



Sony Mobile Communications, Inc.

4-12-3 Higashi-shinagawa, Shinagawa-ku, Tokyo, 140-0002, Japan

Date: December 11, 2018

## Tune up Information

FCC ID: PY7-50241M

### Maximum Target Average Power for Production Unit

| Mode                         | GSM 850           |                    | GSM 1900          |                    |
|------------------------------|-------------------|--------------------|-------------------|--------------------|
|                              | Full Power Mode   | Reduced Power Mode | Full Power Mode   | Reduced Power Mode |
| GSM (GMSK, 1 Tx slot)        | 32.7dBm(+/-1dB)   | NA                 | 29.7dBm(+/-1dB)   | 27.7dBm(+/-1dB)    |
| GPRS/EDGE (GMSK, 1 Tx slot)  | 32.7dBm(+/-1dB)   | NA                 | 29.7dBm(+/-1dB)   | 27.7dBm(+/-1dB)    |
| GPRS/EDGE (GMSK, 2 Tx slots) | 31.7 dBm (+/-1dB) | NA                 | 28.7 dBm (+/-1dB) | 26.7dBm(+/-1dB)    |
| GPRS/EDGE (GMSK, 3 Tx slots) | 29.7 dBm (+/-1dB) | NA                 | 26.7dBm(+/-1dB)   | 24.7dBm(+/-1dB)    |
| GPRS/EDGE (GMSK, 4 Tx slots) | 28.7dBm(+/-1dB)   | NA                 | 25.7dBm(+/-1dB)   | 23.7dBm(+/-1dB)    |
| EDGE (8PSK, 1 Tx slot)       | 27.0 dBm (+/-1dB) | NA                 | 26 dBm (+/-1dB)   | NA                 |
| EDGE (8PSK, 2 Tx slots)      | 26.0 dBm (+/-1dB) | NA                 | 25 dBm (+/-1dB)   | NA                 |
| EDGE (8PSK, 3 Tx slots)      | 24.0 dBm (+/-1dB) | NA                 | 23 dBm (+/-1dB)   | NA                 |
| EDGE (8PSK, 4 Tx slots)      | 23.0 dBm (+/-1dB) | NA                 | 22 dBm (+/-1dB)   | NA                 |

Power unit: dBm

### Maximum Target Average Power for Production Unit

| Mode               | WCDMA Band V |            | WCDMA Band II |            |
|--------------------|--------------|------------|---------------|------------|
|                    | Full Power   | Reduced    | Full Power    | Reduced    |
|                    | Mode         | Power Mode | Mode          | Power Mode |
| AMR 12.2K          | 23           | NA         | 23            | 20         |
|                    | +/-1dB       |            | +/-1dB        | +/-1dB     |
| RMC 12.2K          | 23           | NA         | 23            | 20         |
|                    | +/-1dB       |            | +/-1dB        | +/-1dB     |
| HSDPA Subtest-1    | 22.0         | NA         | 22.0          | 19.0       |
|                    | +/-1dB       |            | +/-1dB        | +/-1dB     |
| HSDPA Subtest-2    | 22.0         | NA         | 22.0          | 19.0       |
|                    | +/-1dB       |            | +/-1dB        | +/-1dB     |
| HSDPA Subtest-3    | 21.5         | NA         | 21.5          | 18.5       |
|                    | +/-1dB       |            | +/-1dB        | +/-1dB     |
| HSDPA Subtest-4    | 21.5         | NA         | 21.5          | 18.5       |
|                    | +/-1dB       |            | +/-1dB        | +/-1dB     |
| DC-HSDPA Subtest-1 | 22.0         | NA         | 22.0          | 19.0       |
|                    | +/-1dB       |            | +/-1dB        | +/-1dB     |
| DC-HSDPA Subtest-2 | 22.0         | NA         | 22.0          | 19.0       |
|                    | +/-1dB       |            | +/-1dB        | +/-1dB     |
| DC-HSDPA Subtest-3 | 21.5         | NA         | 21.5          | 18.5       |

