LoRaWAN Based 3rd Party Gateway Integration (1-phase Centralized)

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1. Scenario Preset

(1) There are 10 areas with 1-phase Power System needed to be monitored

(2) Each area has 20 circuits 1-phase needed to be monitored, circuits' rated voltage is 240Vac L-N , circuit's rated/max current is not more than 80A AC.

(3) For the place that we gonna install energy meter and LoRaWAN node gateway, it was covered by the communication distance of main LoRaWAN gateway (Customer side).

(4) All 1-phase energy meter will be of partial centralized installation in each area, which make it possbile for 1 AWT100-LW868 IoT LoRaWAN node gateway to support 20 (max 25, recommend 20) ADL200/C 1-phase Energy Meters using RS485 wired communication in a close range within 300m.

2. Devices Deployment Plan

Area #1: [For Circuit #1-1~Circuit #1-20]
- 1* AWT100-LW868 IoT LoRaWAN Gateway [paired with 20 ADL200/C for LoRaWAN upstreaming]
- 1* AWT100-POW Power Supply Module [paired with AWT100-LW868 for 85~265Vac power input]
- 20* ADL200/C 1-phase DIN-rail Energy Meter [For monitoring Circuit #1-1 to Circuit #1-20]

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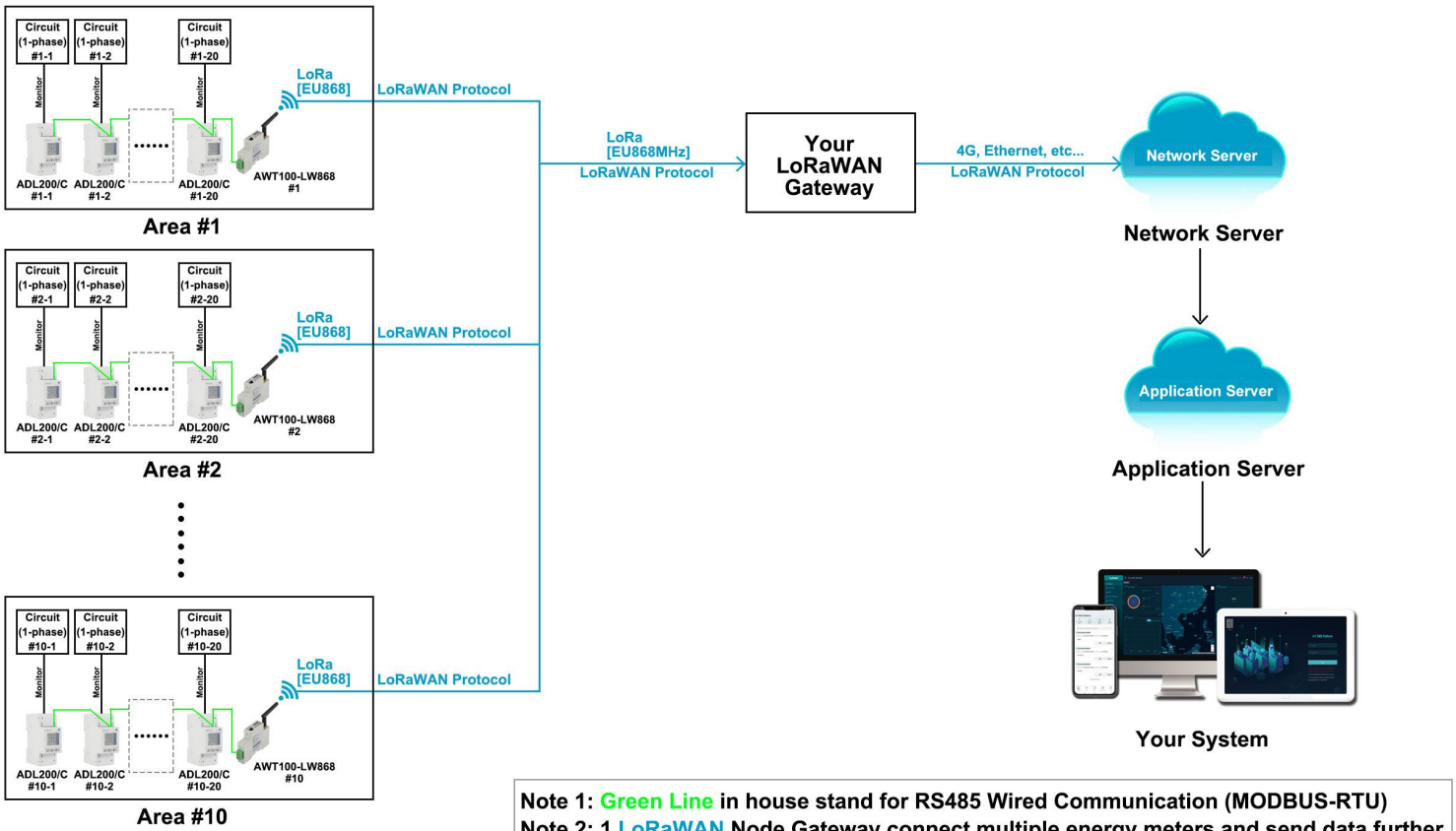
Area #10: [For Circuit #10-1~Circuit #10-20]
- 1* AWT100-LW868 IoT LoRaWAN Gateway [paired with 20 ADL200/C for LoRaWAN upstreaming]
- 1* AWT100-POW Power Supply Module [paired with AWT100-LW868 for 85~265Vac power input]
- 20* ADL200/C 1-phase DIN-rail Energy Meter [For monitoring Circuit #10-1 to Circuit #10-20]



