

Supplementary information for EU Devices in the LoRaWAN® Showcase catalogue. Version 1.0

### Version of Questionnaire form from the Customer/ Device Manufacturer

Version	Date	Author	Update
1.0	28/01/2022	Rohit Gupta	Initial release from manufacture

### Supplementary Information on certified device

1 Supplementary information	
1.1 Manufacturer or Brand name	Abeeway
1.2 Website	<a href="http://www.abeeway.com">www.abeeway.com</a>
1.3 Sales / Marketing contact person, email:	pavel.zaitsau@actility.com
1.4 Technical contact person, email:	Rohit.gupta@actility.com
1.5 Commercial Product name	Abeeway Smart Badge
1.6 Product code used when ordering / article number	DEABE3XX
1.7 Product Version : Hardware version: Firmware version:	V1 ABW004E1.x AT 2.2
1.8 In what countries is the product available	EU, AS, US
1.9 What date was / is the market introduction for this device / product?	05/2021
1.10 Is the device already working on a public LoRaWAN network. If yes specify at which public operator, country and number of deployed devices on that network:	<input checked="" type="checkbox"/> Yes: <input type="checkbox"/> No Swisscom (200 trackers)
1.11 What functionality does the device provide and which sensor(s) does it contain?	Use case: Tracking  Short behavior description: The Abeeway Smart Badge is a portable multi-mode tracker in ID card format with embedded sensors combining multiconstellation GNSS, Low-power GPS, Wi-Fi Sniffer, BLE and LoRaWAN TDoA geolocation technologies, supporting seamless outdoor and indoor geolocation.  This device is ideal for contact back-tracing, zone notification and monitoring of workforce safety and security. Simple to use, a single button gives you access to the numerous functionalities you may personalize for your needs, e.g. as a Panic/SOS Button. A local zoning feature is able to signal danger zones with a 96 dBa buzzer. It has a robust, industrialgrade magnetic connector for recharging

		the battery, and optional multi-slot charging/upgrade dock.
1.12 Accuracy & resolution for every sensor or measurement made by the device		
Name:		GPS
sensor accuracy (incl. unit): +/-		10-20 m
resolution (incl. unit):		1m
measurement parameter:		GPS location
measurement range		NA
Name:		WiFi BSSID scan reports
sensor accuracy (incl. unit): +/-		NA
resolution (incl. unit):		NA
measurement parameter:		WiFi BSSID
measurement range		1-20
Name:		BLE BSSID
sensor accuracy (incl. unit): +/-		NA
resolution (incl. unit):		NA
measurement parameter:		BLE BSSID scan reports
measurement range		1-4
Name:		Temperature
sensor accuracy (incl. unit): +/-		1 °C
resolution (incl. unit):		0.5 °C
measurement parameter:		Temperature
measurement range		0 – 55 °C
Name:		
sensor accuracy (incl. unit): +/-		
resolution (incl. unit):		
measurement parameter:		
measurement range		
1.13 Uplinks are:	Periodic:	<input checked="" type="checkbox"/>
	Period:	5 minutes
	Explanation:	Reporting of GPS/WiFi/BLE locations
	Keep alive message period:	10 minutes
	Event triggered how:	When the location is acquired from GPS/WiFi/BLE
1.14 Parameter configuration of device (e.g. transmission or measurement interval, threshold levels, etc.)		<input checked="" type="checkbox"/> Remotely: <input checked="" type="checkbox"/> Over-the-air with LoRaWAN data downlinks <input type="checkbox"/> Specify if other:  <input type="checkbox"/> Locally: <input checked="" type="checkbox"/> Via CLI: specify type of connector: Magnetic USB connector <input type="checkbox"/> Via NFC:  <input checked="" type="checkbox"/> Specify if other: Using Abeeway mobile App over BLE
1.15 Does the application server send downlinks to the devices?		<input checked="" type="checkbox"/> Yes: (why/how often/typical size) Downlinks are sent to request a position. It is done on demand by the application <input type="checkbox"/> No

