



Radio Frequency Exposure Evaluation Report

FOR:
Qolsys Inc.

Model Number:
IQ Mini-S

Product Description:
Door Sensor Alarm System

FCC ID: 2AAJXQS-IQDWM
IC: 11205A-QSIQDWM

Per:
CFR Part Part1 (1.1307 & 1.1310), Part 2 (2.1091),
FCC KDB 447498 D01 General RF Exposure Guidance v06
ISED RSS-102 Issue 5

Report number: EMC_QOLSY_012_23001_FCC_ISED_SAR_Exclusion_Rev1

DATE: 2023-07-27



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1 Assessment

The following device was evaluated against the limits for general population uncontrolled exposure specified in CFR 47 Part 2.1093 according to SAR evaluation exclusion requirements specified in FCC regulation as listed in KDB 447498, and ISEDC RSS-102 Issue 5.

The device meets the requirements for SAR exclusion as stipulated by the above given FCC/ISEDC rules.

Company	Description	Model #
Qolsys Inc.	The IQ Mini-S is an encrypted sensor with superior range specifically designed with multi-level vibration detection. It can alert you if a door is left open and provide security for anything that opens or closes. It is intended to work only with Qolsys Alarm panels.	IQ Mini-S

Responsible for Testing Laboratory:

2023-07-27 Compliance Arndt Stoecker (Director of Regulatory Services)

Date	Section	Name	Signature
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Responsible for the Report:

2023-07-27 Compliance Art Thammanavarat (Senior EMC Engineer)

Date	Section	Name	Signature
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2 Administrative Data

2.1 Identification of the Testing Laboratory Issuing the Test Report

Company Name:	CETECOM Inc.
Department:	Compliance
Street Address:	411 Dixon Landing Road
City/Zip Code	Milpitas, CA 95035
Country	USA
Telephone:	+1 (408) 586 6200
Fax:	+1 (408) 586 6299
Compliance Manager:	Arndt Stoecker
Responsible Project Leader:	Akanksha Baskaran

2.2 Identification of the Client / Manufacturer

Client Firm/Name:	Qolsys Inc.
Street Address:	1919 S. Bascom Ave. Suite 600
City/Zip Code	Campbell, California, 95008
Country	USA

Identification of the Manufacturer

Manufacturer's Name:	Same as Client
Manufacturers Address:	
City/Zip Code	
Country	

3 Equipment under Assessment

Model No	IQ Mini-S
HW Version	D
SW Version	1.2.0
PMN	IQ Mini-S
Contains FCC-ID	2AAJXQS-IQDWM
Contains IC:	11205A-QSIQDWM
Operating Voltage Range	3VDC
Operating Temperature Range	Low : -10 °C Norm 25 °C High 50 °C
Radios included in the device	<u>Periodic radio</u> SRF Frequency of operation: 319.5MHz
Sample Revision	<input type="checkbox"/> Production <input checked="" type="checkbox"/> Pre-Production
EUT Dimensions	57.15mm x 25.4mm x 12.7mm
EUT Diameter	<input checked="" type="checkbox"/> < 60 cm <input type="checkbox"/> Other _____

4 FCC SAR test exclusions per KDB 447498

KDB 447498 D04 General RF Exposure Guidance v01 Section 2.1; RF Exposure Test Exemptions for Single Source states:

4.1 1-mW Test Exemption

Per § 1.1307(b)(3)(i)(A), a single RF source is exempt RF device (from the requirement to show data demonstrating compliance to RF exposure limits, as previously mentioned) if the available maximum time-averaged power is no more than 1 mW, regardless of separation distance. This exemption applies to all operating configurations and exposure conditions, for the frequency range 100 kHz to 100 GHz, regardless of fixed, mobile, or portable device exposure conditions. This is a standalone exemption, and it cannot be applied in conjunction with any other test exemption.

The 1 mW blanket exemption applies at separation distances less than 0.5 cm, including where there is no separation. This exemption shall not be used in conjunction with other exemption criteria other than those for multiple RF sources in paragraph § 1.1307(b)(3)(ii)(A).

