**Risk Assessment according 2014/53/EU RED**

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| 1. **General** | | | |
| Company Name | Shenzhen DOKE Electronic Co.,Ltd. | | |
| Address | RM 1902 EASEY COMM BLDG 253-261 HENNESSY ROAD WANCHAI  HONG KONG CHINA. | | |
| Person, responsible | Xie.ce / Manager | Person, technical | Xie.ce / Manager |
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| 1. **Identification of Equipment** | |
| Model Name | Tab 8 WiFi |
| Family Model | Tab 8 Kids, Pad 70 |
| [Model Difference](../2006ReportFormats/ReFoDatabase/Domestic/ModelDifferencesBSMI.doc) | All the model are the same circuit and RF module,except the Trade Mark. |
| Trade Mark | Blackview, OSCAL |
| Hardware Version | R863T-RK3566-DK-V1.0 |
| Software Version | Tab\_8\_WiFi\_EEA\_S863T\_V1.0  Tab\_8\_Kids\_EEA\_S863T\_V1.0  PAD\_70\_EEA\_S863T\_V1.0 |
| Firmware Version | N/A |
| Working Temperature | +40°C ~ -10°C |

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| 1. **Technical Description** | |
| Module/Final Application/Combined Equipment | Tablet PC |
| Function of the Final Application | |
| Radio Technologies/ Antenna | WLAN 2.4 GHz  b/g/n20/n40 other Antenna type: FPC  WLAN 5.2GHz/5.8GHz  a/n(20/40)/ac(20/40/80)/ ax(20/40/80) other, Bands  …. Antenna type: PIFA Antenna  BT classic Antenna type: PIFA Antenna  BT EDR Antenna type: PIFA Antenna  BT LE Antenna type: PIFA Antenna Zig Bee Antenna type        Z Wave Antenna type       Frequency        RFID Antenna type       Frequency        2G, Bands GSM/GPRS/EGPRS900/1800 Antenna type:   3G, Bands WCDMA/HSDPA/HSUPA B1/B8 Antenna type:   4G, Bands LTE B1/B3/B7/B8/B20/40 Antenna type:  5G,Bands EN-DC B1+n78/ B3+N78/ B8+N78, NR FDD N1/ N3 / N28, NR TDD N38/ N77 / N78 Antenna type: PIFA  Proprietary , Frequency       Channel Bandwith       RF-Power       Antenna type       Transmitter  Receiver  Transceiver,  other: GPS Antenna type: PIFA;  FM Antenna type: |
| Radio application environment | Automotive, additional requirements requested to RED defined in ECE 10 Directive & OEM Requirements  Industry,  Consumer  Medical, additional requirements requested to RED defined in 93/42/EU  Airborne, additional requirements requested to RED defined in OEM Requirements  Ship, additional requirements requested to RED defined in OEM Requirements or 96/98/EU& 2014/90/EU  ARTEX 93/15/EU & 2014/28/EU  Other |
| Intended Used | Commercial used |

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| 1. **Essential requirements acc. Article 3.1a electrical safety,  Extract from CENELEC GUIDE 32Guidelines for Safety Related Risk Assessment and Risk Reduction for Low Voltage Equipment Edition 1, 2014-07** | | |
| Requirement | Specification/conditions | Compliance verified by |
| Preliminary observations | See below | Application of Annex A of Guide 32 Guidelines |
| Safety integration | Adequateprotection for persons and property provided. Details See below | Application of this Guide, in particular  application of the “3-step-method”  X– Inherent design measures  – Protective measures  – User information |
| Protection against electrical hazards  a) leakage current  b) energy supply  c) stored charges  d) arcs  e) electric shock f) burns | External power supply was approved Input : DC5V, 2.0A | -EN IEC62368-1:2020/A11：2020 |
| Protection against mechanical hazards  a) instability  b) break-down during operation  c) falling or ejected objects  d) inadequate surfaces, edges or corners  e) moving parts, especially where there may be variations in the rotational speed of parts f) vibration  g) improper fitting of parts | Weight < 1kg, no instability hazard.  100N force to back cover, 3drops from 1m height, stress relief test at 70℃ for 7h. | -EN 62368-1:2014+A11:2017  -Inherent design measures |
| Protection against other hazards  a) Explosion  b) Optical radiation  c) Fire  d) Temperature  e) Acoustic Noise  f) Biological and chemical effects  g) Emissions, production and/or  use of hazardous substances  h) e.g. gases, liquids, dusts, mists, vapour)  i) Unattended operation  j) Connection to and interruption from power  supply  k) Combination of equipment  l) Implosion  m) Hygiene conditions  n) Ergonomics | Component single fault was conducted no hazards during test.  The maximum operating temperature for battery discharging mode is 60°C, The maximum operating temperature for charging with AC power adapter mode is 25°C.  Battery provided: 6580mAh, 3.8V, temperature of the equipment measured at fully charged and discharged condition. | - EN62133-2:2017  - EN 62368-1:2014+A11:2017  - Inherent design measures |
| Functional safety and reliability  a) Equipment design  b) Type related hazards  c) System faults | No such hazards existed | - Inherent design measures |