<p>1.16 Operating temperature of device - x °C to + x °C</p>	<p>Minimum -10 °C Maximum 55 °C</p>
<p>1.17 Is the payload structure available for decoding?</p>	<p><input checked="" type="checkbox"/> Yes: <input type="checkbox"/> No Please attach the payload structure</p> <pre> "message": {   "messageType": "HEARTBEAT",   "trackingMode": "STAND_BY",   "batteryLevel": 54,   "batteryStatus": "OPERATING",   "ackToken": 14,   "firmwareVersion": "1.9.195",   "resetCause": 1,   "periodicPosition": false,   "temperatureMeasure": 22.3,   "sosFlag": 0,   "appState": 0,   "dynamicMotionState": "STATIC",   "onDemand": false,   "deviceConfiguration": {     "mode": "STAND_BY"   },   "payload": "05003683e0010109c3" },                     </pre>
<p>1.18 Is there a decode-API available</p>	<p><input checked="" type="checkbox"/> Yes: <input type="checkbox"/> No Please attach the API documentation. Please follow the link below: <a href="#">Abeeway Asset Tracker Driver</a></p>
<p>1.19 Is the firmware upgradeable and how?</p>	<p><input checked="" type="checkbox"/> Yes: (how) Over USB port connected to PC Over BLE using Abeeway Mobile App</p>
<p>1.20 How can the device be reset to factory default settings?</p>	<p>LoRaWAN Downlinks Via CLI over USB port Using Abeeway mobile app over BLE</p>
<p>1.21 How can the device be forced to re-initiate the join procedure?</p>	<p>With button sequence Using Abeeway Mobile app Using CLI over USB port connected to PC</p>
<p>1.22 Product certifications (IP rating, ATEX, ...)</p>	<p>1. IP rating: IP 65 2. ATEX compliance: ATEX Zone II Other:</p>
<p>1.23 Which regulatory certifications are available (RED, CE, EMC)?</p>	<p><input checked="" type="checkbox"/> RED <input checked="" type="checkbox"/> CE <input checked="" type="checkbox"/> EMC Attach proof of certification to the mail in which this document is sent to a public operator</p>
<p>1.24 Power Supply</p>	<p><input type="checkbox"/> External power supply: connection: voltage: amperage:</p> <p><input checked="" type="checkbox"/> Internal battery: battery type: Lithium Polymer</p>

	<p>chemical composition: Lithium/Graphite/Copper/Aluminium Battery self-discharge (%/year):5% Battery shelf life: 10 years (device must be recharged at least once a year) capacity: 1.3Ah weight: 25g rechargeable: <input checked="" type="checkbox"/> Yes</p>
<p>1.25 Powering device on and off How is the device turned ON ? How is the device turned OFF ?</p>	<p>Holding the button for more than 4 seconds Holding the button for more than 4 seconds</p>
<p>1.26 Dimensions of device (Length x width x height)</p>	<p>9 x 6.5 x 1.1 cm</p>
<p>1.27 Weight of full device</p>	<p>64g</p>
<p>1.28 Mounting of device 1. How to mount? 2. How to mount for best antenna propagation</p>	<p>The device should be placed with antennas away from metal or conductive environment Orient the LoRa/GPS antenna to the sky to be in reach of LoRaWAN® base stations and GPS satellites. See <a href="#">here</a> for more details on device placement.</p>

