Prüfbericht-Nr.: *Test Report No.:*	60328072-001	**Auftrags-Nr.:** *Order No.:*	23870248
Kunden Referenz-Nr.: Client Reference No.:	-	**Auftragsdatum** *Order date:*	2019-10-02
Auftraggeber: *Client:*	Sensative AB Mobilvägen 10 Se-223 62 Lund Sweden	Lars Jonsson lars.jonsson@sensative.com +46 (0) 70 302 3767	
Prüfgegenstand: *Test item:*	Strip Sensor		
Bezeichnung / Typ-Nr.: *Identification / Type No.:*	FCC ID: 2AHIR-003 (Models 1100022/1101022/1102022/1103022/1104022/1105022/1106022)		
Auftrags-Inhalt: *Order content:*	RF Exposure Evaluation		
Prüfgrundlage: *Test specification:*	FCC 47 CFR §2.1091 IEEE Std. C95.1:2005		
Wareneingangsdatum: *Date of receipt:*	N/A		
Prüfmuster-Nr.: *Test sample No.:*	N/A		
Prüfzeitraum: *Testing period:*	N/A		
Ort der Prüfung: *Place of testing:*	Lund, Sweden		
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland Sweden		
Prüfergebnis: *Test results:*	See detail in report		

Geprüft von *Tested by:*	Niall Forrester Technical Expert	**Kontrolliert von** *Reviewed by:*	Anders Nordlöf Deputy Lab manager
2019-12-19		2019-12-20	
Datum *Date*	**Name / Stellung** *Name / Position* **Unterschrift** *Signature*	**Datum** *Date*	**Name / Stellung** *Name / Position* **Unterschrift** *Signature*

Sontiges / *Other:*

Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.
This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test or accreditation mark/logo

Revisions
Revisions

Revision Revision	**Datum** Date	**Anmerkung** Remark	**Verfasser** Author
001	2019-12-19	First release	Niall Forrester

Note: Latest revision report will replace all previous reports

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PRODUCT INFORMATION

1.1 Equipment under Test (EUT) description

Model name:	Strip Sensor
Manufacturer:	Sensative AB
Model number:	1100022/1101022/1102022/1103022/1104022/1105022/1106022
FCC ID:	FCC ID: 2AHIR-003
Description:	Strips by Sensative is in its basic version a magnetic sensor designed to monitor and protect windows, doors and other valuables.

1.2 Wireless Technologies and Frequency Bands supported by the DUT

Technology	Band	Frequency Range (Tx)	Evaluation Performed
Z-Wave	908MHz	908.20 – 908.60 MHz	YES
Z-Wave	916MHz	915.85 – 916.15 MHz	YES

The device does not support any simultaneous transmission configurations

1.3 Conducted Power and Antenna Gain

Technology	Band	Maximum Conducted Output Power (dBm)	Antenna Gain (dBi)
Z-Wave	908MHz	1.00	2.30
Z-Wave	916MHz	1.00	2.30

Maximum Power and Antenna Gain are based on details supplied by the device manufacturer.

EVALUATION

2.1 Summary

At 20cm, the Strip Sensor device(s) with FCC ID: 2AHIR-003 is compliant with the “General Population / Uncontrolled” requirements set out in FCC 47 CFR §1.1310 Table 1 (B) for all supported combinations of wireless technologies.

2.2 Limits

47 CFR § 1.1310 - Radiofrequency radiation exposure limits

Table 1B
Limits for Maximum Permissible Exposure (MPE)
(Limits for general Population / Uncontrolled Exposure)

Frequency Range (MHz)	Electric Field strength (V/m)	Magnetic Field strength (A/m)	Power Density (mW/cm^2)	Averaging Time (minutes)
0.3 - 1.34	614	1.63	*100	30
1.34 - 30	824/f	2-19/f	$*180/f^2$	30
30 - 300	27.5	0.073	0.2	30
300 - 1500	-	-	f/1500	30
1500 - 10000	-	-	1.0	30

Notes:
1. f = frequency in MHz
2. * = Plane-wave equivalent power density

2.3 Stand-alone Calculations

The Power Density at 20cm separation distance has been calculated for each of the transmitter technologies supported by the device according to a re-arrangement of the Friis formula, as below:

$$S = \frac{P * G}{4\pi * r^2}$$

Where:

- "S" is power density in mW/cm²
- "P" is maximum avg. conducted power (incl. tolerances) in mW according to data from the manufacturer
- "G" is the peak antenna gain (numerical) according to data from the manufacturer
- "r" is the separation distance (20 cm)

Power Density (S) at 20cm Distance for Each Transmitter

Technology	Band	Frequency (MHz)*	Power (dBm)	P (mW)	Gain (dBi)	G (Num.)	r (cm)	S (mW/cm^2)	Limit** (mW/cm^2)
Z-Wave	908MHz	908.2	1.00	1.26	2.30	1.70	20	0.004	0.605
Z-Wave	916MHz	915.85	1.00	1.26	2.30	1.70	20	0.004	0.611

*The lowest frequency in each band has been chosen, to give the most conservative limit

**The limits listed are from FCC 47 CFR §1.1310 Table 1 (B): "Limits for General Population/Uncontrolled"

From 300MHz to 1500MHz, the limit is f/1500 mW/cm^2 where "f" is the frequency in MHz