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| 1. **Essential requirements acc. Article 3.1a Health’s,  Extract from Guidelines for Safety Related Risk Assessment and Risk Reduction for Low Voltage Equipment Edition 1, 2014-07** | | |
| Requirement | Specification/conditions | Compliance verified by |
| a) Hazards arising from electric,  magnetic, and electromagnetic fields, | P conducted<20mW,  Ambient temperature: 20°C~24°C  Relative Humidity: 30%~70%  Separation distance of 0mm | EN 50566:2017;  EN 62209-2:2010;  EN 62479:2010;  Max Simultaneous Tx Body SAR Value0.918W/kg < Limit 2 W/kg, Compliance.  Max Simultaneous TxMember DASValue1.441W/kg < Limit 4 W/kg, Compliance. |

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| 1. **Essential requirements acc. Article 3.1b electromagnetic compatibility as set out in Directive 2014/30/EU** | | |
| Requirement | Specification/conditions | Compliance verified by |
| **Electrostatic discharge immunity test**, | The test severity level for contact discharge : ±4 kV and for air discharge: ±8 kV;Ambient temperature: 15 °C~35 °C;  Relative humidity: 30 %~ 60 %;  Atmospheric pressure: 86 kPa~ 106 kPa | ETSI EN 301 489-1 V2.2.3 (2019-11)  ETSI EN 301 489-17 V3.2.4 (2020-09)  EN 55035:2017+A11:2020  EN 61000-4-2 (Contact discharge:Level2; Air discharge: Level 3)  Note:The compliance assessment uses harmonized standards where possible, Application of harmonised and “target to be harmonised” standards, The test suite for each product ensures compliance with the normative requirements of harmonized standards, and Notified body review of Art 3.1a, 3.1b and 3.2 compliance. |
| **Radiated, radio-frequency, electromagnetic field**  **immunity test,** | Test Field Strength: 3 V/m  Modulation:1kHz Sine Wave, 80%, AM Modulation  Frequency Range:80 MHz –6GHz | ETSI EN 301 489-1 V2.2.3 (2019-11)  ETSI EN 301 489-17 V3.2.4 (2020-09)  EN 55035:2017+A11:2020  EN 61000-4-3 (Level2)  Note:The compliance assessment uses harmonized standards where possible, Application of harmonised and “target to be harmonised” standards, The test suite for each product ensures compliance with the normative requirements of harmonized standards, and Notified body review of Art 3.1a, 3.1b and 3.2 compliance. |
| **Radiated, radio-frequency, electromagnetic field**  **immunity test,** | Test Field Strength: 3 V/m  Modulation:1kHz Sine Wave, 80%, AM Modulation  Frequency Range:80 MHz –1GHz  1800MHz  2600MHz  3500MHz  5000MHz | ETSI EN 301 489-1 V2.2.3 (2019-11)  ETSI EN 301 489-17 V3.2.4 (2020-09)  EN 55035:2017+A11:2020  EN 61000-4-3 (Level2)  Note:The compliance assessment uses harmonized standards where possible, Application of harmonised and “target to be harmonised” standards, The test suite for each product ensures compliance with the normative requirements of harmonized standards, and Notified body review of Art 3.1a, 3.1b and 3.2 compliance. |
| **Electrical fast transient/burst immunity test**, | Test Voltage: Power Line：1 kV  Impulse Frequency: For DC/AC ports: 5 kHz | ETSI EN 301 489-1 V2.2.3 (2019-11)  ETSI EN 301 489-17 V3.2.4 (2020-09)  EN 55035:2017+A11:2020  EN 61000-4-4(Level 2)  Note:The compliance assessment uses harmonized standards where possible, Application of harmonised and “target to be harmonised” standards, The test suite for each product ensures compliance with the normative requirements of harmonized standards, and Notified body review of Art 3.1a, 3.1b and 3.2 compliance. |
| **Surge immunity test,** | Test Voltage:PowerLine：up to 1 kV  Phase Angle: 0 /90/180/270 | ETSI EN 301 489-1 V2.2.3 (2019-11)  ETSI EN 301 489-3 V2.1.1 (2019-03)  ETSI EN 301 489-17 V3.2.4 (2020-09)  EN 55035:2017+A11:2020  EN 61000-4-5 (Level2)  Note: The compliance assessment uses harmonized standards where possible, Application of harmonised and “target to be harmonised” standards, The test suite for each product ensures compliance with the normative requirements of harmonized standards, and Notified body review of Art 3.1a, 3.1b and 3.2 compliance. |