2 LoRaWAN Device Information

2.1 DevEUI Range (IEEE Compliance)	From :20635F0000000000 To : 20635FFFFFFFFF
2.2 LoRaWAN Class	<input checked="" type="checkbox"/> <b>Class A</b> <input type="checkbox"/> Class B <input type="checkbox"/> Class C
2.3 For Class C Device: Device Under Test restores previous RF settings at boot?	<input type="checkbox"/> Yes <input type="checkbox"/> <b>No</b>
2.4 In what LoRaWAN region/frequency ranges is the product available	<input checked="" type="checkbox"/> EU863-870 <input checked="" type="checkbox"/> US902-928 <input checked="" type="checkbox"/> AS923 <input checked="" type="checkbox"/> IN865-867 <input type="checkbox"/> KR920-923 <input type="checkbox"/> Other
2.5 Is the LoRaWAN test mode supported?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No, why not
2.6 Tested and certified against which LoRaWAN Specification(s)	<input type="checkbox"/> V1.0 <input type="checkbox"/> V1.0.1 <input checked="" type="checkbox"/> <b>V1.0.2 revB</b> <input type="checkbox"/> V1.0.3 <input type="checkbox"/> V1.1.x <input type="checkbox"/> Other :
2.7 Link to document on the LoRa Alliance website	Link:
2.8 Which TX power is used in production devices by default?  - if LW 1.0.2 rev A or older is used:  - if LW 1.0.2 rev B or newer is used	<input type="checkbox"/> TXPower 0 (20dBm) <input type="checkbox"/> TXPower 1 (14dBm) <input type="checkbox"/> TXPower 2 (11dBm) <input type="checkbox"/> TXPower 3 (8dBm) <input type="checkbox"/> TXPower 4 (5dBm) <input type="checkbox"/> TXPower 5 (2dBm) <input type="checkbox"/> other TXPower (          dBm)  <input checked="" type="checkbox"/> <b>TXPower 0 (MaxEIRP)</b> <input type="checkbox"/> TXPower 1 (MaxEIRP-2dB) <input type="checkbox"/> TXPower 2 (MaxEIRP-4dB) <input type="checkbox"/> TXPower 3 (MaxEIRP-6dB) <input type="checkbox"/> TXPower 4 (MaxEIRP-8dB) <input type="checkbox"/> TXPower 5 (MaxEIRP-10dB) <input type="checkbox"/> TXPower 6 (MaxEIRP-12dB) <input type="checkbox"/> TXPower 7 (MaxEIRP-14dB)  <input type="checkbox"/> other TXPower (Max EIRP :          dB)
2.9 Which TX powers are supported by the	

<p>device in production</p> <p>- if LW 1.0.2 rev A or older is used:</p>           <p>- if LW 1.0.2 rev B or newer is used</p>	<p><input type="checkbox"/> TXPower 0 (20dBm)</p> <p><input type="checkbox"/> TXPower 1 (14dBm)</p> <p><input type="checkbox"/> TXPower 2 (11dBm)</p> <p><input type="checkbox"/> TXPower 3 (8dBm)</p> <p><input type="checkbox"/> TXPower 4 (5dBm)</p> <p><input type="checkbox"/> TXPower 5 (2dBm)</p> <p><input type="checkbox"/> other TXPower (      dBm)</p> <p><input checked="" type="checkbox"/> <b>TXPower 0 (MaxEIRP)</b></p> <p><input type="checkbox"/> <b>TXPower 1 (MaxEIRP-2dB)</b></p> <p><input type="checkbox"/> <b>TXPower 2 (MaxEIRP-4dB)</b></p> <p><input type="checkbox"/> <b>TXPower 3 (MaxEIRP-6dB)</b></p> <p><input type="checkbox"/> <b>TXPower 4 (MaxEIRP-8dB)</b></p> <p><input type="checkbox"/> <b>TXPower 5 (MaxEIRP-10dB)</b></p> <p><input type="checkbox"/> <b>TXPower 6 (MaxEIRP-12dB)</b></p> <p><input type="checkbox"/> <b>TXPower 7 (MaxEIRP-14dB)</b></p> <p>(Max EIRP : 14dBm)</p>
<p>2.9 Which LoRaWAN Specification is currently supported on the production devices?</p>	<p><input type="checkbox"/> V1.0</p> <p><input type="checkbox"/> V1.0.1</p> <p><input type="checkbox"/> V1.0.2 revA</p> <p><input checked="" type="checkbox"/> <b>V1.0.2 revB</b></p> <p><input type="checkbox"/> V1.0.4</p> <p><input type="checkbox"/> V1.1.x</p> <p><input type="checkbox"/> Other:</p>
<p>2.10 Will you re-certify your device when a new major LoRaWAN specification version is released</p>	<p><input checked="" type="checkbox"/> <b>Yes.</b></p> <p><input type="checkbox"/> No, why :</p>
<p>2.11 Has Interoperability prequalification testing been done?</p>	<p><input checked="" type="checkbox"/> <b>Yes.</b></p> <p><input type="checkbox"/> No, why :</p> <p>Which Network Servers</p> <p><input type="checkbox"/> Actility</p> <p><input type="checkbox"/> Loriot</p> <p><input type="checkbox"/> TTI</p> <p><input type="checkbox"/> Other: Specify:</p> <p>Please attach all the test reports.</p>
<p>2.12 Is Activation Type OTAA the default</p>	<p><input checked="" type="checkbox"/> <b>Yes.</b></p> <p><input type="checkbox"/> No, why :</p>
<p>2.13 For OTAA, is AppKey unique for each device?</p>	<p><input checked="" type="checkbox"/> <b>Yes.</b></p> <p><input type="checkbox"/> No.</p>
<p>2.14 Is ADR implemented?</p>	<p><input checked="" type="checkbox"/> <b>Activated</b></p>

