | ≤-40 |  |  |  |  |

The uncertainty of measurement results (*k* = 2): *U* =0.92dB

## 8. TD-SCDMA signal generator digital modulation

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Frequency  (MHz) | Item | RF1 IN/OUT  Measured Value | RF2 IN/OUT  Measured Value | RF1 OUT  Measured Value | RF2 OUT  Measured Value |
| 2010.8 | Rho |  |  |  |  |
| RMS EVM(%) |  |  |  |  |
| Peak EVM(%) |  |  |  |  |
| RMS Phase Error(degree) |  |  |  |  |
| Frequency Error(Hz) |  |  |  |  |
| 2017.4 | Rho |  |  |  |  |
| RMS EVM(%) |  |  |  |  |
| Peak EVM(%) |  |  |  |  |
| RMS Phase Error(degree) |  |  |  |  |
| Frequency Error(Hz) |  |  |  |  |
| 2024.2 | Rho |  |  |  |  |
| RMS EVM(%) |  |  |  |  |
| Peak EVM(%) |  |  |  |  |
| RMS Phase Error(degree) |  |  |  |  |
| Frequency Error(Hz) |  |  |  |  |

The uncertainty of measurement results (*k* = 2):

Rho: *U* =0.0011

EVM: *U* =0.58%

Phase Error: *U* =0.70degree

Frequency Error *U* =3.0Hz

## 9. TD-SCDMA Occupied bandwidth

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Frequency(MHz) | RF1 IN/OUT  Measured Value(MHz) | RF2 IN/OUT  Measured Value(MHz) | RF1 OUT  Measured Value(MHz) | RF2 OUT  Measured Value(MHz) |
| 2010.8 |  |  |  |  |
| 2017.4 |  |  |  |  |
| 2024.2 |  |  |  |  |

The uncertainty of measurement results(*k* = 2): *U* = 0.016MHz

## 10. TD-SCDMA signal generator ACPR

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Frequency(MHz) | Offset(MHz) | Limit(dB) | RF1 IN/OUT  Measured Value(dB) | RF2 IN/OUT  Measured Value(dB) | RF1 OUT  Measured Value(dB) | RF2 OUT  Measured Value(dB) |
| 2010.8 | +1.6 | ≤-33 |  |  |  |  |
| -1.6 | ≤-33 |  |  |  |  |
| +3.2 | ≤-43 |  |  |  |  |
| -3.2 | ≤-43 |  |  |  |  |
| 2017.4 | +1.6 | ≤-33 |  |  |  |  |
| -1.6 | ≤-33 |  |  |  |  |
| +3.2 | ≤-43 |  |  |  |  |
| -3.2 | ≤-43 |  |  |  |  |
| 2024.2 | +1.6 | ≤-33 |  |  |  |  |
| -1.6 | ≤-33 |  |  |  |  |
| +3.2 | ≤-43 |  |  |  |  |
| -3.2 | ≤-43 |  |  |  |  |

The uncertainty of measurement results (*k* = 2): *U* =0.50dB

## 11. TD-SCDMA signal generator Code Domain Power(TS0)

### 1. RF1 IN/OUT

|  |  |  |  |
| --- | --- | --- | --- |
| Frequency(MHz) | Limit(dB) | Measured Value (dB) | Code Channel |
| 2010.8 | ≤-21 |  |  |
| 2017.4 | ≤-21 |  |  |
| 2024.2 | ≤-21 |  |  |

The uncertainty of measurement results (*k* = 2): *U* =0.50dB

### 2. RF1 OUT

|  |  |  |  |
| --- | --- | --- | --- |
| Frequency(MHz) | Limit(dB) | RF1 IN/OUT  Measured Value (dB) | Code Channel |
| 2010.8 | ≤-21 |  |  |
| 2017.4 | ≤-21 |  |  |
| 2024.2 | ≤-21 |  |  |

The uncertainty of measurement results (*k* = 2): *U* =0.50dB

### 3. RF2 IN/OUT

|  |  |  |  |
| --- | --- | --- | --- |
| Frequency(MHz) | Limit(dB) | RF1 IN/OUT  Measured Value (dB) | Code Channel |
| 2010.8 | ≤-21 |  |  |
| 2017.4 | ≤-21 |  |  |
| 2024.2 | ≤-21 |  |  |

The uncertainty of measurement results (*k* = 2): *U* =0.50dB

### 4. RF2 OUT

|  |  |  |  |
| --- | --- | --- | --- |
| Frequency(MHz) | Limit(dB) | RF1 IN/OUT  Measured Value (dB) | Code Channel |
| 2010.8 | ≤-21 |  |  |
| 2017.4 | ≤-21 |  |  |
| 2024.2 | ≤-21 |  |  |

The uncertainty of measurement results (*k* = 2): *U* =0.50dB

## 12. RF analyzer power

### 1. f=890.2MHz (GSM)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level (dBm) | Lower Limit (dBm) | Upper Limit (dBm) | RF1 Measured Value(dBm) | RF2 Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| 33.0 | 32.5 | 33.5 |  |  | 0.17 |
| 25.0 | 24.5 | 25.5 |  |  | 0.17 |
| 15.0 | 14.5 | 15.5 |  |  | 0.17 |
| 5.0 | 4.5 | 5.5 |  |  | 0.20 |
| -5.0 | -5.5 | -4.5 |  |  | 0.20 |
| -15.0 | -15.5 | -14.5 |  |  | 0.20 |
| -25.0 | -25.5 | -24.5 |  |  | 0.20 |
| -35.0 | -35.5 | -34.5 |  |  | 0.20 |
| -45.0 | -45.5 | -44.5 |  |  | 0.20 |
| -55.0 | -55.5 | -54.5 |  |  | 0.20 |
| -65.0 | -65.5 | -64.5 |  |  | 0.20 |

### 2. f=914.8MHz (GSM)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level (dBm) | Lower Limit (dBm) | Upper Limit (dBm) | RF1 Measured Value(dBm) | RF2 Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| 33.0 | 32.5 | 33.5 |  |  | 0.17 |
| 25.0 | 24.5 | 25.5 |  |  | 0.17 |
| 15.0 | 14.5 | 15.5 |  |  | 0.17 |
| 5.0 | 4.5 | 5.5 |  |  | 0.20 |
| -5.0 | -5.5 | -4.5 |  |  | 0.20 |
| -15.0 | -15.5 | -14.5 |  |  | 0.20 |
| -25.0 | -25.5 | -24.5 |  |  | 0.20 |
| -35.0 | -35.5 | -34.5 |  |  | 0.20 |
| -45.0 | -45.5 | -44.5 |  |  | 0.20 |
| -55.0 | -55.5 | -54.5 |  |  | 0.20 |
| -65.0 | -65.5 | -64.5 |  |  | 0.20 |

### 3. f=1710.2MHz (GSM)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level (dBm) | Lower Limit (dBm) | Upper Limit (dBm) | RF1 Measured Value(dBm) | RF2 Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| 33.0 | 32.5 | 33.5 |  |  | 0.17 |
| 25.0 | 24.5 | 25.5 |  |  | 0.17 |
| 15.0 | 14.5 | 15.5 |  |  | 0.17 |
| 5.0 | 4.5 | 5.5 |  |  | 0.20 |
| -5.0 | -5.5 | -4.5 |  |  | 0.20 |
| -15.0 | -15.5 | -14.5 |  |  | 0.20 |
| -25.0 | -25.5 | -24.5 |  |  | 0.20 |
| -35.0 | -35.5 | -34.5 |  |  | 0.20 |
| -45.0 | -45.5 | -44.5 |  |  | 0.20 |
| -55.0 | -55.5 | -54.5 |  |  | 0.20 |
| -65.0 | -65.5 | -64.5 |  |  | 0.20 |

### 4. f=1784.8MHz (GSM)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level (dBm) | Lower Limit (dBm) | Upper Limit (dBm) | RF1 Measured Value(dBm) | RF2 Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| 33.0 | 32.5 | 33.5 |  |  | 0.17 |
| 25.0 | 24.5 | 25.5 |  |  | 0.17 |
| 15.0 | 14.5 | 15.5 |  |  | 0.17 |
| 5.0 | 4.5 | 5.5 |  |  | 0.20 |
| -5.0 | -5.5 | -4.5 |  |  | 0.20 |
| -15.0 | -15.5 | -14.5 |  |  | 0.20 |
| -25.0 | -25.5 | -24.5 |  |  | 0.20 |
| -35.0 | -35.5 | -34.5 |  |  | 0.20 |
| -45.0 | -45.5 | -44.5 |  |  | 0.20 |
| -55.0 | -55.5 | -54.5 |  |  | 0.20 |
| -65.0 | -65.5 | -64.5 |  |  | 0.20 |