| **Surge immunity test,** | Test Voltage:PowerLine：up to 1 kV  Phase Angle: 90/270 | ETSI EN 301 489-1 V2.2.3 (2019-11)  ETSI EN 301 489-3 V2.1.1 (2019-03)  ETSI EN 301 489-17 V3.2.4 (2020-09)  EN 55035:2017+A11:2020  EN 61000-4-5 (Level2)  Note:The compliance assessment uses harmonized standards where possible, Application of harmonised and “target to be harmonised” standards, The test suite for each product ensures compliance with the normative requirements of harmonized standards, and Notified body review of Art 3.1a, 3.1b and 3.2 compliance. |
| **Immunity test to conducted disturbances induced by**  **radio-frequency fields,** | Frequency Range:0.15 MHz - 80 MHz  Field Strength:3Vr.m.s.  Modulation:1kHz Sine Wave, 80%, AM Modulation | ETSI EN 301 489-1 V2.2.3 (2019-11)  ETSI EN 301 489-3 V2.1.1 (2019-03)  ETSI EN 301 489-17 V3.2.4 (2020-09)  EN 55035:2017+A11:2020  EN 61000-4-6 (Level2)  Note:The compliance assessment uses harmonized standards where possible, Application of harmonised and “target to be harmonised” standards, The test suite for each product ensures compliance with the normative requirements of harmonized standards, and Notified body review of Art 3.1a, 3.1b and 3.2 compliance. |
| **Voltage dips, short interruptions and voltage variations**  **immunity test,** | [VoltageReduction](file:///\\Neutron\文件專區\ReportFormats\ReFoDatabase\Foreign\IEC%2061000-4-11.doc): Voltage dip 0%, Duration: 10ms; Voltage dip 0%, Duration: 20ms; Voltage dip 70%, Duration: 10ms; Voltage dip 70%, Duration: 500ms; Voltage interruptions:  Duration: 5000ms | ETSI EN 301 489-1 V2.2.3 (2019-11)  ETSI EN 301 489-3 V2.1.1 (2019-03)  ETSI EN 301 489-17 V3.2.4 (2020-09)  EN 55035:2017+A11:2020  EN 61000-4-11  Note:The compliance assessment uses harmonized standards where possible, Application of harmonised and “target to be harmonised” standards, The test suite for each product ensures compliance with the normative requirements of harmonized standards, and Notified body review of Art 3.1a, 3.1b and 3.2 compliance. |
| **Conducted Emissions,** | Frequency Range:0.15MHz~30MHz;  Test line:AC power line | ETSI EN 301 489-1 V2.2.3 (2019-11)  ETSI EN 301 489-3 V2.1.1 (2019-03)  ETSI EN 301 489-17 V3.2.4 (2020-09)  EN 55032:2015+A1:2020 (Class B)  Note:The compliance assessment uses harmonized standards where possible, Application of harmonised and “target to be harmonised” standards, The test suite for each product ensures compliance with the normative requirements of harmonized standards, and Notified body review of Art 3.1a, 3.1b and 3.2 compliance. |
| **Radiated Emissions,** | Frequency Range:30MHz~1GHz & 1GHz~6GHz | ETSI EN 301 489-1 V2.2.3 (2019-11)  ETSI EN 301 489-3 V2.1.1 (2019-03)  ETSI EN 301 489-17 V3.2.4 (2020-09)  EN 55032:2015+A1:2020 (Class B)  Note:The compliance assessment uses harmonized standards where possible, Application of harmonised and “target to be harmonised” standards, The test suite for each product ensures compliance with the normative requirements of harmonized standards, and Notified body review of Art 3.1a, 3.1b and 3.2 compliance. |
| **Harmonic current emission,** | N/A | ETSI EN 301 489-1 V2.2.3 (2019-11)  ETSI EN 301 489-3 V2.1.1 (2019-03)  ETSI EN 301 489-17 V3.2.4 (2020-09)  EN 61000-3-2  Note:The compliance assessment uses harmonized standards where possible, Application of harmonised and “target to be harmonised” standards, The test suite for each product ensures compliance with the normative requirements of harmonized standards, and Notified body review of Art 3.1a, 3.1b and 3.2 compliance. |
| **Voltage fluctuations and flicker** | Test items:Pst, Plt, dc, dmax, d(t) | ETSI EN 301 489-1 V2.2.3 (2019-11)  ETSI EN 301 489-3 V2.1.1 (2019-03)  ETSI EN 301 489-17 V3.2.4 (2020-09)EN 61000-3-3  Note:The compliance assessment uses harmonized standards where possible, Application of harmonised and “target to be harmonised” standards, The test suite for each product ensures compliance with the normative requirements of harmonized standards, and Notified body review of Art 3.1a, 3.1b and 3.2 compliance. |
| **Further EMC requirements see EN 61000-4-1 or specialized EMC requirements depends from the product** | N/A | N/A |

