IEC IECEE CB SCHEME

Ref. Certif. No.

JPTUV-081962

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE

CERTIFICAT D'ESSAI OC

Product Produit	Barcode Scanner
Name and address of the applicant Nom et adresse du demandeur	Honeywell International Inc Honeywell Sensing & Productivity Solutions 9680 Old Bailes Rd, Fort Mill, SC 29707, USA
Name and address of the manufacturer Nom et adresse du fabricant	Honeywell International Inc Honeywell Sensing & Productivity Solutions 9680 Old Bailes Rd, Fort Mill, SC 29707, USA
Name and address of the factory Nom et adresse de l'usine	Metro (Suzhou) Technologies Co., Ltd. No. 221 Xinghai Street China-Singapore Suzhou Ind. Park, Suzhou, Jiangsu Province 215021, P. R. China
Ratings and principal characteristics Valeurs nominales et charactéristiques principales	1) DC 5.0V, 450mA; Class III 2) DC 3.75V (Li-ion battery operated); Class III Class 2 laser product
Trademark (if any) Marque de fabrique (si elle existe)	Honeywell
Type of Manufacturer's Testing Laboratories used Type de programme du laboratoire d'essais constructeur	N/A
Model / Type Ref. Ref. de type	1) 1980i 2) 1981i
Additional information (if necessary may also be reported on page 2) Les informations complémentaires (si nécessaire, peuvent être indiqués sur la 2ème page)	Also investigated to EN 60825-1:2014 (3rd Edition). Only hazards resulting from laser radiation have been addressed. For model differences, refer to the test report.
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60825-1:2014 See Test Report for National Differences
As shown in the Test Report Ref. No. which forms part of this Certificate Comme indiqué dans le Rapport d'essais numéro de référence qui constitue partie de ce Certificat	50089797 001

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme National de Certification

TÜVRheinland®

TÜV Rheinland Japan Ltd.
Global Technology Assessment Center
4-25-2 Kita-Yamata, Tsuzuki-ku
Yokohama 224-0021 Japan
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Web: www.tuv.com

Date: 26.07.2017

Signature: Mark Chen

TÜV Rheinland (China) Ltd.
Member of TÜV Rheinland Group

TÜVRheinland®
Precisely Right.

Honeywell International Inc
Honeywell Sensing & Productivity

Date : 26.07.2017
Our ref. : SC ZJ
Your ref.: 154260035

Solutions
9680 Old Bailes Rd
Fort Mill, SC 29707
USA

Ref : CB Certificate Japan

Type of Equipment : Barcode Scanner
Model Designation : See Certificate
Certificate No. : JPTUV-081962
Report No. : 50089797 001

Dear Ladies and Gentlemen,

Thank you very much for your interest in our services.

Please find enclosed your certification documents.

We appreciate your support and would like to offer our assistance in the approval of your future products through our extensive range of technical services.

Please feel free to contact us whatever your requirements may be.

With kind regards,

Certification Body

Mark Chen

CC: Honeywell International Inc

Enclosure

TÜV Rheinland (China) Ltd.
莱茵检测认证服务（中国）有限公司
Unit 707, AVIC Bldg., No. 10B, Central Road, East 3rd Ring Road, Chaoyang District, Beijing, 100022, P.R.China
北京市朝阳区东三环中路乙10号艾维克大厦707室
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Test Report issued under the responsibility of:

TÜVRheinland®

TEST REPORT
IEC 60825-1
Safety of laser products -
Part 1: Equipment classification and requirements

Report Number. ..... :	50089797 001
Date of issue ..... :	2017.07.25
Total number of pages ..... :	16
Name of Testing Laboratory preparing the Report……:	TÜV Rheinland Shanghai Co., Ltd.
Applicant's name ..... :	Honeywell International Inc Honeywell Sensing & Productivity Solutions
Address ..... :	9680 Old Bailes Rd, Fort Mill, SC 29707, USA
Test specification:	
Standard ..... :	IEC 60825-1:2014 (Third Edition)
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60825_1E
Test Report Form(s) Originator .... :	ÖVE
Master TRF ..... :	Dated 2014-07

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test item description ..... :	Barcode Scanner
Trade Mark ..... :	Honeywell
Manufacturer ..... :	Honeywell International Inc Honeywell Sensing & Productivity Solutions
Model/Type reference ..... :	1980i, 1981i
Ratings ..... :	1980i: DC 5.0V, 450mA; 1981i: DC 3.75V(Li-ion battery operated); Class 2 laser product

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
☒	**TÜV Rheinland Shanghai Co. Ltd**	TÜV Rheinland Shanghai Co., Ltd.	
Testing location/ address.....:		No.177, 178, Lane 777, West Guangzhong Road, Jing'an District, Shanghai, China	
☐	**Associated CB Testing Laboratory:**	N/A	
Testing location/ address.....:		N/A	
Tested by (name, function, signature).....:		Bright Guo / Cherry Sun	
Approved by (name, function, signature)...:		Stanley Liu	
☐	**Testing procedure: TMP/CTF Stage 1:**	N/A	
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: WMT/CTF Stage 2:**	N/A	
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Witnessed by (name, function, signature) .:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: SMT/CTF Stage 3 or 4:**	N/A	
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Witnessed by (name, function, signature) .:			
Approved by (name, function, signature)...:			
Supervised by (name, function, signature) :			

List of Attachments (including a total number of pages in each attachment):

ATTACHMENT 1 - Photo document (6 pages)

Summary of testing:

The product has been tested according to standard IEC/EN 60825-1:2014. The tests have been performed according to the following sequence:

Determine wavelength λ.