5 RF Exposure evaluation flow chart

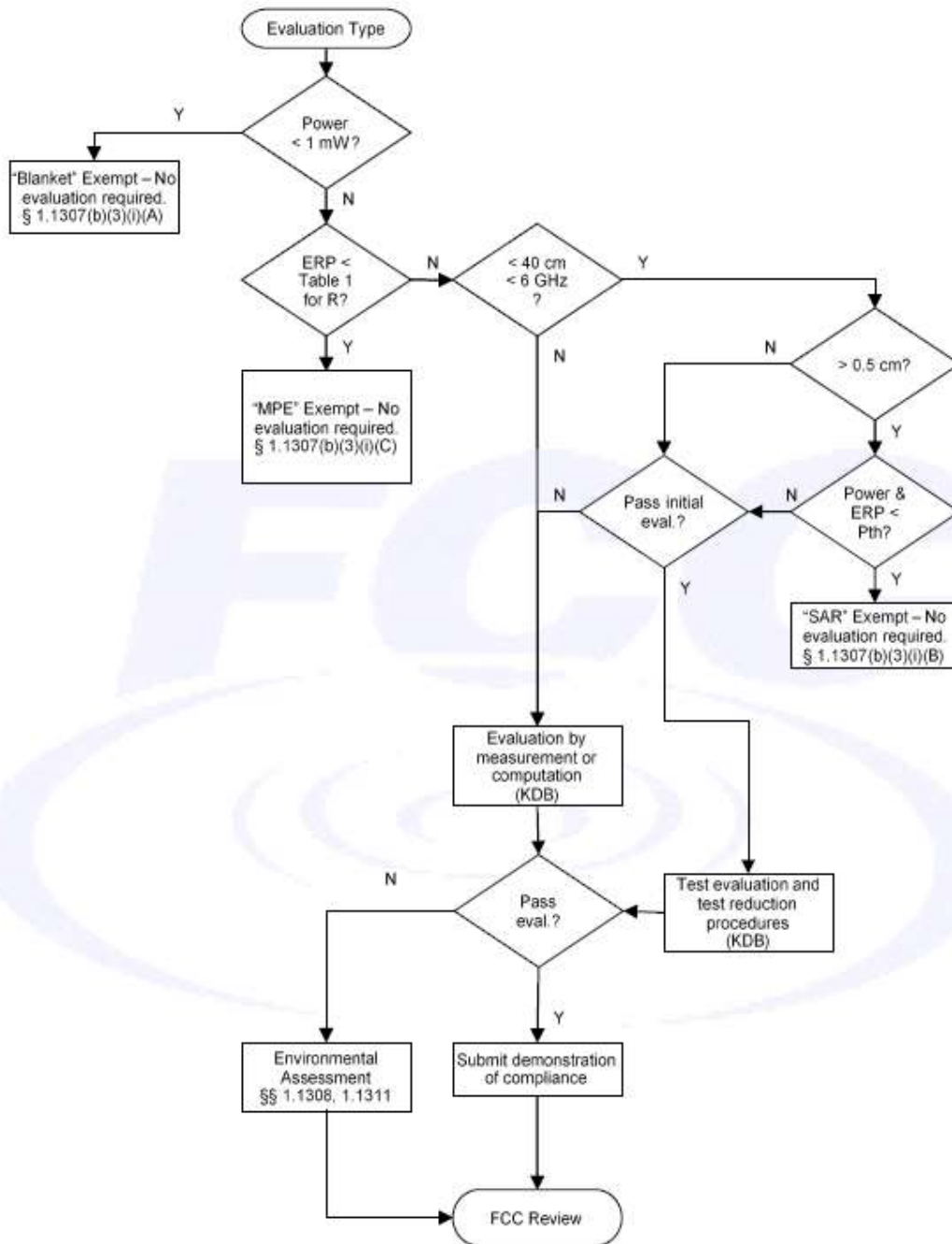


Figure A.1 – General Sequence for Determination of Procedure (exemption or evaluation) to Establish Compliance with Exposure Limits for a Single RF Source³⁹

6 ISEDC SAR test exclusions per IC RSS-102 Issue 5

SAR evaluation is required if the separation distance between the user and/or bystander and the antenna and/or radiating element of the device is less than or equal to 20 cm, except when the device operates at or below the applicable output power level (adjusted for tune-up tolerance) for the specified separation distance defined in Table 1.

Table 1: SAR evaluation – Exemption limits for routine evaluation based on frequency and separation distance

Frequency (MHz)	Exemption Limits (mW)				
	At separation distance of ≤5 mm	At separation distance of 10 mm	At separation distance of 15 mm	At separation distance of 20 mm	At separation distance of 25 mm
≤300	71 mW	101 mW	132 mW	162 mW	193 mW
450	52 mW	70 mW	88 mW	106 mW	123 mW
835	17 mW	30 mW	42 mW	55 mW	67 mW
1900	7 mW	10 mW	18 mW	34 mW	60 mW
2450	4 mW	7 mW	15 mW	30 mW	52 mW
3500	2 mW	6 mW	16 mW	32 mW	55 mW
5800	1 mW	6 mW	15 mW	27 mW	41 mW

Frequency (MHz)	Exemption Limits (mW)				
	At separation distance of 30 mm	At separation distance of 35 mm	At separation distance of 40 mm	At separation distance of 45 mm	At separation distance of ≥50 mm
≤300	223 mW	254 mW	284 mW	315 mW	345 mW
450	141 mW	159 mW	177 mW	195 mW	213 mW
835	80 mW	92 mW	105 mW	117 mW	130 mW
1900	99 mW	153 mW	225 mW	316 mW	431 mW
2450	83 mW	123 mW	173 mW	235 mW	309 mW
3500	86 mW	124 mW	170 mW	225 mW	290 mW
5800	56 mW	71 mW	85 mW	97 mW	106 mW

7 Evaluations

7.1 RF Exposure Exclusion results

FCC:

Radio	Freq-Low _[GHz]	Field Strength (dBuV/m)	EIRP _[W]	ERP _[W]	ERP _[mW]	1.1307(b)(3)(i)(A), FCC 2.1091(c)(1) Power < 1 _[mW]
SRF	0.3195	73.42	0.00000659	0.00000402	0.00402	yes

ISED:

Radio	Freq-Low [MHz]	Field Strength (dBuV/m)	EIRP _[W]	EIRP _[mW]	SAR	
					RSS-102 2.5.1 D≤20 cm (300 ≤ Freq ≤ 5800 MHz)	
					Exemption limit for Routine Evaluation	Exemption (Y/N)
SRF	319.5	73.42	0.000006594	0.00659	68.53	Yes

Conclusion:

- The maximum RF emissions from this equipment fulfills the SAR exclusion threshold limits for separation distance between the antenna and the human body less than 5 mm. SAR is not required.
- SRF radio complies with routine environmental evaluation requirements for RF exposure. Simultaneous transmission with other radios is not support.



8 Revision History

Date	Report Name	Changes to report	Prepared by
2023-07-26	EMC_QOLSY_012_23001_FCC_ISEDSAR_Exclusion	Initial Release	Art Thammanavara t
2023-07-27	EMC_QOLSY_012_23001_FCC_SAR_ISED_Exclusion_Rev1	<u>Report Revised</u> 1. Section 4.1: Updated standard 2. Section 7: Updated table.	Art Thammanavara t

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