<p>Recommendation: ADR should always be activated. Exceptions can be made for moving devices but will need to be explained.</p>	<p><input type="checkbox"/> Deactivated, why :</p> <p><input checked="" type="checkbox"/> Configurable by user (recommendation: Activated by default)</p> <p><b>In motion, device can control DR with a specific and programmable pattern to optimise perf link.</b></p> <p><input type="checkbox"/> Mixed, explain:</p>
<p>2.15 What values did you implement for: - ADR_ACK_LIMIT: - ADR_ACK_DELAY:</p>	<p>64recommended value: 64 32recommended value: 32</p>
<p>2.16 Do you use unconfirmed and/or confirmed uplinks and what is the data rate, timing and power back off algorithm?</p> <p>Upon reception of a confirmed downlink message, is the next uplink sent immediately after the downlink ?Answers (radio buttons)</p>	<p><input type="checkbox"/> unconfirmed <input type="checkbox"/> confirmed, when and why: <input checked="" type="checkbox"/> Both, which is used when and why: Location and heartbeat uplinks are unconfirmed. However, application can configure the tracker to send confirmed uplinks manually (for ex. When sending frame pending messages to speed up the configuration of the tracker)</p> <p>Data rate, timing and power back-off algorithm (only if you use confirmed uplinks): No of confirmed messages is limited to 8 (configurable paramter)</p> <p><input checked="" type="checkbox"/> Yes. <input type="checkbox"/> No, why :</p>
<p>2.17 Is the device doing a periodical rejoin? (only for OTAA)</p>	<p><input checked="" type="checkbox"/> Yes (frequency): The join attempts range from 15 minutes to 1 hour <input type="checkbox"/> No. Why? How to trigger a rejoin?</p>
<p>2.18 Is the first join request sent on SF12?</p>	<p><input checked="" type="checkbox"/> Yes. <input type="checkbox"/> No, why: Explain the JoinRequest sequence if no JoinAccept is received - data rate, timing and power back-off algorithm.</p>
<p>2.19 On what SF and power setting is the first uplink (after join procedure) done?</p>	<p>SF: SF12 TXPower: TXPower 0</p>
<p>2.20 Are you doing periodically reset of Uplink frame counter?</p>	<p><input type="checkbox"/> Yes (frequency/why): <input checked="" type="checkbox"/> No, except if the device detects loss of LoRaWAN link. The device resets itself and triggers a JOIN procedure on detecting the loss of LoRaWAN link. The detection is based on downlinks received from the network or if linkADR request is not successful. The number of days after which device should reset on the loss of LoRaWAN link is configurable by the application</p>
<p>2.21 If LoRaWAN 1.0.x, DevNonce behaviour :</p>	<p><input checked="" type="checkbox"/> Based on a random value <input type="checkbox"/> Monotonically increasing never-wrapping counter</p>

