For Device Certification please complete sections 01 to 06

For Device Certification by similarity please complete all sections

**Version of Questionnaire Form from the Customer/ Device Manufacturer**

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Date** | **Author** | **Update** |
| 1.0 |  |  | Initial release from manufacture |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

**Company requesting LoRaWAN Certification:**

|  |  |  |
| --- | --- | --- |
| **01** | **Customer** | |
|  | Name: | ARAD Measurement Technologies LTD |
|  | Address: | st. Hamada 4, Yokneam Elit |
|  | Postal code, City: |  |
|  | Country: | Israel |
|  | Contact person: | Or Sarid |
|  | Email: | Or.Sarid@aradtec.com |
|  | Phone: | +972 54-674-7880 |
|  | Fax: |  |
| **02** | **Test report / Certificate Holder / Applicant** | **same as Customer** |
|  | Name: |  |
|  | Address: |  |
|  | Postal code, City: |  |
|  | Country: |  |
|  | Contact person: |  |
|  | Email: |  |
|  | Phone: |  |
|  | Fax: |  |
| **03** | **Manufacturer** | **same as Customer**  **same as Test report/Certificate Holder** |
|  | Name: |  |
|  | Address: |  |
|  | Postal code, City: |  |
|  | Country: |  |
| **04** | **Contact for technical questions during the tests** | |
|  | Company Name: | ARAD Measurement Technologies LTD |
|  | Contact person: | Ron Greenberg |
|  | Email: | Ron.Greenberg@aradtec.com |
|  | Phone: |  |
|  | Mobile Phone: | +972 54-567-6625 |
| **05** | **Contact for technical questions for certification by similarity assessment** | |
|  | Company Name: | ARAD Measurement Technologies LTD |
|  | Contact person: | Ron Greenberg |
|  | Email: | Ron.Greenberg@aradtec.com |
|  | Phone: |  |
|  | Mobile Phone: | +972 54-567-6625 |

**General EUT (Equipment under test) information:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **06** | **Device to be certified information (including variant device to be certified by similarity)** | | | |
| Items marked “Yes” will not be displayed on the LoRa Alliance Webpage! | Product name | | SONATA | |
| Confidential? | Product Vertical(s) | | Agriculture Buildings Cities Environment  Home/ Consumer Industry Infostructure Utilities  Transport / Logistics Other | |
|  | Product Version | |  | |
|  | Series (if any) | |  | |
|  | Hardware Version | | HW ver2.0 | |
|  | Software Version | |  | |
|  | Firmware Version | | Sonata-0x2B.3D | |
|  | Type of DUT | | Module  End Device/Sensor  others | |
|  | LoRaWAN physical regional | | EU863-870  US902-928  AS923  IN865-867  KR920-923  Other | |
|  | Adaptive Data Rate (ADR)? | | Yes  No | |
|  | Optional data rates supported? | | DR6 (SF7BW250)  DR7 (FSK50) | |
|  | Activation possibilities | | Over the air  by personalization  both | |
|  | Test According LoRaWAN Spec | | V1.0  V1.0.1  V1.0.2  V1.0.4  by similarity (also complete section 07 - 09) | |
|  | If V1.0.2, does the device provide: | | DIChannelReq and /or  block of LinkADRReq  Commands processing | |
|  | If DUT is  LW1.0.2 EU863-870 MHz | | Is TR0001 “Preventing State Synchronization Issues 2 around LoRaWAN 1.0.x Join Procedure” (DevNonce only test)  implemented  Yes  No    Max number of Confirmed re-transmissions - 7 | |
| Yes  Yes | Type and Version of used Stack | | own  IBM  Stackforce | |
|  |  | | 4.4.1 Version | |
| Yes | Output Power Range | | 0 - 14 dBm | |
| Yes | Number / Type of Antenna(s) | | 1/Internal Antenna | |
| Yes | Antenna Gain | | 0 dBi | |
| Yes | Radiated RF Performance (Via Alliance Process) | | Yes  No | |
| Yes | Test sample information | | production unit  identical prototype | |
|  | **For OTA activation[[1]](#footnote-1):**  End-device identifier (DevEUI)  Application identifier (AppEUI)  Application key (AppKey) | | | ????  00000000000000AA  112233445566778899AABBCCDDEEFF11 |
|  | **For activation by personalization[[2]](#footnote-2):**  End-device address (DevAddr)  Application session key (AppSKey)  Network session key (NwkSKey) | | | ????  112233445566778899AABBCCDDEEFF11  112233445566778899AABBCCDDEEFF11 |
| Yes | Power supply: | | AC by external power supply unit  AC by internal power supply unit  by external DC  Battery  incl. AC-charger Type of battery:  Power over Ethernet (POE) / USB | |
| Yes | Voltages | | Vnom : 3.6 | |
|  |  | | Vmax : 3.7 | |
|  |  | | Vmin : 3.2 | |
| Yes | Current consumption | | 0.005 - 80 mA | |
| Yes | Battery lifetime when continuously sending (only if battery operated device) | | 40 minutes | |
| Yes | Dimensions (in cm) / Weight: | | 110 x 100 x 100 mm / 300 g | |
| Yes | | Operational  Temperature Range: | Category I (General): -20°C to +55°C  Category II (Portable equipment): -10°C to +55°C  Category III (Equipment for indoor use): +5°C to +35°C  Others: -10°C to 40°C  For special applications, the manufacturer can specify alternative temperature ranges. This shall be reflected in the providers' product literature, e.g. the user manual. | |
| Yes | | Humidity Range: | 25% to 95% | |
| Text and description to be used on LoRa Alliance Webpage after successful certification testing and approval through the LoRa Alliance (60 words max) | | | The Sonata is an advanced and highly accurate ultrasonic water meter and data end-point for residential applications.  The Sonata is an advanced and highly accurate ultrasonic water meter and data end-point for residential applications.  The Sonata’s robust design ensures reliable and long-lasting precision. Its technology enables the measurement of even the lowest of flow rates.  The Sonata is a data rich end-point, is ready to meet the challenges of tomorrow’s smart water networks. | |
| Marketing Contact | | | Ziv Nahari - zivna@arad.co.il | |