### 5. f=1850.2MHz (GSM)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level (dBm) | Lower Limit (dBm) | Upper Limit (dBm) | RF1 Measured Value(dBm) | RF2 Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| 33.0 | 32.5 | 33.5 |  |  | 0.17 |
| 25.0 | 24.5 | 25.5 |  |  | 0.17 |
| 15.0 | 14.5 | 15.5 |  |  | 0.17 |
| 5.0 | 4.5 | 5.5 |  |  | 0.20 |
| -5.0 | -5.5 | -4.5 |  |  | 0.20 |
| -15.0 | -15.5 | -14.5 |  |  | 0.20 |
| -25.0 | -25.5 | -24.5 |  |  | 0.20 |
| -35.0 | -35.5 | -34.5 |  |  | 0.20 |
| -45.0 | -45.5 | -44.5 |  |  | 0.20 |
| -55.0 | -55.5 | -54.5 |  |  | 0.20 |
| -65.0 | -65.5 | -64.5 |  |  | 0.20 |

### 6. f=1909.8MHz (GSM)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level (dBm) | Lower Limit (dBm) | Upper Limit (dBm) | RF1 Measured Value(dBm) | RF2 Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| 33.0 | 32.5 | 33.5 |  |  | 0.17 |
| 25.0 | 24.5 | 25.5 |  |  | 0.17 |
| 15.0 | 14.5 | 15.5 |  |  | 0.17 |
| 5.0 | 4.5 | 5.5 |  |  | 0.20 |
| -5.0 | -5.5 | -4.5 |  |  | 0.20 |
| -15.0 | -15.5 | -14.5 |  |  | 0.20 |
| -25.0 | -25.5 | -24.5 |  |  | 0.20 |
| -35.0 | -35.5 | -34.5 |  |  | 0.20 |
| -45.0 | -45.5 | -44.5 |  |  | 0.20 |
| -55.0 | -55.5 | -54.5 |  |  | 0.20 |
| -65.0 | -65.5 | -64.5 |  |  | 0.20 |

### 7. f=2010.8MHz (TD-SCDMA)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level (dBm) | Lower Limit (dBm) | Upper Limit (dBm) | RF1 Measured Value(dBm) | RF2 Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| 33.0 | 32.5 | 33.5 |  |  | 0.17 |
| 25.0 | 24.5 | 25.5 |  |  | 0.17 |
| 15.0 | 14.5 | 15.5 |  |  | 0.17 |
| 5.0 | 4.5 | 5.5 |  |  | 0.20 |
| -5.0 | -5.5 | -4.5 |  |  | 0.20 |
| -15.0 | -15.5 | -14.5 |  |  | 0.20 |
| -25.0 | -25.5 | -24.5 |  |  | 0.20 |
| -35.0 | -35.5 | -34.5 |  |  | 0.20 |
| -45.0 | -45.5 | -44.5 |  |  | 0.20 |
| -55.0 | -55.5 | -54.5 |  |  | 0.20 |
| -65.0 | -65.5 | -64.5 |  |  | 0.20 |

### 8. f=2017.4MHz (TD-SCDMA)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level (dBm) | Lower Limit (dBm) | Upper Limit (dBm) | RF1 Measured Value(dBm) | RF2 Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| 33.0 | 32.5 | 33.5 |  |  | 0.17 |
| 25.0 | 24.5 | 25.5 |  |  | 0.17 |
| 15.0 | 14.5 | 15.5 |  |  | 0.17 |
| 5.0 | 4.5 | 5.5 |  |  | 0.20 |
| -5.0 | -5.5 | -4.5 |  |  | 0.20 |
| -15.0 | -15.5 | -14.5 |  |  | 0.20 |
| -25.0 | -25.5 | -24.5 |  |  | 0.20 |
| -35.0 | -35.5 | -34.5 |  |  | 0.20 |
| -45.0 | -45.5 | -44.5 |  |  | 0.20 |
| -55.0 | -55.5 | -54.5 |  |  | 0.20 |
| -65.0 | -65.5 | -64.5 |  |  | 0.20 |

### 9. f=2024.2MHz (TD-SCDMA)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level (dBm) | Lower Limit (dBm) | Upper Limit (dBm) | RF1 Measured Value(dBm) | RF2 Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| 33.0 | 32.5 | 33.5 |  |  | 0.17 |
| 25.0 | 24.5 | 25.5 |  |  | 0.17 |
| 15.0 | 14.5 | 15.5 |  |  | 0.17 |
| 5.0 | 4.5 | 5.5 |  |  | 0.20 |
| -5.0 | -5.5 | -4.5 |  |  | 0.20 |
| -15.0 | -15.5 | -14.5 |  |  | 0.20 |
| -25.0 | -25.5 | -24.5 |  |  | 0.20 |
| -35.0 | -35.5 | -34.5 |  |  | 0.20 |
| -45.0 | -45.5 | -44.5 |  |  | 0.20 |
| -55.0 | -55.5 | -54.5 |  |  | 0.20 |
| -65.0 | -65.5 | -64.5 |  |  | 0.20 |

### 10. f=1400MHz(LTE)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level (dBm) | Lower Limit (dBm) | Upper Limit (dBm) | RF1 Measured Value(dBm) | RF2 Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| 33.0 | 32.5 | 33.5 |  |  | 0.17 |
| 25.0 | 24.5 | 25.5 |  |  | 0.17 |
| 15.0 | 14.5 | 15.5 |  |  | 0.17 |
| 5.0 | 4.5 | 5.5 |  |  | 0.20 |
| -5.0 | -5.5 | -4.5 |  |  | 0.20 |
| -15.0 | -15.5 | -14.5 |  |  | 0.20 |
| -25.0 | -25.5 | -24.5 |  |  | 0.20 |
| -35.0 | -35.5 | -34.5 |  |  | 0.20 |
| -45.0 | -45.5 | -44.5 |  |  | 0.20 |
| -55.0 | -55.5 | -54.5 |  |  | 0.20 |
| -65.0 | -65.5 | -64.5 |  |  | 0.20 |

### 11. f=1900MHz(LTE)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level (dBm) | Lower Limit (dBm) | Upper Limit (dBm) | RF1 Measured Value(dBm) | RF2 Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| 33.0 | 32.5 | 33.5 |  |  | 0.17 |
| 25.0 | 24.5 | 25.5 |  |  | 0.17 |
| 15.0 | 14.5 | 15.5 |  |  | 0.17 |
| 5.0 | 4.5 | 5.5 |  |  | 0.20 |
| -5.0 | -5.5 | -4.5 |  |  | 0.20 |
| -15.0 | -15.5 | -14.5 |  |  | 0.20 |
| -25.0 | -25.5 | -24.5 |  |  | 0.20 |
| -35.0 | -35.5 | -34.5 |  |  | 0.20 |
| -45.0 | -45.5 | -44.5 |  |  | 0.20 |
| -55.0 | -55.5 | -54.5 |  |  | 0.20 |
| -65.0 | -65.5 | -64.5 |  |  | 0.20 |

### 12. f=1960MHz(LTE)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level (dBm) | Lower Limit (dBm) | Upper Limit (dBm) | RF1 Measured Value(dBm) | RF2 Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| 33.0 | 32.5 | 33.5 |  |  | 0.17 |
| 25.0 | 24.5 | 25.5 |  |  | 0.17 |
| 15.0 | 14.5 | 15.5 |  |  | 0.17 |
| 5.0 | 4.5 | 5.5 |  |  | 0.20 |
| -5.0 | -5.5 | -4.5 |  |  | 0.20 |
| -15.0 | -15.5 | -14.5 |  |  | 0.20 |
| -25.0 | -25.5 | -24.5 |  |  | 0.20 |
| -35.0 | -35.5 | -34.5 |  |  | 0.20 |
| -45.0 | -45.5 | -44.5 |  |  | 0.20 |
| -55.0 | -55.5 | -54.5 |  |  | 0.20 |
| -65.0 | -65.5 | -64.5 |  |  | 0.20 |

