

2014/53/EU RED Article 3 Risk Assessment Review Matrix

Project Number: RSZ190325004-RF

Applicant: Shenzhen Xin Yuan Electronic Technology Co., Ltd.

Product Name: Module Model Name/Number: T-MICRO32

Bacl Risk Number [per 2014/53/EU RED Article 3 (Essential Requirements) Item #:]	Essential Requirement	Identified Risks (by Category): (State either N/A or list below in detail the applicable risks by category. Use additional sheets if necessary add additional categories if additional risks are known or reasonably suspected)	Applicable Standards Used (NOTE: only Standards Harmonized under the RED give presumption of conformity)	Assessed Risk Level: for each Category (Note: must be LOW or N/A to be compliant. Moderate or High Risks must have been mitigated)
1(a)	Radio Equipment shall be constructed so as to ensure: Protection of health and safety of persons and of domestic animals and the protection of property, including the objectives with respect to safety requirements set out in Directive 2014/35/EU, but with no voltage limit applying;	RF Hazards (SAR or MPE and/or Contact Current):	EN62311	LOW
		AC Electrical Hazards:	N.A.	N.A.
		DC Electrical Hazards:	EN 60950-1	LOW
		Internal or Removable Battery Hazards:	N.A.	N.A.
		Lightning Damage Hazard:	EN 301 489-1/-17	LOW
		Mechanical Hazards:	EN 60950-1	LOW
		Other Hazards:	EN 60950-1	LOW
1(b)	Radio Equipment shall be constructed so as to ensure: Adequate level of electromagnetic compatibility as set out in Directive 2014/30/EU. Note: the relevant Essential Requirements of the EMC Directive 2014/30/EU are as follows: Equipment shall be so designed and manufactured, having regard to the state of the art, as to ensure that: (a) the electromagnetic disturbance generated does not exceed the level above which radio and telecommunications equipment or other equipment cannot operate as intended; (b) it has a level of immunity to the electromagnetic disturbance to be expected in its intended use which allows it to operate without unacceptable degradation of its intended use.	EMC Emissions Risks from the Design, Manufacturing, and Intended-use Perspectives:	EN 301 489-1/-17	LOW
		EMC Immunity Risks from the Design, Manufacturing, and Intended-use Perspectives:	EN 301 489-1/-17	LOW
		Production Quantity Risk:	None	LOW

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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.	Spectrum Efficiency Risks (considering the state of the art):	EN 300 328	LOW
		Foreseeable Use and Misuse Risks:	None	LOW
		Production Quantity Risk:	None	LOW

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<p>At this time, only Article 3 Item 3(g) - which addresses radio equipment that supports features relating to access to emergency services – is applicable to RED risk assessment issues, because it is the only Item for which “delegated acts” exist. In particular, the only the following five classes of radio equipment are currently affected by Article 3 Item 3(g) are:</p> <ul style="list-style-type: none"> ▪ <i>Radio equipments that provide radiotelephone service on inland waterways;</i> ▪ <i>Avalanche beacons;</i> ▪ <i>Marine radio communication equipment which is intended to be used on non-SOLAS vessels and to participate in the Global Maritime Distress and Safety System (GMDSS);</i> ▪ <i>Radio equipment intended to participate in the (maritime) Automatic Identification System (AIS);</i> ▪ <i>Radio equipment that is used to ensure access of COSPAS-SARSAT locator beacons to emergency services.</i> <p>If your product falls into any of the above classes of radio equipment, your Risk Assessment is required to address the risk categories listed in 3(g) below.</p> <p>If your product does not fall into any of the above classes of radio equipment, you are not required to address any of the risks associated with 3(a) through 3(i) below.</p>				
3	Radio equipment within certain categories or classes shall be so constructed that it complies with the following essential requirements:			
3(a)	Radio equipment interworks with accessories, in particular with common chargers;	<p>Mechanical Compatibility Risk:</p> <p>Electrical Compatibility Risk:</p> <p>Safety Risks associated with the Accessories:</p>		Assessments of these Risks are currently Not Required
3(b)	Radio equipment interworks via networks with other radio equipment;	<p>Mechanical Compatibility Risk:</p> <p>Electrical Compatibility Risk:</p> <p>Protocol Compatibility Risks:</p> <p>Access Control Risks:</p> <p>Other Risks</p>		Assessments of these Risks are currently Not Required

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3(c)	Radio equipment can be connected to interfaces of the appropriate type throughout the Union;	Mechanical Compatibility Risk: Electrical Compatibility Risk: Protocol Compatibility Risks: Access Control Risks: Other Risks:		Assessments of these Risks are currently Not Required
3(d)	Radio equipment does not harm the network or its functioning nor misuse network resources, thereby causing an unacceptable degradation of service;	Risk of Network Harm: Risk of Network Malfunction: Network Resources Misuse Risk:		Assessments of these Risks are currently Not Required
3(e)	radio equipment incorporates safeguards to ensure that the personal data and privacy of the user and of the subscriber are protected;	Breach of End-user Privacy Risk: Breach of Subscriber Privacy Risk: Risk of disclosure of Personal data to unauthorized parties:		Assessments of these Risks are currently Not Required
3(f)	Radio equipment supports certain features ensuring protection from fraud;	Risk of Inadequate Protections against Fraud:		Assessments of these Risks are currently Not Required
Risk Number [per 2014/53/EU RED Article 3 (Essential Requirements) Item #:]	Essential Requirement	Identified Risks: (State either N/A or list below in detail the applicable risks by category. Use additional sheets if necessary add additional categories if additional risks are known or reasonably suspected)	Applicable Standards Used (NOTE: only Standards Harmonized under the RED give presumption of conformity)	Assessed Risk Level: for each Category (Note: must be LOW or N/A to be compliant. Moderate or High Risks must have been mitigated)