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|                    |        |    |        |        |
|--------------------|--------|----|--------|--------|
|                    | +/-1dB |    | +/-1dB | +/-1dB |
| DC-HSDPA Subtest-4 | 21.5   | NA | 21.5   | 18.5   |
|                    | +/-1dB |    | +/-1dB | +/-1dB |
| HSUPA Subtest-1    | 20     | NA | 20     | 17     |
|                    | +/-1dB |    | +/-1dB | +/-1dB |
| HSUPA Subtest-2    | 20     | NA | 20     | 17     |
|                    | +/-1dB |    | +/-1dB | +/-1dB |
| HSUPA Subtest-3    | 21     | NA | 21     | 18     |
|                    | +/-1dB |    | +/-1dB | +/-1dB |
| HSUPA Subtest-4    | 19.5   | NA | 19.5   | 16.5   |
|                    | +/-1dB |    | +/-1dB | +/-1dB |
| HSUPA Subtest-5    | 21     | NA | 21     | 18     |
|                    | +/-1dB |    | +/-1dB | +/-1dB |

Power unit: dBm

**Maximum Target Average Power for Production Unit**

| LTE Band II |          |         |                       |                 |                          |                    |
|-------------|----------|---------|-----------------------|-----------------|--------------------------|--------------------|
| Modulation  | BW (MHz) | RB size | Full Power mode (MPR) | Full Power mode | Reduced Power mode (MPR) | Reduced Power mode |
| QPSK        | 20       | ≤ 18    | 0                     | 23.7(+/-1dB)    | 0                        | 20.7(+/-1dB)       |
| QPSK        | 20       | > 18    | 1                     | 22.7(+/-1dB)    | 1                        | 19.7(+/-1dB)       |
| 16QAM       | 20       | ≤ 18    | 1                     | 22.7(+/-1dB)    | 1                        | 19.7(+/-1dB)       |
| 16QAM       | 20       | > 18    | 2                     | 21.7(+/-1dB)    | 2                        | 18.7(+/-1dB)       |
| QPSK        | 15       | ≤ 16    | 0                     | 23.7(+/-1dB)    | 0                        | 20.7(+/-1dB)       |
| QPSK        | 15       | > 16    | 1                     | 22.7(+/-1dB)    | 1                        | 19.7(+/-1dB)       |
| 16QAM       | 15       | ≤ 16    | 1                     | 22.7(+/-1dB)    | 1                        | 19.7(+/-1dB)       |
| 16QAM       | 15       | > 16    | 2                     | 21.7(+/-1dB)    | 2                        | 18.7(+/-1dB)       |
| QPSK        | 10       | ≤ 12    | 0                     | 23.7(+/-1dB)    | 0                        | 20.7(+/-1dB)       |
| QPSK        | 10       | > 12    | 1                     | 22.7(+/-1dB)    | 1                        | 19.7(+/-1dB)       |
| 16QAM       | 10       | ≤ 12    | 1                     | 22.7(+/-1dB)    | 1                        | 19.7(+/-1dB)       |
| 16QAM       | 10       | > 12    | 2                     | 21.7(+/-1dB)    | 2                        | 18.7(+/-1dB)       |
| QPSK        | 5        | ≤ 8     | 0                     | 23.7(+/-1dB)    | 0                        | 20.7(+/-1dB)       |
| QPSK        | 5        | > 8     | 1                     | 22.7(+/-1dB)    | 1                        | 19.7(+/-1dB)       |
| 16QAM       | 5        | ≤ 8     | 1                     | 22.7(+/-1dB)    | 1                        | 19.7(+/-1dB)       |
| 16QAM       | 5        | > 8     | 2                     | 21.7(+/-1dB)    | 2                        | 18.7(+/-1dB)       |
| QPSK        | 3        | ≤ 4     | 0                     | 23.7(+/-1dB)    | 0                        | 20.7(+/-1dB)       |
| QPSK        | 3        | > 4     | 1                     | 22.7(+/-1dB)    | 1                        | 19.7(+/-1dB)       |
| 16QAM       | 3        | ≤ 4     | 1                     | 22.7(+/-1dB)    | 1                        | 19.7(+/-1dB)       |
| 16QAM       | 3        | > 4     | 2                     | 21.7(+/-1dB)    | 2                        | 18.7(+/-1dB)       |
| QPSK        | 1.4      | ≤ 5     | 0                     | 23.7(+/-1dB)    | 0                        | 20.7(+/-1dB)       |
| QPSK        | 1.4      | > 5     | 1                     | 22.7(+/-1dB)    | 1                        | 19.7(+/-1dB)       |
| 16QAM       | 1.4      | ≤ 5     | 1                     | 22.7(+/-1dB)    | 1                        | 19.7(+/-1dB)       |
| 16QAM       | 1.4      | > 5     | 2                     | 21.7(+/-1dB)    | 2                        | 18.7(+/-1dB)       |