Determine angular subtense α of apparent source.

Determine measurement conditions (distance, aperture stop, time base, AEL)

Measure radiant power from laser diode under normal condition.

Measure radiant power from laser diode under single fault condition.

The product is classified as Class 2 laser product according to both IEC/EN 60825-1:2014 and IEC/EN 60825-1:2007.

Tests performed (name of test and test clause):	**Testing location:**
5.4 Measurement geometry.	TÜV Rheinland Shanghai Co., Ltd. No.177, 178, Lane 777, West Guangzhong Road, Jing'an District, Shanghai, China

Summary of compliance with National Differences:

N/A

☒ **The product fulfils the requirements of EN 60825-1:2014.**

Copy of marking plate:

Trade Mark on The Product

Model: 1980i

Model: 1981i

Laser Label

Test item particulars.....:	
Classification of installation and use.....:	Class III
Supply Connection.....:	DC supply
.....:	
Possible test case verdicts:	
- test case does not apply to the test object.....:	N/A
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement.....:	F (Fail)
Testing.....:	
Date of receipt of test item .....:	2017-07-04
Date (s) of performance of tests.....:	2017-07-04 to 2017-07-07

General remarks:

"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

Throughout this report a ☐ comma / ☒ point is used as the decimal separator.

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... :	☐ **Yes** ☒ **Not applicable**

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies) .....:	Metro (Suzhou) Technologies Co., Ltd. No. 221 Xinghai Street China-Singapore Suzhou Ind. Park, Suzhou, Jiangsu Province 215021, P. R. China

General product information:

The Granit™ 1980i industrial scanner features full-range area-imaging technology capable of reading both 1D and 2D barcodes. The Granit™ 1981i wireless industrial scanner features full-range area-imaging technology capable of reading both 1D and 2D barcodes.

Model difference:

Model name	Parameter	LED Type
1980i	DC 5,0V, 450mA	LR G6SP-CADB-1-1
1981i	DC 3,75V(Li-ion battery operated)	

Note: The difference between models 1980i and 1981i are rated voltage and power supply mode. The test is based on model 1981i.

An integrated laser pointer is used for aiming purpose while LED light is used for scanning the bar code.

The Barcode Scanner is class III equipment, which is only SELV circuit inside EUT, connected and supplied by USB port or battery.

The Laser diode emission power is evaluated according to IEC/EN60825-1 in complying with Class 2 Laser product, the related marking and warning labels are attached on labels and User Manual.

The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 50°C.

The product is designed to comply with "Class 2 Laser Product" requirement.

IEC 60825-1			
Clause	Requirement + Test	Result - Remark	Verdict
4	**CLASSIFICATION PRINCIPLES**		
4.3	Classification rules		---
4.3 a	Radiation of a single wavelength	Single wavelength used.	P
4.3 b	Radiation of multiple wavelengths		N/A
	1) Laser product emits at two or more wavelengths shown as additive in Table 1		N/A
	2) Laser product emits at two or more wavelengths not shown as additive in Table 1		N/A
4.3 c	Radiation from extended sources (see 5.4.3)	Not extended source.	N/A
4.3 d	Non-uniform, non-circular or multiple apparent source		N/A
4.3 e	Time bases		---
	1) 0,25 s	Select for class 2 evaluation.	P
	2) 100 s	Select for class 1 evaluation.	P
	3) 30000 s		N/A
4.3 f	Repetitively pulsed or modulated lasers	Continuous radiation.	N/A
	1) Any single pulse		N/A
	2) Average power for pulse trains		N/A
	3) Pulse duration $t \leq T_i$ .....: Number of pulses N and C_5.....:		N/A
	3) Pulse duration $t > T_i$.....: Number of pulses N and C_5 .....:		N/A
4.4	Laser products designed to function as conventional lamps.	Not such laser product.	N/A
	measured at 200 mm distance from closest point of human access (> 5 mrad).		N/A
	Un-weighted radiance L measured at 200 mm distance (comparison with L_T = 1 $MWm^{-2}sr^{-1}$/) under reasonably foreseeable single fault conditions.		N/A
	Evaluation of emission according to IEC 62471 series (optional): Standard applied (IEC 62471 series)……,…..….: Risk Group……..….: Labelling…… ...: Classification of product based on accessible laser radiation (if no laser radiation accessible: Class 1).		N/A