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3(g)	Radio equipment supports certain features ensuring access to emergency services;	<p>Risk of Denial of Service Attacks</p> <p>Risk of Intentional EMI or Jamming:</p> <p>Risk of Spoofing and/or Meaconing:</p> <p>Risk of Inability to establish and/or maintain connectivity with adequate Quality of Service under routine operational conditions:</p> <p>Other Risks:</p>		
3(h)	Radio equipment supports certain features in order to facilitate its use by users with a disability;	<p>Risk of such features being unusable to persons having such disabilities:</p> <p>Risk of such features becoming unusable due to anticipated or scheduled upgrades:</p> <p>Other Risks:</p>		Assessments of these Risks are currently Not Required
3(i)	Radio equipment supports certain features in order to ensure that software can only be loaded into the radio equipment where the compliance of the combination of the radio equipment and software has been demonstrated.	<p>Risk that end-users or other third parties can perform unauthorized software modifications:</p> <p>Risk that unauthorized software (including viruses, Trojans, rootkits, malware, ransomware, etc.) can be intentionally and/or unintentionally installed by parties other than the end-user:</p> <p>Other Risks:</p>		Assessments of these Risks are currently Not Required

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Detail how each Moderate or High Risk identified above was mitigated Note: Use additional sheets if necessary	
Risk Number [per 2014/53/EU RED Article 3 (Essential Requirements) Item #:]	Action(s) taken to Mitigate the Risk
1(a)	RF Hazard: The maximum measured 10-g SAR is 0.752W/kg, which is below the limit of 2 W/kg stated in EN 50360:2017/EN 50566:2017. The RF Exposure to human head/body is thus in low risk level. Please refer to Measurement Report RSZ190325004.
	AC Electrical Hazard: N.A.
	DC Electrical Hazard: The equipment is regarded as class III equipment. It supplied by SELV source (+2.3~+3.6V DC, less than 60VDC), No TNV circuits, and no battery. Minimal risk of DC electrical Hazards.
	Internal or Removable Battery Hazard: N.A.
	Lightning Damage Hazard: The EUT has been tested in accordance with EN 301 489 series of standards for RF Immunity and SURGE. Measurement results met the product performance criteria stated in the corresponding product standards. Thus, the risk level is determined to be low for Lightning Damage Hazard. Please refer to Measurement Report RSZ190325004-SF-01 for detailed information. Furthermore, usage in extreme weather conditions is not recommended by Manufacturer in order to further reduce the risk level.
	Mechanical Hazard: Please refer to Safety Report RSZ190325004-SF issued by BACL Shenzhen for detailed information.
	Other Hazard: Please refer to Safety Report RSZ190325004-SF issued by BACL Shenzhen for detailed information.
1(b)	EMC Emissions Risk: The EUT had been tested against EN 301 489 series standards for EMC Emissions matters and found to be compliance. Please refer to Measurement Report RSZ190325004-02 for detailed information. In order to maintain product compliance, "closed-loop procedure" is guaranteed in the process from product design to mass production. The EMC Emissions risk level of this product is low based on the evaluation above.
	EMC Immunity Risk: The EUT had been tested against EN 301 489 series standards for EMC Immunity matters and found to be compliance. Please refer to Measurement Report RSZ190325004-02 for detailed information. In order to maintain product compliance, "closed-loop procedure" is guaranteed in the process from product design to mass production. Therefore, the EMC Immunity risk level of this product is low.
	Production Quantity Risk: Manufacturer declares that the production line capability for this product is 1500 pcs per day. 20% will be sampled from the production line for Quality Check and pass rate is proposed to be 98% to minimize Production Quantity Risk. Unqualified production samples will be re-worked or disposed.
2	Spectrum Efficiency Risks: The Bluetooth function of the EUT had been tested in accordance with EN 300328; the 2G function of the EUT had been tested in accordance with EN 301511. The function was found to be compliance according to the corresponding standard in order to keep wireless interference at minimum. Thus the spectrum efficiency Please refer to Measurement Report RSZ190325004-22 and RSZ190325004-11 for detailed information.
	Foreseeable Use and Misuse Risks: The internal permanent connection antenna will be provided in the product package. Switching to other antennas is prohibited and will affect the radio performance. Operating instructions and warning message are properly stated in the user manual to help avoiding misuse of the product and further reduce the risk it might cause. Please refer to the product manual. And End-user is prohibited to make modifications to the hardware.
	Production Quantity Risk: The production line capability for this product is 1500 pcs per day. 20% will be sampled from the production line for Quality Check and pass rate is proposed to be 98% to minimize Production Quantity Risk. Unqualified production samples will be re-worked or disposed.

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Manufacturer Compliance Statement:

Based on the evaluation detailed above and in 6 additional documents (supplied herein) and/or 0 additional sheets (attached), we certify that the radio equipment described in this Review Matrix presents a low risk of non-compliance with the essential requirements stated in Article 3 of the 2014/53/EU Radio Equipment Directive.

Prepared by: Yashon Zhang

Title: Product Manager

Yashon Zhang

Signature: _

Date: 2019/08/02

List of all Additional Documents supplied in support of this Risk Assessment:

RSZ190325004-02	EN 301489-1/-17
RSZ190325004-22	EN 300328
RSZ190325004	EN 62311
RSZ190325004-SF-01	EN 60950-1
User Manual	/

List of all Additional Sheets supplied in support of this Risk Assessment:
