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** | **[x]  same as Customer** |
|  | Name: |  |
|  | Address: |  |
|  | Postal code, City: |  |
|  | Country: |  |
|  | Contact person: |  |
|  | Email: |  |
|  | Phone: |  |
|  | Fax: |  |
| **03** | **Manufacturer** | **[x]  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 [x] 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 [x]  End Device/Sensor [ ]  others  |
|  | LoRaWAN physical regional | [x]  EU863-870 [ ]  US902-928 [ ]  AS923 [ ]  IN865-867 [ ]  KR920-923 [ ]  Other       |
|  | Adaptive Data Rate (ADR)? | [x]  Yes [ ]  No |
|  | Optional data rates supported? | [x]  DR6 (SF7BW250) [x]  DR7 (FSK50) |
|  | Activation possibilities | [ ]  Over the air [ ]  by personalization [x]  both |
|  | Test According LoRaWAN Spec | [ ]  V1.0 [ ]  V1.0.1 [x]  V1.0.2 [ ]  V1.0.4[ ]  by similarity (also complete section 07 - 09) |
|  | If V1.0.2, does the device provide: | [x]  DIChannelReq and /or [x]  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 [x]  No  Max number of Confirmed re-transmissions - 7 |
| [ ]  Yes [ ]  Yes | Type and Version of used Stack | [x]  own [ ]  IBM [ ]  Stackforce [ ]         |
|  |  | 4.4.1 Version |
| [x]  Yes | Output Power Range | 0 - 14 dBm |
| [x]  Yes | Number / Type of Antenna(s) | 1/Internal Antenna |
| [x]  Yes | Antenna Gain | 0 dBi |
| [x]  Yes | Radiated RF Performance (Via Alliance Process)  | [x]  Yes [ ]  No |
| [x]  Yes | Test sample information | [x]  production unit [ ]  identical prototype |
|  | **For OTA activation[[1]](#footnote-1):**End-device identifier (DevEUI)Application identifier (AppEUI)Application key (AppKey) |      ????00000000000000AA112233445566778899AABBCCDDEEFF11 |
|  | **For activation by personalization[[2]](#footnote-2):** End-device address (DevAddr)Application session key (AppSKey)Network session key (NwkSKey) |      ????112233445566778899AABBCCDDEEFF11112233445566778899AABBCCDDEEFF11 |
| [x]  Yes | Power supply:  | [ ]  AC by external power supply unit[ ]  AC by internal power supply unit[ ]  by external DC**[x]**  Battery [ ]  incl. AC-charger Type of battery:      [ ]  Power over Ethernet (POE) / USB |
| [x]  Yes | Voltages | Vnom : 3.6 |
|  |  | Vmax : 3.7 |
|  |  | Vmin : 3.2 |
| [x]  Yes | Current consumption | 0.005 - 80 mA |
| [x]  Yes | Battery lifetime when continuously sending (only if battery operated device) | 40 minutes |
| [x]  Yes | Dimensions (in cm) / Weight:  | 110 x 100 x 100 mm / 300 g |
| [x]  Yes | Operational Temperature Range: | [x]  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°CFor special applications, the manufacturer can specify alternative temperature ranges. This shall be reflected in the providers' product literature, e.g. the user manual.  |
| [x]  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 [x]  No |
| Which certification by similarity do you requests from the following list?Case 1: End-device certification using a certified moduleCase 2: Certification of module variant from a certified moduleCase 3: Certification of an end-device variant from a certified end-device | [ ]  Case 1, [ ]  Case 2, [x]  Case 3,  |
| **08 Variant device differences to the referenced certified device**  |
| Same LoRaWAN transceiver | [x]  Yes [ ]  No |
| Same LoRaWAN protocol SW version | [x]  Yes [ ]  No |
| Same MCU Core | [x]  Yes [ ]  No |
| Same Clock design and implementation | [x]  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 [x]  End Device/Sensor [ ]  others  |
| LoRaWAN physical regional | [x]  EU863-870 [ ]  US902-928 [ ]  AS923 [ ]  IN865-867 [ ]  KR920-923 [ ]  Other       |
| Adaptive Data Rate (ADR)? | [x]  Yes [ ]  No |
| Optional data rates supported? | [x]  DR6 (SF7BW250) [x]  DR7 (FSK50) |
| Activation possibilities | [ ]  Over the air [ ]  by personalization [x]  both |
| Test According LoRaWAN Spec | [ ]  V1.0 [ ]  V1.0.1 [x]  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 [x]  No Max number of Confirmed re-transmissions 3 |

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