2.22 Uplink DataRate (0-7 supported)	Min: 0 Max: 5
2.23 RX1 Data Rate Offset	<input checked="" type="checkbox"/> <b>Default</b> LoRaWAN in regards of ISM band <input type="checkbox"/> Other:
2.24 RX1 Delay	<input checked="" type="checkbox"/> <b>Default</b> LoRaWAN in regards of ISM band <input type="checkbox"/> Other:
2.25 RX2 Data Rate	<input checked="" type="checkbox"/> <b>Default</b> LoRaWAN in regards of ISM band <input type="checkbox"/> Other:
2.26 RX2 Frequency	<input checked="" type="checkbox"/> <b>Default</b> LoRaWAN in regards of ISM band <input type="checkbox"/> Other:
2.27 RX1 Delay on JoinRequest (OTAA devices only)	<input checked="" type="checkbox"/> <b>Default</b> LoRaWAN in regards of ISM band <input type="checkbox"/> Other:
2.28 Mobility Profile (how your device moves)	<input type="checkbox"/> Near static <input type="checkbox"/> Walking speed <input type="checkbox"/> <b>Vehicle speed</b> <input checked="" type="checkbox"/> Random
2.29 Frame Counters Up To 32-bits	<input checked="" type="checkbox"/> Frame counter-up <input checked="" type="checkbox"/> Frame counter-down
2.30 Which MAC commands does the device support	<input checked="" type="checkbox"/> LinkCheckReq / LinkCheckAns <input checked="" type="checkbox"/> TXParamSetupReq / TXParamSetupAns <input checked="" type="checkbox"/> LinkADRReq / LinkADRAns <input checked="" type="checkbox"/> DutyCycleReq / DutyCycleAns <input checked="" type="checkbox"/> RXParamSetupReq / RXParamSetupAns <input checked="" type="checkbox"/> DevStatusReq / DevStatusAns <input checked="" type="checkbox"/> NewChannelReq / NewChannelAns <input type="checkbox"/> TXTimingSetupReq / TXTimingSetupAns
2.31 LoRaWAN Stack Type (optional)	<input type="checkbox"/> Semtech/Stackforce <input checked="" type="checkbox"/> <b>Semtech/Stackforce with modifications</b> <input type="checkbox"/> IBM <input type="checkbox"/> IBM with modifications <input type="checkbox"/> Proprietary- Other, name it:
2.32 LoRaWAN Stack Version (optional)	
2.33 LoRa Radio Hardware (optional)	<input type="checkbox"/> Proprietary: SX chip used: <input checked="" type="checkbox"/> LoRaWAN Modem/Module: Manufacturer: Semtech Part Number: SX1262 Firmware revision:



2.34 Multicast support (optional)	<input type="checkbox"/> Yes: Multicast DevAddr: Multicast AppSKey: Multicast NwkSKey: Payload: Port: <input checked="" type="checkbox"/> No.
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3 Radio Frequency Information

3.1 Type of Antenna	<input type="checkbox"/> Wire <input type="checkbox"/> PCB <input type="checkbox"/> External <input checked="" type="checkbox"/> Other: (which type) SMT
3.2 Antenna gain [dBi or dBd]	-2 dBi or dB ANtenan gain is also a affected by close body proximity as it is a wearable device.
3.3 Did you measure and take into account the loss between the modem and the antenna?	<input checked="" type="checkbox"/> Yes, 0.25 dB loss <input type="checkbox"/> No, why:
3.4 For LW 1.0.2 rev A or older devices: which TXPower setting should be used on the network for your device*:	<input type="checkbox"/> TXPower 0 (20dBm) <input type="checkbox"/> TXPower 1 (14dBm) <input type="checkbox"/> TXPower 2 (11dBm) <input type="checkbox"/> TXPower 3 (8dBm) <input type="checkbox"/> TXPower 4 (5dBm) <input type="checkbox"/> TXPower 5 (2dBm) <input type="checkbox"/> other txpower (          dBm)
3.5 Did you calibrate your device with the antenna gain and measured loss in between the chipset and antenna? This so that your device emits with maximal power when using TXPower 1 for LW 1.0.2 rev A or older devices (= 14dBm) and TXPower 0 for LW 1.0.2 rev B or newer devices (= MaxEIRP or 16.15dBm EIRP)*.	<input checked="" type="checkbox"/> Yes, <input type="checkbox"/> No, why:

**4 Battery and TX Power Information**

Please indicate if you do not want Section 4 displayed on the LoRa Alliance Website  Yes  
 If yes please supply contact details for the operators to request the information for Section 4