|  |  |
| --- | --- |
| **07 Certification by similarity request** | |
| Have you filled in the certification by similarity declaration form? | Yes  No |
| Which certification by similarity do you requests from the following list?  Case 1: End-device certification using a certified module  Case 2: Certification of module variant from a certified module  Case 3: Certification of an end-device variant from a certified end-device | Case 1,  Case 2,  Case 3, |
| **08 Variant device differences to the referenced certified device** | |
| Same LoRaWAN transceiver | Yes  No |
| Same LoRaWAN protocol SW version | Yes  No |
| Same MCU Core | Yes  No |
| Same Clock design and implementation | Yes  No |
| Brief description of the differences between the primary and the variant device | Different Water Pipe Length |

**Certification by Similarity**

**General information on the referenced certified device**

|  |  |
| --- | --- |
| **09 Referenced certified device information for certification by similarity** | |
| Product name | ???? |
| Kind of product | ???? |
| Series (if any) | ???? |
| Hardware Version | ???? |
| Software Version | ???? |
| Firmware Version | ???? |
| Type of DUT | Module  End Device/Sensor  others |
| LoRaWAN physical regional | EU863-870  US902-928  AS923  IN865-867  KR920-923  Other |
| Adaptive Data Rate (ADR)? | Yes  No |
| Optional data rates supported? | DR6 (SF7BW250)  DR7 (FSK50) |
| Activation possibilities | Over the air  by personalization  both |
| Test According LoRaWAN Spec | V1.0  V1.0.1  V1.0.2  V1.0.4  by similarity (also 02 needs to be filled in) |
| If DUT  LW1.0.2 EU863-870 MHz, | Is TR0001 “Preventing State Synchronization Issues 2 around LoRaWAN™ 1.0.x Join Procedure” implemented  Yes  No  Max number of Confirmed re-transmissions 3 |

1. MSB Notation required [↑](#footnote-ref-1)
2. MSB notation required [↑](#footnote-ref-2)