IEC 60825-1			
Clause	Requirement + Test	Result - Remark	Verdict
5	**DETERMINATION OF THE ACCESSIBLE EMISSION LEVEL and PRODUCT CLASSIFICATION**		
5.1	Tests		---
	Compliance under reasonably foreseeable single fault conditions.	The built-in laser engine had been certified separately. Fault condition test considered in the laser engine test report.	P
5.3	Determination of the class of the laser product ... : For Class 1C: vertical safety standard applied with requirements for Class 1C.		---
5.4	Measurement geometry		---
5.4.1	General	The built-in laser engine had been certified separately.	---
5.4.2	Default (simplified) evaluation	Refer to laser engine CB test report. The laser engine is classified as Class 2 laser product according to both IEC/EN 60825-1:2014 and IEC/EN 60825-1:2007.	N/A
	Conditions applied ..... :		N/A
	Aperture diameter ..... :		N/A
	Reference point :..... :		N/A
	Measurement distance ..... : (for each condition)		N/A
5.4.3	Evaluation condition for extended sources		N/A
	Conditions applied ..... :		N/A
	Most restrictive position ..... : (distance from reference point)		N/A
	Angular subtense of the apparent source α and C_6: (for each condition)		N/A
5.4.3 a	Aperture diameters (for each condition). ..... :		N/A
5.4.3 b	Angle of acceptance (for each condition)……..:		N/A

IEC 60825-1			
Clause	Requirement + Test	Result - Remark	Verdict
6	**ENGINEERING SPECIFICATIONS** **(Product is a component, Clause 6 should be considered in final system)**		**P**
6.2	Protective housing		---
6.2.1	General		---
	Protective housing prevents access to energy levels in excess of the AEL for Class 1.		P
	Protective housing prevents access to energy levels equivalent to Class 4 and withstands exposures under reasonably foreseeable single fault conditions.		N/A
	Maintenance of Class 1, 1C, 1M, 2, 2M, or 3R (access to emissions of Class 3B or 4 is prevented).	Class 2 laser product.	P
	Maintenance of Class 3B product (access to emission of Class 4 is prevented).		N/A
6.2.2	Service		P
6.2.3	Removable laser system (laser system complies with requirements of Clauses 6 and 7).	Not removable laser system.	N/A
6.3	Access panels and safety interlocks		---
6.3.1	Panel is intended to be removed during operation (or maintenance) and would give access to higher energy levels (see Table 13).		N/A
	Accessible emission (after removal of the panel) corresponds to product Class (designated by “X” in Table 13)		N/A
	Emission through the opening if interlocked panel of Class 1, 1C, 1M, 2, or 2M is removed (Emission < AEL of Class 1M or 2M).		N/A
	Emission through the opening if interlocked panel of Class 3R, 3B, or 4 is removed (Emission < AEL of Class 3R).		N/A
	Requirements regarding reasonably foreseeable single fault condition.		N/A
6.3.2	Override mechanism	No such device provided.	N/A
	Behaviour of override in operation when the panel is replaced.		N/A
	Visible or audible warning for override mode.		N/A
6.4	Remote interlock connector		N/A
6.5	Manual reset		N/A
6.6	Key control		N/A
6.7	Laser radiation emission warning		---

IEC 60825-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.7.1	Laser product is a 3R (λ<400 nm; λ>700 nm), 1C, 3B or 4 laser systems.		N/A
6.7.2	Audible or visible warning.		N/A
	Warning is failsafe or redundant.		N/A
	Viewing of the visible warning does not require exposure to emissions > AEL for Class 1M and 2M.		N/A
6.7.3	Operational control and laser aperture are provided with a warning device when they are separated more than 2 m from warning device.		N/A
6.7.4	Visible indication of output aperture if laser emission may be distributed through more than one output.		N/A
6.7.5	Switch for handheld Class 3R device must be depressed for emission (in lieu of emission indicator).		N/A
6.8	Beam stop or attenuator	No beam stop or attenuation.	N/A
6.9	Controls		N/A
6.10	Viewing optics	No viewing optics.	N/A
	a) Human access to laser radiation in excess of Class 1M prevented when the shutter is opened or attenuation varied.		N/A
	b) Opening of the shutter or variation of the attenuation prevented when exposure to laser radiation in excess of Class 1M is possible.		N/A
6.11	Scanning safeguard		N/A
6.12	Safeguard for Class 1C products		N/A
	a) Human access to laser radiation in excess of AEL for Class 1 measured under Condition 3 is prevented.		N/A
	b) Human access to laser radiation in excess of AEL for Class 3B measured through 3,5 mm aperture at 5 mm distance from applicator is prevented.		N/A
6.13	Walk-in access		N/A
	a) Means provided so that any person inside the housing can prevent activation of Class 3B or 4 laser hazards.		N/A
	b) A warning device provides adequate warning of emission to any person within the housing.		N/A