### 13. f=2350MHz(LTE)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level (dBm) | Lower Limit (dBm) | Upper Limit (dBm) | RF1 Measured Value(dBm) | RF2 Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| 33.0 | 32.5 | 33.5 |  |  | 0.17 |
| 25.0 | 24.5 | 25.5 |  |  | 0.17 |
| 15.0 | 14.5 | 15.5 |  |  | 0.17 |
| 5.0 | 4.5 | 5.5 |  |  | 0.20 |
| -5.0 | -5.5 | -4.5 |  |  | 0.20 |
| -15.0 | -15.5 | -14.5 |  |  | 0.20 |
| -25.0 | -25.5 | -24.5 |  |  | 0.20 |
| -35.0 | -35.5 | -34.5 |  |  | 0.20 |
| -45.0 | -45.5 | -44.5 |  |  | 0.20 |
| -55.0 | -55.5 | -54.5 |  |  | 0.20 |
| -65.0 | -65.5 | -64.5 |  |  | 0.20 |

### 14. f=2530MHz(LTE)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level (dBm) | Lower Limit (dBm) | Upper Limit (dBm) | RF1 Measured Value(dBm) | RF2 Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| 33.0 | 32.5 | 33.5 |  |  | 0.17 |
| 25.0 | 24.5 | 25.5 |  |  | 0.17 |
| 15.0 | 14.5 | 15.5 |  |  | 0.17 |
| 5.0 | 4.5 | 5.5 |  |  | 0.20 |
| -5.0 | -5.5 | -4.5 |  |  | 0.20 |
| -15.0 | -15.5 | -14.5 |  |  | 0.20 |
| -25.0 | -25.5 | -24.5 |  |  | 0.20 |
| -35.0 | -35.5 | -34.5 |  |  | 0.20 |
| -45.0 | -45.5 | -44.5 |  |  | 0.20 |
| -55.0 | -55.5 | -54.5 |  |  | 0.20 |
| -65.0 | -65.5 | -64.5 |  |  | 0.20 |

### 15. f=2610MHz(LTE)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level (dBm) | Lower Limit (dBm) | Upper Limit (dBm) | RF1 Measured Value(dBm) | RF2 Measured Value(dBm) | The uncertainty of measurement results  (dB) (*k* = 2) |
| 33.0 | 32.5 | 33.5 |  |  | 0.17 |
| 25.0 | 24.5 | 25.5 |  |  | 0.17 |
| 15.0 | 14.5 | 15.5 |  |  | 0.17 |
| 5.0 | 4.5 | 5.5 |  |  | 0.20 |
| -5.0 | -5.5 | -4.5 |  |  | 0.20 |
| -15.0 | -15.5 | -14.5 |  |  | 0.20 |
| -25.0 | -25.5 | -24.5 |  |  | 0.20 |
| -35.0 | -35.5 | -34.5 |  |  | 0.20 |
| -45.0 | -45.5 | -44.5 |  |  | 0.20 |
| -55.0 | -55.5 | -54.5 |  |  | 0.20 |
| -65.0 | -65.5 | -64.5 |  |  | 0.20 |

## 13. VSWR

|  |  |  |  |
| --- | --- | --- | --- |
| Frequency(MHz) | Limit | RF1 IN/OUT Measured Value | RF2 IN/OUT Measured Value |
| 890.2 | <1.2 |  |  |
| 914.8 | <1.2 |  |  |
| 1710.2 | <1.2 |  |  |
| 1784.8 | <1.2 |  |  |
| 1850.2 | <1.2 |  |  |
| 1909.8 | <1.2 |  |  |
| 2010.8 | <1.2 |  |  |
| 2017.4 | <1.2 |  |  |
| 2024.2 | <1.2 |  |  |
| 1400 | <1.2 |  |  |
| 1900 | <1.2 |  |  |
| 1960 | <1.2 |  |  |
| 2350 | <1.2 |  |  |
| 2530 | <1.2 |  |  |
| 2610 | <1.2 |  |  |