Note 1: Green Line in house stand for RS485 Wired Communication (MODBUS-RTU)
Note 2: 1 LoRaWAN Node Gateway connect multiple energy meters and send data further by LoRa Comms Methods based on LoRaWAN protocol

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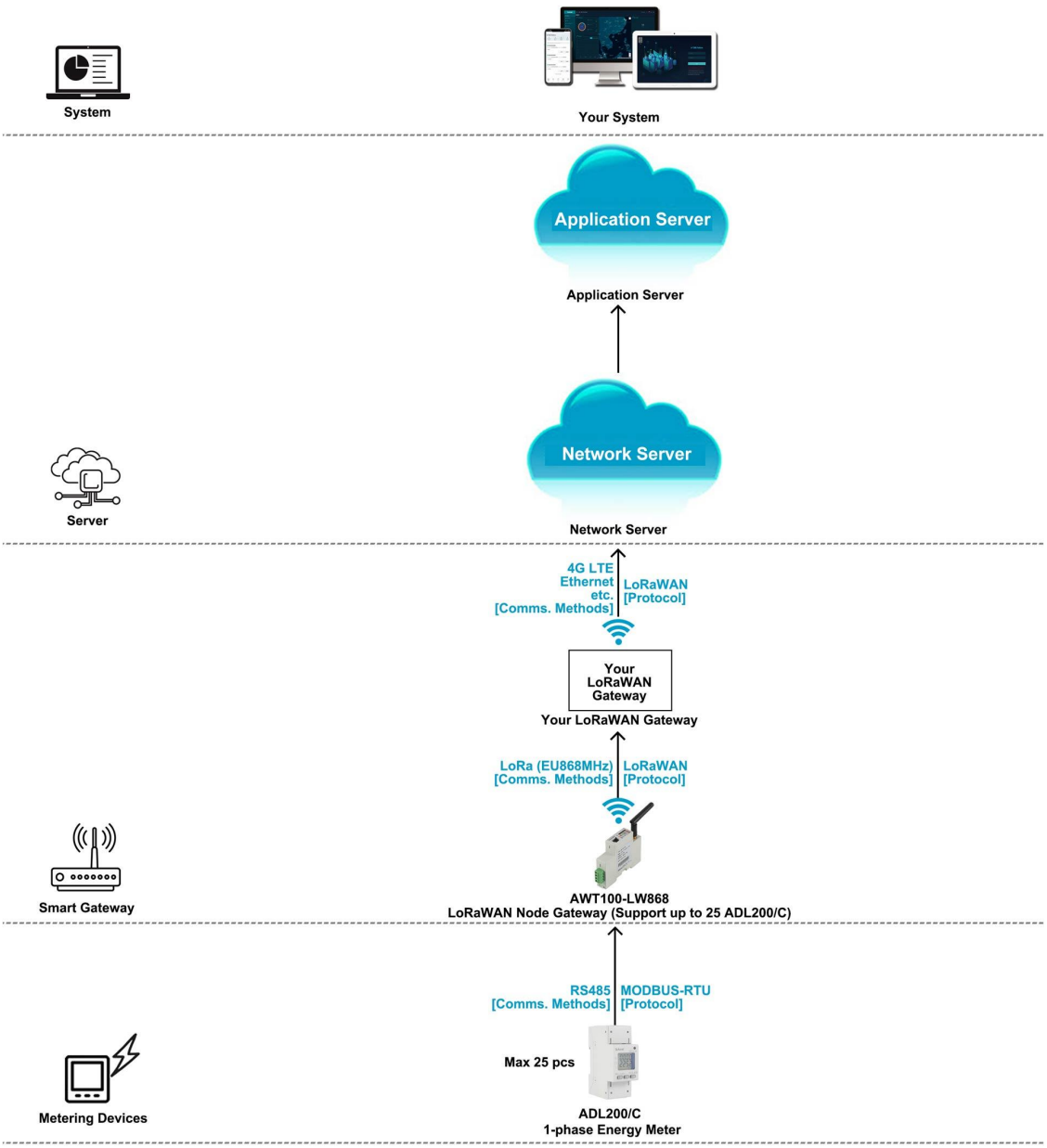
3. Communication Structure&Logic