IEC 60825-1			
Clause	Requirement + Test	Result - Remark	Verdict
	c) Where “walk-in” access during operation is intended or reasonably foreseeable, emission of laser radiation that is equivalent to Class 3B or 4 while someone is present inside the enclosure of Class 1, Class 2 or Class 3R product is prevented by engineering means.		N/A
6.14	Environmental conditions		---
	- climatic conditions	Considered, no climate conditions change can lead to higher laser radiation.	P
	- vibration and shock	Considered, no environmental conditions change can lead to higher laser radiation.	P
6.15	Protection against other hazards		---
6.15.1	Non-optical hazards (product safety standard)	See IEC 60950-1 test report: 15077054 001, 15077054 002, 15077054 003	P
	- electrical hazards;		P
	- excessive temperature;		P
	- spread of fire from the equipment;		P
	- sound and ultrasonics;		P
	- harmful substances;		P
	- explosion;		P
6.15.2	Collateral radiation	No collateral radiation	N/A
6.16	Power limiting circuit		N/A

7	**LABELLING**		
7.1	General		---
	Labels durable, permanently affixed		P
	Labels clearly visible		P
	Reading of labels is possible without exposure to laser radiation in excess of AEL for Class 1.	Class 2 laser product.	P
	Colour combination		P
	Labelling impractical due to the size or design of the product.		N/A
	Warning label – Hazard symbol (Figure 3)	Class 2 laser product.	P

IEC 60825-1			
Clause	Requirement + Test	Result - Remark	Verdict
7.2 - 7.7	Text on explanatory label or pictogram (laser class, warning text)	Class 2 laser product. See copy of marking plate on page 5.	P
7.8	Aperture label		N/A
7.9	Radiation output and standards information	See copy of marking plate.	---
	Max output of laser radiation .....:	Max. 1mW	P
	Pulse duration .....:	Continuous radiation.	N/A
	Emitted wavelength(s) .....:	Measured: 655 nm; Declared: 630-680 nm	P
	Name and publication date of the standard .....:	IEC 60825-1: 2014. Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No.50, dated June 24, 2007.	P
7.10	Labels for access panels		---
7.10.1 a) – f)	Labels for panels - warning wording used .....:		N/A
7.10.2	Labels for safety interlocked panels - Warning wording used .....:		N/A
7.11	Warning for invisible laser radiation .....:		N/A
7.12	Warning for visible laser radiation .....:		N/A
7.13	Warning for potential hazard to the skin or anterior parts of the eye - warning wording used .....:		N/A

8	OTHER INFORMATIONAL REQUIREMENTS		
8.1	Information for the user		---
	a) adequate instructions for assembly, maintenance and safe use and description of the classification limitations, if appropriate.	Adequate instruction is provided in user manual and product label.	P
	b) additional warning for Class 1M and 2M		N/A
	c) laser beam parameters for radiation above the AEL of Class 1		---
	• Wavelength .....:	Measured: 655 nm; Declared: 630-680 nm	P
	• Beam divergence .....:	Not specified	N/A
	• Pulse pattern .....: (pulse duration, repetition rate, …)	Continuous radiation.	N/A
	• Maximum power or energy output .....:	Max. 1mW	P

IEC 60825-1			
Clause	Requirement + Test	Result - Remark	Verdict
	d) safety instruction for embedded laser products and other incorporated laser products.		N/A
	e) MPE and NOHD for Class 3B and 4 laser products; For collimated beam Class 1M and 2M lasers the extended NOHD (ENOHD).		N/A
	f) information for the selection of eye protection.		N/A
	g) reproduction of all required labels and warnings.		N/A
	h) location of laser apertures		N/A
	i) list of controls, adjustments of procedures for operation and maintenance - and warning statement.		N/A
	j) information (compatibility requirements) about laser energy source if not incorporated.		N/A
	k) additional warning for Class 1, 1M, 2, 2M, and 3R regarding skin or corneal burns.		N/A
	l) Information for Class 1C products (e.g. warning that repeated application may pose a risk).		N/A
8.2	Purchasing and service information	Provided in the user manual.	P
	a) safety classification of each laser product stated in all descriptive material (e.g. brochures).	Provided in the user manual.	P
	b) adequate instructions for servicing available: • warnings and precautions regarding exposure of laser emission above Class 1 • maintenance schedule • list of controls and procedures that could increase accessible emissions • description of displaceable parts • protective procedures for service personnel • reproduction of labels and hazard warnings	Provided in the user manual.	P

9	**ADDITIONAL REQUIREMENTS FOR SPECIFIC LASER PRODUCTS**		
9.1	Applicable other parts of the standard series IEC 60825		---
	IEC 60825-2 (Safety of optical communication systems)		N/A
	IEC 60825-4 (Laser guards)		N/A
	IEC 60825-12 (Safety of free space optical communication systems used for transmission of information)		N/A

IEC 60825-1			
Clause	Requirement + Test	Result - Remark	Verdict
9.2	Medical laser products: Class 3B and Class 4 medical laser products comply with IEC 60601-2-22		N/A
9.3	Laser processing machines: Comply with IEC/ISO 11553 series.		N/A
9.4	Electric toys: Comply with IEC 62115		N/A
9.5	Consumer electronic products: Comply with IEC 60950 (IT-equipment) or IEC 60065 (AV equipment)		N/A