Power unit: dBm



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### Maximum Target Average Power for Production Unit

| LTE Band V |          |         |                       |                 |                          |                    |
|------------|----------|---------|-----------------------|-----------------|--------------------------|--------------------|
| Modulation | BW (MHz) | RB size | Full Power mode (MPR) | Full Power mode | Reduced Power mode (MPR) | Reduced Power mode |
| QPSK       | 10       | ≤ 12    | 0                     | 23.7(+/-1dB)    | NA                       | NA                 |
| QPSK       | 10       | > 12    | 1                     | 22.7(+/-1dB)    | NA                       | NA                 |
| 16QAM      | 10       | ≤ 12    | 1                     | 22.7(+/-1dB)    | NA                       | NA                 |
| 16QAM      | 10       | > 12    | 2                     | 21.7(+/-1dB)    | NA                       | NA                 |
| QPSK       | 5        | ≤ 8     | 0                     | 23.7(+/-1dB)    | NA                       | NA                 |
| QPSK       | 5        | > 8     | 1                     | 22.7(+/-1dB)    | NA                       | NA                 |
| 16QAM      | 5        | ≤ 8     | 1                     | 22.7(+/-1dB)    | NA                       | NA                 |
| 16QAM      | 5        | > 8     | 2                     | 21.7(+/-1dB)    | NA                       | NA                 |
| QPSK       | 3        | ≤ 4     | 0                     | 23.7(+/-1dB)    | NA                       | NA                 |
| QPSK       | 3        | > 4     | 1                     | 22.7(+/-1dB)    | NA                       | NA                 |
| 16QAM      | 3        | ≤ 4     | 1                     | 22.7(+/-1dB)    | NA                       | NA                 |
| 16QAM      | 3        | > 4     | 2                     | 21.7(+/-1dB)    | NA                       | NA                 |
| QPSK       | 1.4      | ≤ 5     | 0                     | 23.7(+/-1dB)    | NA                       | NA                 |
| QPSK       | 1.4      | > 5     | 1                     | 22.7(+/-1dB)    | NA                       | NA                 |
| 16QAM      | 1.4      | ≤ 5     | 1                     | 22.7(+/-1dB)    | NA                       | NA                 |
| 16QAM      | 1.4      | > 5     | 2                     | 21.7(+/-1dB)    | NA                       | NA                 |

Power unit: dBm

### Maximum Target Average Power for Production Unit

| LTE Band VII |          |         |                       |                 |                          |                    |
|--------------|----------|---------|-----------------------|-----------------|--------------------------|--------------------|
| Modulation   | BW (MHz) | RB size | Full Power mode (MPR) | Full Power mode | Reduced Power mode (MPR) | Reduced Power mode |
| QPSK         | 20       | ≤ 18    | 0                     | 23.7(+/-1dB)    | 0                        | 22.7(+/-1dB)       |
| QPSK         | 20       | > 18    | 1                     | 22.7(+/-1dB)    | 1                        | 21.7(+/-1dB)       |
| 16QAM        | 20       | ≤ 18    | 1                     | 22.7(+/-1dB)    | 1                        | 21.7(+/-1dB)       |
| 16QAM        | 20       | > 18    | 2                     | 21.7(+/-1dB)    | 2                        | 20.7(+/-1dB)       |
| QPSK         | 15       | ≤ 16    | 0                     | 23.7(+/-1dB)    | 0                        | 22.7(+/-1dB)       |
| QPSK         | 15       | > 16    | 1                     | 22.7(+/-1dB)    | 1                        | 21.7(+/-1dB)       |
| 16QAM        | 15       | ≤ 16    | 1                     | 22.7(+/-1dB)    | 1                        | 21.7(+/-1dB)       |
| 16QAM        | 15       | > 16    | 2                     | 21.7(+/-1dB)    | 2                        | 20.7(+/-1dB)       |
| QPSK         | 10       | ≤ 12    | 0                     | 23.7(+/-1dB)    | 0                        | 22.7(+/-1dB)       |
| QPSK         | 10       | > 12    | 1                     | 22.7(+/-1dB)    | 1                        | 21.7(+/-1dB)       |
| 16QAM        | 10       | ≤ 12    | 1                     | 22.7(+/-1dB)    | 1                        | 21.7(+/-1dB)       |
| 16QAM        | 10       | > 12    | 2                     | 21.7(+/-1dB)    | 2                        | 20.7(+/-1dB)       |
| QPSK         | 5        | ≤ 8     | 0                     | 23.7(+/-1dB)    | 0                        | 22.7(+/-1dB)       |
| QPSK         | 5        | > 8     | 1                     | 22.7(+/-1dB)    | 1                        | 21.7(+/-1dB)       |
| 16QAM        | 5        | ≤ 8     | 1                     | 22.7(+/-1dB)    | 1                        | 21.7(+/-1dB)       |
| 16QAM        | 5        | > 8     | 2                     | 21.7(+/-1dB)    | 2                        | 20.7(+/-1dB)       |