The uncertainty of measurement results (*k* = 2): *U* =0.04

VSWR(continued)

|  |  |  |  |
| --- | --- | --- | --- |
| Frequency(MHz) | Limit | RF1 OUT Measured Value | RF2 OUT Measured Value |
| 890.2 | <1.3 |  |  |
| 914.8 | <1.3 |  |  |
| 1710.2 | <1.3 |  |  |
| 1784.8 | <1.3 |  |  |
| 1850.2 | <1.3 |  |  |
| 1909.8 | <1.3 |  |  |
| 2010.8 | <1.3 |  |  |
| 2017.4 | <1.3 |  |  |
| 2024.2 | <1.3 |  |  |
| 1400 | <1.3 |  |  |
| 1900 | <1.3 |  |  |
| 1960 | <1.3 |  |  |
| 2350 | <1.3 |  |  |
| 2530 | <1.3 |  |  |
| 2610 | <1.3 |  |  |

The uncertainty of measurement results (*k* = 2): *U* =0.04

## 14. System functions test

14.1 LTE System functions test

|  |  |
| --- | --- |
| **Test Item** | **Verdict** |
| Adjacent Channel Leakage Power Ratio | Passed |
| Aggregate Power Control Tolerance | Passed |
| Absolute Power Tolerance | Passed |
| UL&DL Throughput | Passed |
| Channel State Information | Passed |
| Frequency Error | Passed |
| Minimum Output Power | Passed |
| Occupied Bandwith | Passed |
| Performance Test | Passed |
| ON/OFF Time Mask | Passed |
| Relative Power Tolerance | Passed |
| Spectrum Emission Mask  Spectrum Monitor | Passed |
| Transmit Power{1，UE Maximum Output Power 2,Maximum Power Reduction 3，Configured UE Transmitted Output Power} | Passed |
| Transmit Signal Quality | Passed |
| UE Report | Passed |

14.2 TD-SCDMA System functions test

|  |  |
| --- | --- |
| **Test Item** | **Verdict** |
| ACLR | Passed |
| Bit Error Rate | Passed |
| Block Error Rate | Passed |
| Code Domain Power | Passed |
| Frequency Stability | Passed |
| OBW | Passed |
| Power Control | Passed |
| Power vs Time | Passed |
| Spectrum Emission Mask | Passed |
| Spectrum Monitor | Passed |
| Waveform Quality | Passed |

校准依据

|  |  |  |  |
| --- | --- | --- | --- |
| 序号 | 名称 | 编号 | 备注 |
| 1 | Calibration Specification for TD-SCDMA Digital Radio Communication Testers | JJF 1204-2008 |  |
| 2 | Calibration Specification of TDMA-GSM Digital Radio Communication Testers | JJF 1131-2005 |  |
| 3 | Calibration Specification of LTE Digital Radio Communication Testers | JJF 1443-2014 |  |

校准用仪器

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 序号 | 名称 | 型号规格 | 出厂编号 | 不确定度  或准确度 | 使用前  情况 | 使用后  情况 |
| 1 | 频率计 | MF76A | M78488 | ±5×10-8 | √ | √ |
| 2 | 频谱分析仪 | E4440A | US44302767 | 频响: ±0.15dB (3Hz~3GHz)  线性度:  ±0.07dB(Input mixer level ≤-20dBm)  ±0.13dB(Input mixer level ≤-10dBm) | √ | √ |
| 3 | 功率计 | E4417A | GB41291030 | 指示器读数：±0.12% | √ | √ |
| 4 | 功率传感器 | E4413A | MY41495532 | 校准因子：±（1.1%～1.3%）  线性度：±0.7% | √ | √ |
| 5 | 信号源 | E4433B | US37230472 | ±0.5dB(250kHz~2GHz), ±0.9dB(2GHz~4GHz) | √ | √ |
| 6 | 信号分析仪 | FSQ | 200108 | RMS EVM：  0.3 %(*k*=2)  频率误差：  0.6 Hz(*k*=2) | √ | √ |
| 7 | 网络分析仪 | E8363B | MY43030928 | 电压驻波比测量结果的不确定度：2.0% (*k*=2) | / | / |
| 备注 |  |  |  |  |  |  |

注：在上表中打“√”表示正常，若不正常，需说明具体原因，打“/”表示未使用。

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 温度 | °C | | | 相对湿度 | | % | | |
| 电源电压 | 220V | | | 测试日期 | | 年 月 日 | | |
| 校准地点 |  | | | | | | | |
|  | |  |  | |  | |  |  |
| 校准人（签名） | |  | 核验人（签名） | |  | |  |  |