	TABLE: Critical components information				--
Object / part No.	**Manufacturer/ trademark**	**Type / model**	**Technical data**	**Standard**	**Mark(s) of conformity[1)]**
Laser Engine	Honeywell	EX20, EX25	650nm, Class 2 laser product	IEC 60825-1:2014	CB by UL US-30013-UL
Supplementary information:					

Table1: List of test equipment used

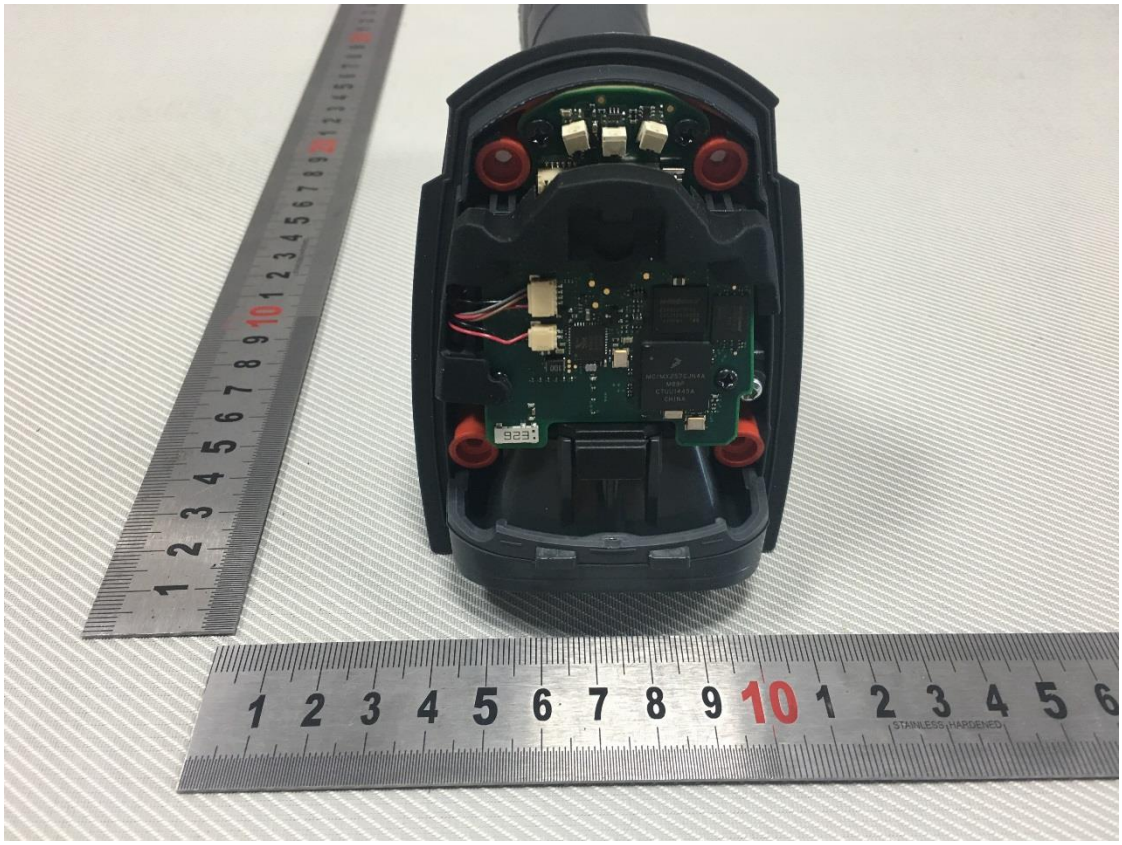
Clause	Measurement / testing	Testing / measuring equipment / material used	Range used	Next calibration date
5	Wavelength	Ocean Optics / HR4000-CG-UV-NIR	200-1100nm	Dec., 2017
5	Power sensor	Newport 918D-UV	Auto	Sep., 2017