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| 1. **Essential requirements acc. Article 3.2 Radio equipment shall be so constructed that it both effectively uses and supports the efficient use of radio spectrum in order to avoid harmful interference** | | |
| Requirement | Specification/conditions | Compliance verified by |
| Transmitter Requirements | BR+EDR TX;  BLE TX;  WIFI TX;  Normal Test Conditions:  Temperature:15°C - 35°C  Relative Humidity:20% - 75%  Supply Voltage: DC 3.8V  Air Pressure:980 ... 1020 hPa;  Extreme Test Conditions:  Temperature:-10°C ~+45°C | ETSI EN 300 328 V2.2.2 (2019-07);  ETSI EN 301 893 V2.1.1 (2017-05)  ETSI EN 300 440 V2.2.1 (2018-07) |
| Receiver Requirements | BR+EDR RX;  BLE RX;  WIFI RX  Normal Test Conditions:  Temperature:15°C - 35°C  Relative Humidity:20% - 75%  Supply Voltage: DC3.8V  Air Pressure:980 ... 1020 hPa; | ETSI EN 300 328 V2.2.2 (2019-07);  ETSI EN 301 893 V2.1.1 (2017-05)  ETSI EN 300 440 V2.2.1 (2018-07) |
| Co-Location Transmitter | BR+EDR TX;  BLE TX;  WIFI TX;  Normal Test Conditions:  Temperature:15°C - 35°C  Relative Humidity:20% - 75%  Supply Voltage: DC3.8V  Air Pressure:980 ... 1020 hPa; | ETSI EN 300 328 V2.2.2 (2019-07);  ETSI EN 301 893 V2.1.1 (2017-05)  ETSI EN 300 440 V2.2.1 (2018-07) |

Note: The compliance assessment uses harmonized standards where possible, Application of harmonized and “target to be harmonized” standards, The test suite for each product ensures compliance with the normative requirements of harmonized standards, and Notified body review of Art 3.1a, 3.1b and 3.2 compliance.

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| **8.Essential requirements acc. Article 3.3 Radio equipment within certain categories or classes shall be so constructed that it complies with the following essential requirements:** | | |
| Requirement | Specification/conditions | Compliance verified by |
| (a) radio equipment interworks with accessories, in particular with common chargers;  (b) radio equipment interworks via networks with other radio equipment;  (c) radio equipment can be connected to interfaces of the appropriate type throughout the Union;  (d) radio equipment does not harm the network or its functioning nor misuse network resources, thereby causing an unacceptable degradation of service;  (e) radio equipment incorporates safeguards to ensure that the personal data and privacy of the user and of the  subscriber are protected;  (f) radio equipment supports certain features ensuring protection from fraud;  (g) radio equipment supports certain features ensuring access to emergency services;  (h) radio equipment supports certain features in order to facilitate its use by users with a disability;  (i) radio equipment supports certain features in order to ensure that software can only be loaded into the radio equip­  ment where the compliance of the combination of the radio equipment and software has been demonstrated. |  | Ans:  N/A |

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| **9.Safety-related security, e.g. WLAN or remote control operation devices and subsequent communication layers** | | |
| Requirement | Specification/conditions | Compliance verified by |
| a) Protection against casual or coincidental violation; |  | Yes, the SW does not support wlan&rf parameters and the user cannot use it |
| b) Protection against intentional violation using simple means with low resources, generic skills and low motivation; |  | Yes, the SW does not support wlan&rf parameters and the user cannot use it |
| c) Protection against intentional violation using sophisticated means with moderate resources, specific skills related to the considered equipment and moderate motivation; |  | Yes, the SW does not support wlan&rf parameters and the user cannot use it |
| d) Protection against intentional violation using sophisticated means with extended resources, specific skills related to the considered equipment and high motivation. |  | Yes, the SW does not support wlan&rf parameters and the user cannot use it |

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| **Sign by** | **Date** |
|  | 4/23/2023 |