Power unit: dBm

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**802.11b 1M**

| WLAN2.4GHz        |                           |
|-------------------|---------------------------|
| Center Freq (MHz) | Maximum limit power (dBm) |
| Ch1               | 19                        |
| Ch2               | 19                        |
| Ch3               | 19                        |
| Ch4               | 19                        |
| Ch5               | 19                        |
| Ch6               | 19                        |
| Ch7               | 19                        |
| Ch8               | 19                        |
| Ch9               | 19                        |
| Ch10              | 19                        |
| Ch11              | 19                        |

Power unit: dBm

**802.11b/g/n**

| WLAN2.4GHz                | IEEE 802.11 |        |               |
|---------------------------|-------------|--------|---------------|
| Center Freq (MHz)         | 11b         | 11g_6M | 11n-HT20_MCS0 |
| Maximum limit power (dBm) |             |        |               |
| Ch1                       | 19          | 16     | 15            |
| Ch2                       | 19          | 16     | 15            |
| Ch3                       | 19          | 16     | 15            |
| Ch4                       | 19          | 16     | 15            |
| Ch5                       | 19          | 16     | 15            |
| Ch6                       | 19          | 16     | 15            |
| Ch7                       | 19          | 16     | 15            |
| Ch8                       | 19          | 16     | 15            |
| Ch9                       | 19          | 16     | 15            |
| Ch10                      | 19          | 16     | 15            |
| Ch11                      | 19          | 16     | 15            |

Power unit: dBm

**802.11a 6M**

| WLAN 5.2GHz/5.3GHz/5.5GHz/5.8GHz Band |                           |
|---------------------------------------|---------------------------|
| Center Freq (MHz)                     | Maximum limit power (dBm) |
| Ch36                                  | 12                        |
| Ch38                                  | NA                        |
| Ch40                                  | 12                        |
| Ch44                                  | 12                        |
| Ch46                                  | NA                        |
| Ch48                                  | 12                        |
| Ch50                                  | NA                        |

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|       |    |
|-------|----|
| Ch52  | 12 |
| Ch54  | NA |
| Ch56  | 12 |
| Ch58  | NA |
| Ch60  | 12 |
| Ch62  | NA |
| Ch64  | 12 |
| Ch100 | 12 |
| Ch102 | NA |
| Ch104 | 12 |
| Ch106 | NA |
| Ch108 | 12 |
| Ch110 | NA |
| Ch112 | 12 |
| Ch114 | NA |
| Ch116 | 12 |
| Ch118 | NA |
| Ch120 | 12 |
| Ch122 | NA |
| Ch124 | 12 |
| Ch126 | NA |
| Ch128 | 12 |
| Ch132 | 12 |
| Ch134 | NA |
| Ch136 | 12 |
| Ch138 | NA |
| Ch140 | 12 |
| Ch149 | 12 |
| Ch151 | NA |
| Ch153 | 12 |
| Ch155 | NA |
| CH157 | 12 |
| Ch159 | NA |
| Ch161 | 12 |
| CH165 | 12 |