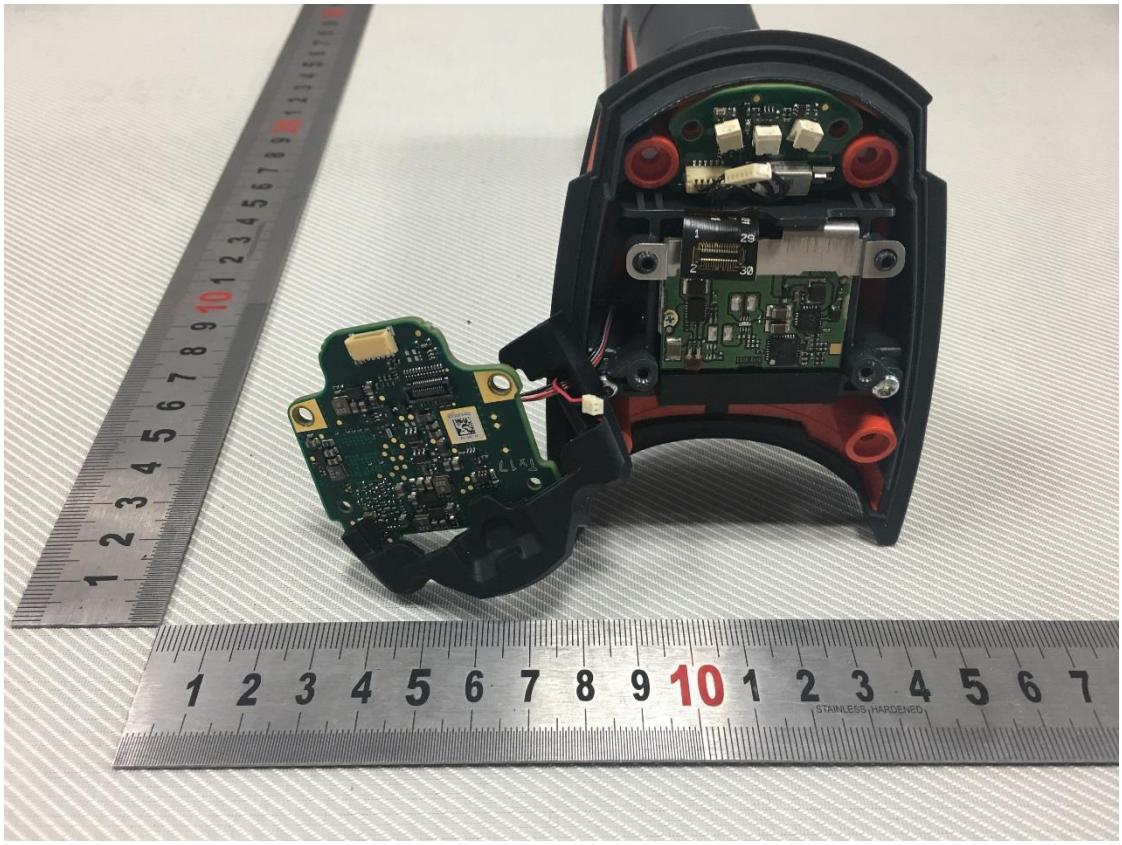
-- End of report --

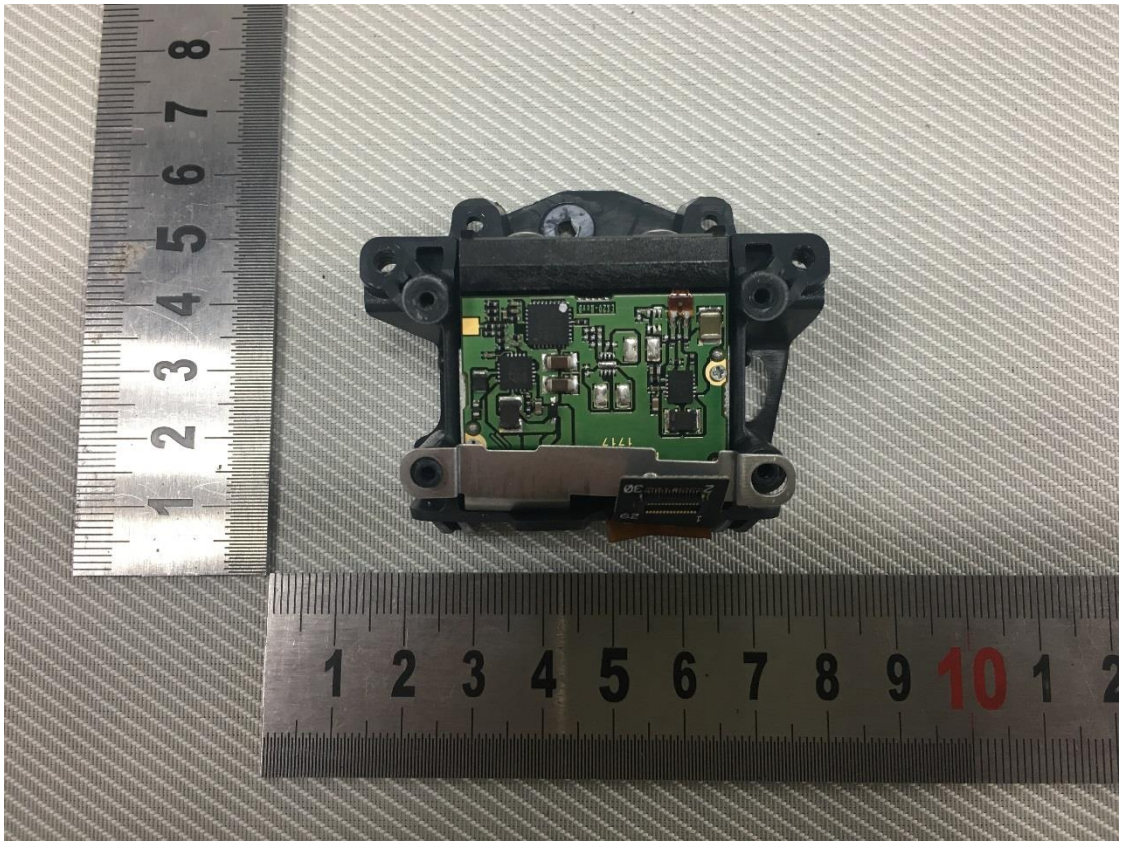
ATTACHMENT 1 Photo Documentation

