

Software Specification

Modbus TCP Slave for POC

( For Reyax LoRa Sensor Node only)

**Revision History**

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| --- | --- | --- | --- |
| **Revision** | **Date** | **Notes** | **Owner** |
| 1.0 | 2018/08/17 | First version | Luke.Su |

1. **Customer’s requirement**

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| **Project (\*)** | Modbus TCP Slave for POC | **Apply Date (\*)** | 2018/08/16 |
| **Customer (\*)** | Hyundai | **Business (\*)** | NRE |
| **PM (\*)** | Brook.Lee | **AE (\*)** | Ray.Liu |
| **Platform** | UTX-3117 | **OS (\*)** | Ubuntu 16.04 x64 |
| **Peripheral** | **Name** | **Purpose** |
| Integrator board | Connect the turnstile with MIO-2360 |
|  |  |
| **User /****Functional Requirements** | **Description** | **Evaluate Solution** | **Version** |
| SCADA would get LoRa node sensor data from UTX-3117 by Modbus TCP  | Modbus TCP Slave | 1.0 |
| Fixed LoRa sensor data as below picture. | Hardcode for this POC | 1.0 |
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| **Others** |
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**(\*): Must**

1. **Software Specification**

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| We will provide a Modbus TCP slave convert fixed Reyax’s LoRa Node sensor board only. Information of integrated Reyax LoRa module for this POC demo as below.

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| Item | Reyax LoRa Solution | Firmware Version | Note |
| 1 | Mini-PCIe LoRa module  | RYLRxxP\_V0.1.28 | Reyax LoRa Manager  |
| 2 | LoRa Node type # 1 | RYLRxx6\_V0.120 | Reyax LoRa SenHub |
| 3 | I/O Board | RYLRxxE\_V0.1.11 | Sensor Board:Temperaturex1, Humidityx1, Input x 2, Relay x 5,ADC x 1 |

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1. **Functional Specification**

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| **Item** | **Name** | **Description** |
| 1 | Convert data format to Modbus TCP  | To get LoRa sensor data and convert to Modbus TCP data format |
| 2 | Modbus TCP Slave | SCADA can acquire LoRa sensor data by Modbus TCP protocol. |
| 3 | Set relay by Modbus TCP | User can set LoRa node relay by Modbus TCP protocol.  |
| 4 | Configuration | 1. LoRa node unique id mapping to Modbus TCP slave id.
2. Sensor data mapping to Modbus address and length.
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1. **Efforts of Software Development/Customization**

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| **Tasks** | **Comment** | **Man-days** |
| Feasibility Evaluation | Technique study & SW specification  | 2 |
| Design  | Design data format and SW architecture. | 2 |
| Implement & Release | Implement & Release | 6 |
| **Total** |  | **10** |

1. **Signature**

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| **Customer:** Company: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_By (Signature): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Name (Print): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Title:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Address:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Anticipated Annual Quantities: \_\_\_\_\_ | **Approve by:** | **Advantech Co., Ltd.****Name(Print):** **Title:**  **Address**:2F., No.27, Wende Rd., Guishan Dist., Taoyuan City 333, Taiwan, R.O.C**Tel**: 886-2-2792-7818 |
| **Comments:** |