Power unit: dBm



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### 802.11a/n20/n40

| WLAN5.2GHz Band           | IEEE 802.11 |                  |                  |
|---------------------------|-------------|------------------|------------------|
| Center Freq (MHz)         | 11a         | 11n-HT20<br>MCS0 | 11n-HT40<br>MCS0 |
| Maximum limit power (dBm) |             |                  |                  |
| Ch36                      | 12          | 11               | NA               |
| Ch38                      | NA          | NA               | 11               |
| Ch40                      | 12          | 11               | NA               |
| Ch42                      | NA          | NA               | NA               |
| Ch44                      | 12          | 11               | NA               |
| Ch46                      | NA          | NA               | 11               |
| Ch48                      | 12          | 11               | NA               |

Power unit: dBm

| WLAN5.3GHz Band           | IEEE 802.11 |                  |                  |
|---------------------------|-------------|------------------|------------------|
| Center Freq (MHz)         | 11a         | 11n-HT20<br>MCS0 | 11n-HT40<br>MCS0 |
| Maximum limit power (dBm) |             |                  |                  |
| Ch50                      | NA          | NA               | NA               |
| Ch52                      | 12          | 11               | NA               |
| Ch54                      | NA          | NA               | 11               |
| Ch56                      | 12          | 11               | NA               |
| Ch58                      | NA          | NA               | NA               |
| Ch60                      | 12          | 11               | NA               |
| Ch62                      | NA          | NA               | 11               |
| Ch64                      | 12          | 11               | NA               |

Power unit: dBm

| WLAN5.5GHz Band           | IEEE 802.11 |                  |                  |
|---------------------------|-------------|------------------|------------------|
| Center Freq (MHz)         | 11a         | 11n-HT20<br>MCS0 | 11n-HT40<br>MCS0 |
| Maximum limit power (dBm) |             |                  |                  |
| Ch100                     | 12          | 11               | NA               |
| Ch102                     | NA          | NA               | 11               |
| Ch104                     | 12          | 11               | NA               |
| Ch106                     | NA          | NA               | NA               |
| Ch108                     | 12          | 11               | NA               |
| Ch110                     | NA          | NA               | 11               |
| Ch112                     | 12          | 11               | NA               |
| Ch114                     | NA          | NA               | NA               |
| Ch116                     | 12          | 11               | NA               |
| Ch118                     | NA          | NA               | 11               |
| Ch120                     | 12          | 11               | NA               |

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|       |    |    |    |
|-------|----|----|----|
| Ch122 | NA | NA | NA |
| Ch124 | 11 | 11 | NA |
| Ch126 | NA | NA | 11 |
| Ch128 | 12 | 11 | NA |
| Ch132 | 12 | 11 | NA |
| Ch134 | NA | NA | 11 |
| Ch136 | 12 | 11 | NA |
| Ch138 | NA | NA | NA |
| Ch140 | 12 | 11 | NA |

Power unit: dBm

| WLAN5.8GHz Band           | IEEE 802.11 |                  |                  |
|---------------------------|-------------|------------------|------------------|
| Center Freq (MHz)         | 11a         | 11n-HT20<br>MCS0 | 11n-HT40<br>MCS0 |
| Maximum limit power (dBm) |             |                  |                  |
| Ch149                     | 12          | 11               | NA               |
| Ch151                     | NA          | NA               | 11               |
| Ch153                     | 12          | 11               | NA               |
| Ch155                     | NA          | NA               | NA               |
| CH157                     | 12          | 11               | NA               |
| Ch159                     | NA          | NA               | 11               |
| Ch161                     | 12          | 11               | NA               |
| CH165                     | 12          | 11               | NA               |

Power unit: dBm

\*Note: It has been verified that the lowest data rate has the highest power. Therefore, only the lowest data rate power is indicated in this Tune up Information document.

**Bluetooth**

| Mode / Band       | Maximum Target Average Power (dBm) |                            |                   |            |            |
|-------------------|------------------------------------|----------------------------|-------------------|------------|------------|
|                   | 1Mbps<br>(GFSK)                    | 2Mbps<br>( $\pi/4$ -DQPSK) | 3Mbps<br>(8-DPSK) | LE<br>(1M) | LE<br>(2M) |
| 2.4 GHz Bluetooth | 9.5                                | 9.5                        | 9.5               | -4         | -4         |

Power unit: dBm