(1) In this case, customer side already have their own main LoRaWAN gateway with downstream of LoRa comms. methods based on LoRaWAN protocol and upstream of either 4G, Ethernet etc.
(2) AWT100-LW868 LoRaWAN node gateway support upstream of LoRa communication methods (EU868MHz frequency bands) based on LoRaWAN protocol and downstream of RS485 communication based on MODBUS-RTU protocol. ADL200/C support upstream communication of RS485 communication based on MODBUS-RTU protocol.
(3) Based on the communication described in item (2), Acrel AWT100-LW868 gateway could receive the data from ADL200/C energy meter using RS485 communication while sending the data further to main LoRaWAN gateway which is belong to customer side using LoRaWAN upstream communication. Thus accomplish a complete communication from bottom metering devices to top system software.



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4. Overall Model Selection&Quoation

(1) This Quotation doesn't include freight charge. To gain a complete quotation, please refer the actual quantity that you want to request for the actual order, once we receiving it. We will issue a Official Proforma Invoice with Acrel Stamps on it for later procedure.

LoRaWAN Node Smart Gateway					
Overview Picture	**USAGE&MODULE NAME**	**DESCRIPTION & SPECIFICATION**	**QUANTITY**	**FOB UNIT PRICE (USD)**	**AMOUNT (USD)**
	Smart Gateway **AWT100-LW868**	**Upstream:** LoRa (EU868MHz frequency bands /LoRaWAN protocol) **Downstream:** RS485 (MODBUS-RTU) **Support:** up to **20~25** Energy Meters within 400m using RS485 Wired Communication **Power Supply:** 85~265Vac/Vdc (via AWT100-POW) **Certification:** CE-RED	10 pcs		
	Power Supply Module **AWT100-POW**	**Input:** 85~265Vac/Vdc **Output:** 24Vdc **Application:** paired with AWT100 Series gateway for 85~265Vac/Vdc power supply input	10 pcs		
1-phase Energy Meter					
Overview Picture	**USAGE&MODULE NAME**	**DESCRIPTION & SPECIFICATION**	**QUANTITY**	**FOB UNIT PRICE (USD)**	**AMOUNT (USD)**
	1-phase RS485 Energy Meter **ADL200/C**	**Communication:** RS485 (MODBUS-RTU) **Accuracy:** Class 1.0 **Rated Voltage:** 220~264Vac L-N (45~65Hz) **Rated Current:** 10(80)A AC (via direct connect) **Certification:** MID, CE	200 pcs		