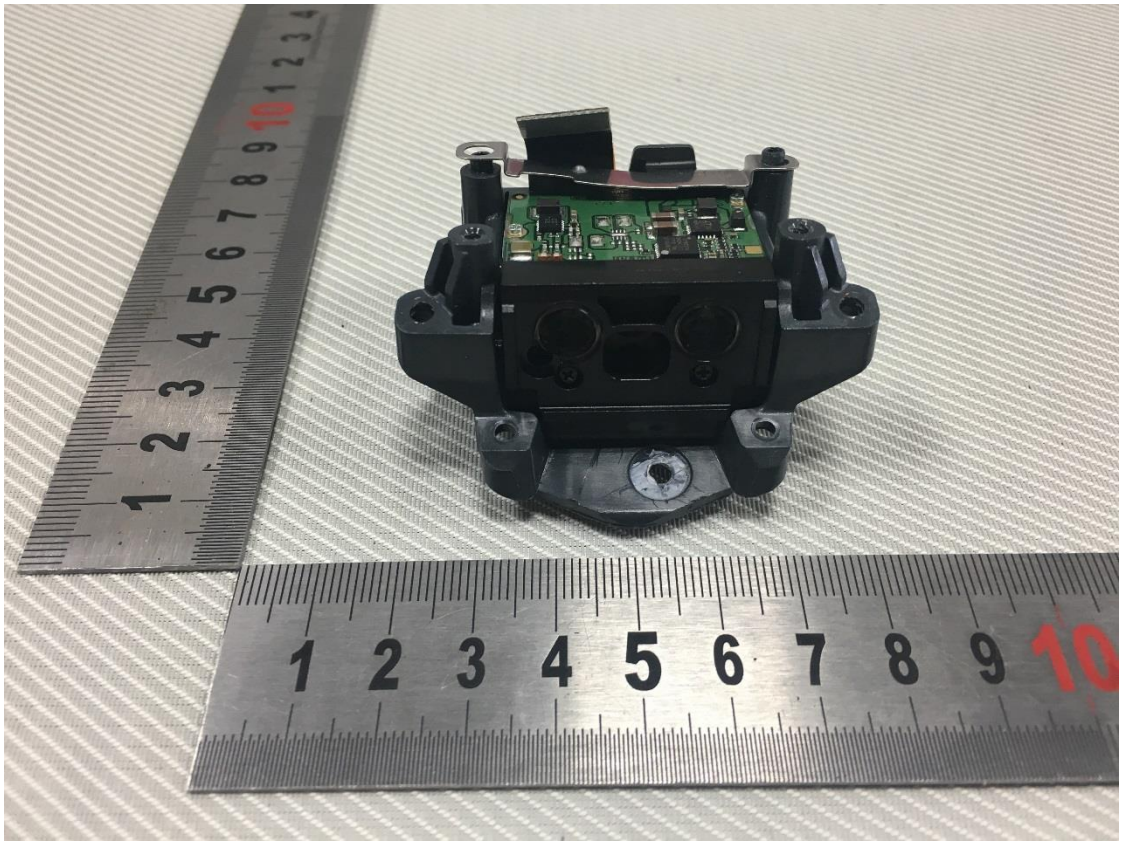
Report No.: 50089797 001

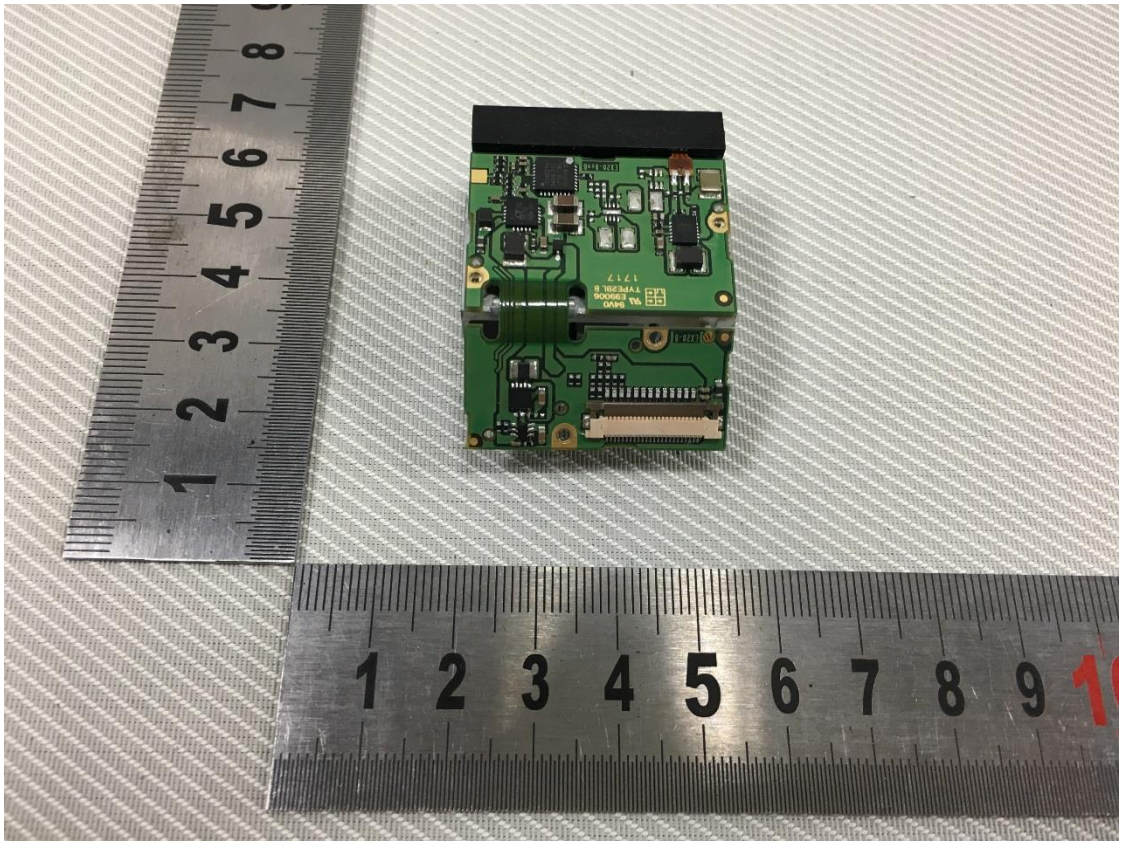