<p>4.1 Battery consumption of the device (including modem, sensors and all other electronics)</p>	<p>TX current: 85 mA                  RX current: 10 mA                  Idle time current: 0.011 mA</p>																																				
<p>4.2 Estimated battery life in years based on the number of transmissions (including sensor readings) at SF7, SF10 &amp; SF12 with your battery self-discharge and aging over time taken into account.</p> <p><b>Assumptions:</b></p> <ul style="list-style-type: none"> <li>- Product shelf life before use: Maximum 1 year.</li> <li>- At an environment temperature of 20°C.</li> <li>- LoRaWAN specification used for battery life calculation:</li> <li>- TX power setting (txpower) used for battery life calculation:</li> <li>- Payload size used for battery life calculation (should be average payload size of production device):</li> <li>- Additional assumptions or comments on battery life (Typical usage)</li> </ul>	<table border="1"> <thead> <tr> <th colspan="4">Battery life in years</th> </tr> <tr> <th>Transmission Periodicity (transmissions/day)</th> <th>SF7</th> <th>SF10</th> <th>SF12</th> </tr> </thead> <tbody> <tr> <td>144</td> <td>0.04</td> <td>0.04</td> <td>0.04</td> </tr> <tr> <td>96</td> <td>0.06</td> <td>0.06</td> <td>0.05</td> </tr> <tr> <td>48</td> <td>0.11</td> <td>0.11</td> <td>0.10</td> </tr> <tr> <td>24</td> <td>0.20</td> <td>0.20</td> <td>0.18</td> </tr> <tr> <td>12</td> <td>0.34</td> <td>0.33</td> <td>0.30</td> </tr> <tr> <td>4</td> <td>0.65</td> <td>0.65</td> <td>0.56</td> </tr> <tr> <td>1</td> <td>1.5</td> <td>1.35</td> <td>1.03</td> </tr> </tbody> </table> <p> <input type="checkbox"/> LW1.0.1  <input type="checkbox"/> LW1.0.2 revA  <input checked="" type="checkbox"/> LW1.0.2 revB  <input type="checkbox"/> Other :                 </p> <p> <input type="checkbox"/> LW1.0.1  <input type="checkbox"/> LW1.0.2 revA  <input checked="" type="checkbox"/> LW1.0.2 revB  <input type="checkbox"/> Other :                 </p> <p>16 bytes</p> <p>Heartbeat message is sent 48 times/day</p>	Battery life in years				Transmission Periodicity (transmissions/day)	SF7	SF10	SF12	144	0.04	0.04	0.04	96	0.06	0.06	0.05	48	0.11	0.11	0.10	24	0.20	0.20	0.18	12	0.34	0.33	0.30	4	0.65	0.65	0.56	1	1.5	1.35	1.03
Battery life in years																																					
Transmission Periodicity (transmissions/day)	SF7	SF10	SF12																																		
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24	0.20	0.20	0.18																																		
12	0.34	0.33	0.30																																		
4	0.65	0.65	0.56																																		
1	1.5	1.35	1.03																																		

<p>4.3 Which TX power setting (TXPower) was used in the RF test?</p> <p>- If LW 1.0.2 rev A or older device:</p> <p>- If LW 1.0.2 rev B or newer device:</p>	<p><input type="checkbox"/> TXPower 0 (20dBm)</p> <p><input type="checkbox"/> TXPower 1 (14dBm)</p> <p><input type="checkbox"/> TXPower 2 (11dBm)</p> <p><input type="checkbox"/> TXPower 3 (8dBm)</p> <p><input type="checkbox"/> TXPower 4 (5dBm)</p> <p><input type="checkbox"/> TXPower 5 (2dBm)</p> <p><input type="checkbox"/> other TXPower (        dBm)</p> <p><input checked="" type="checkbox"/> <b>TXPower 0 (MaxEIRP)</b></p> <p><input type="checkbox"/> TXPower 1 (MaxEIRP-2dB)</p> <p><input type="checkbox"/> TXPower 2 (MaxEIRP-4dB)</p> <p><input type="checkbox"/> TXPower 3 (MaxEIRP-6dB)</p> <p><input type="checkbox"/> TXPower 4 (MaxEIRP-8dB)</p> <p><input type="checkbox"/> TXPower 5 (MaxEIRP-10dB)</p> <p><input type="checkbox"/> TXPower 6 (MaxEIRP-12dB)</p> <p><input type="checkbox"/> TXPower 7 (MaxEIRP-14dB)</p> <p><input type="checkbox"/> other TXPower (MaxEIRP-        dBm)</p>
<p>4.4 Is this the same TX power setting (TXPower) used by default in production devices (before network ADR)?</p>	<p><input checked="" type="checkbox"/> <b>Yes,</b></p> <p><input type="checkbox"/> No, why:</p>
<p>4.5 Maximum ERP measured: (ERP = EIRP - 2.15 dB; LoRaWAN allows 14 dBm ERP)</p>	<p>12.6 dBm</p>
<p>4.6 TRP measured: (TRP is based on EIRP) This gives an idea about the directivity of the antenna.</p>	<p>11 dBm</p>
<p>3.10 TIS measured on RX1:</p>	<p>For RX1-SF12BW125 on 868.3MHz -130dBm</p>
<p>3.11 TIS measured on RX2</p>	<p>For RX2-SF12BW125 on 869.525 MHz: -130 dBm</p>