Type Designation: See main test report

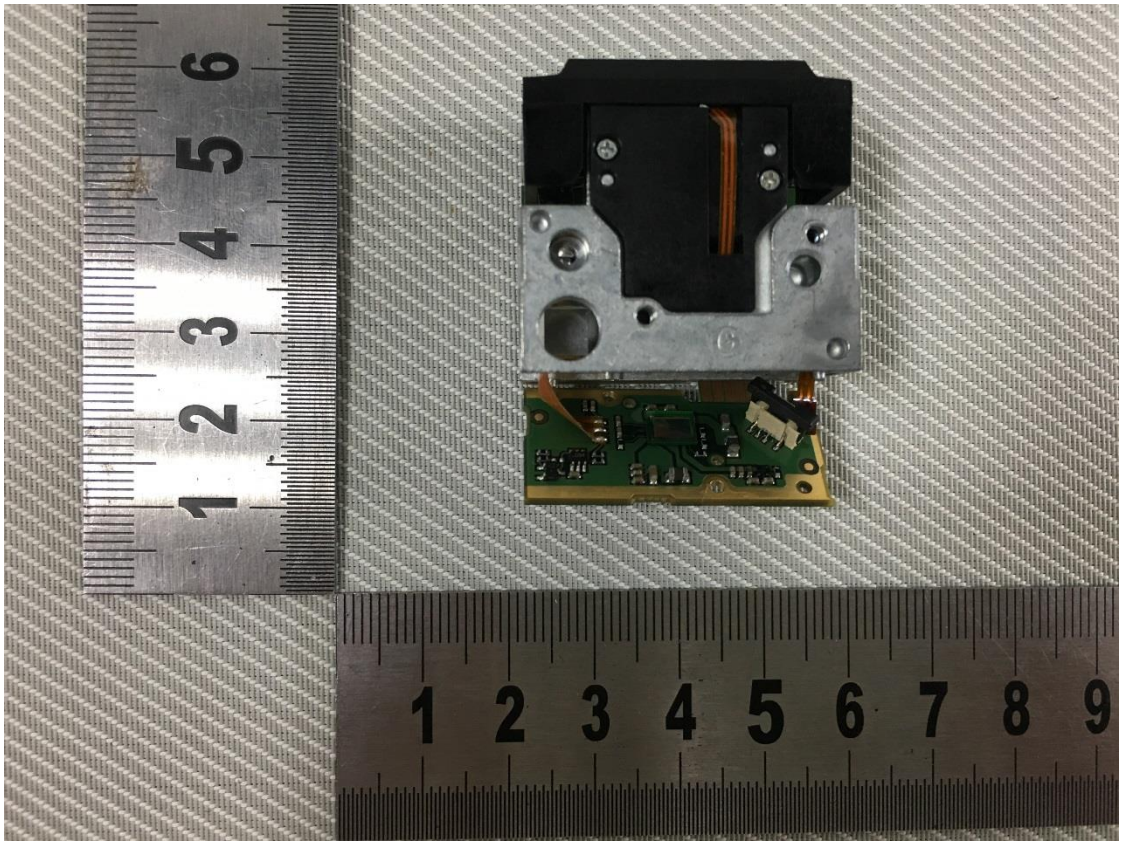












-- End of Attachment 1 --