Site Survey Report

For who, what project, which date

**REVISION STATUS SHEET**

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| --- | --- | --- | --- | --- |
| Revision Number | Effective Date | Description / Summary of Revision | Copy updated by  Initials Date | |
| 00 | 28-Jun-2023 | Initial version | Gabriel Chen | 28-Jun-2023 |
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# EXECUTIVE SUMMARY

## Project background

(Why this project starts, who are the parties involved)

## Objective

* + 1. (List the objectives of this project);

## Approach

* + 1. (Roughly summary what will be done, no need to specify who does what);

# CHECKLIST (SEVERS AS A REMINDER, IGNORE NOT APPLICABLE ITEMS)

## If going overseas

* eFlow approval
* VISA application and readiness 🡺 Not sure? Check [CIBTvisas](https://cibtvisas.sg/);
* Passport with at least 6 month validity;
* Universal power adapter;
* Foreign currency;
* Universal power adapter;
* Mobile phone power plug;
* Mobile phone charging cable;
* Overseas data plan / local SIM card;
* Flight ticket and accommodation booking 🡺 [LITEON Admin (sharepoint.com)](https://liteon.sharepoint.com/sites/Singapore-data/StrategicResourceManagement/SitePages/Admin.aspx);
* (If by land) Land transportation arrangement (private charted, coach or taxi etc.)
* (If bringing any component) Component custom letter
* (If handing over any component to external party) Component DO (Delivery Order)

## Site accessibility

* Arrangement with counterpart (when, where, who, qualification requirement);
* Local basic safety certificate 🡺 Reference : [BCSS or CSOC](https://www.mom.gov.sg/faq/training-eservices/what-are-the-equivalent-wsq-courses-with-reference-to-wshc-courses);
* (If Work-At-Height) Local WAH safety certificate 🡺 Reference : [WAH : MOM publish, No. 25, 26](https://www.mom.gov.sg/-/media/mom/documents/safety-health/lists/mom-accredited-courses.pdf);
* PPE (Personal Protection Equipment) 🡺 Not sure? Check [illustration here](https://www.anbusafety.com/wp-content/uploads/2022/05/PPE-1.jpg);
  + Helmet;
  + Protection goggles;
  + Ear plug;
  + High-visibility vest;
  + Coverall / Jumpsuit;
  + Gloves;
  + Safety boots;
  + (If Work-Ay-Height) Full body harness
  + (If outdoor) Sun glasses and hat;
* Door or panel key (if needed, could request from counterpart);

## Items to be brought

* Water supply and (optional) snack;
* IC or Passport or Safety certificate;
* Administrative document (Site access form, DO, etc.), if any
* Drawings or other design document, ideally with all existing field devices IP address, and communication parameters;
* Engineer laptop;
* Camera (or phone with camera);
* Sample component (for sizing or demo purpose);
* Measurement tape;
* Laser measurement device (optional, for unreachable or long distance measurement) 🡺 [Bosch Professional GLM40 Laser Rangefinder [Genuine] Measuring Tool (70 SGD)](https://www.amazon.sg/Professional-GLM40-Rangefinder-Genuine-Measuring/dp/B00NS6ISKM/ref=asc_df_B00NS6ISKM/?tag=googleshoppin-22&linkCode=df0&hvadid=606472356386&hvpos=&hvnetw=g&hvrand=4599104143439453614&hvpone=&hvptwo=&hvqmt=&hvdev=c&hvdvcmdl=&hvlocint=&hvlocphy=9062523&hvtargid=pla-441069130968&psc=1);
* Laser pointer (optional if has Laser measurement device);
* (If has Laser measurement device) one set of Battery for Laser measurement device;
* Multi-meter;
* Current meter (aka Clamp meter);
* Tested working LAN cable (for network testing);
* 2 meter RS485 cable;
* 1 unit of RS485 adaptor;
* Any hand-tools (test pen, screw driver etc.);

# FIELD DEVICE INSTALLATION

## Installation position

(Photos to show planned or installed installation position, for LITEON Device 1, Device 2 …, including server or workstation too, if applicable)

(If planned, try to mark the intended installation position on the photo. Such as : using object to place at the intended position; mark the position with photo marking tool)

(Also specify the securing method : wall mount, DIN rail mount etc.)

## Network device connection

(Identify the connection terminal or port on the existing network device(s) to be connected, applicable for LITEON Device 1, Device 2 ……, including server or workstation too, if applicable)

(If LAN network, identify whether the network switch is managed or unmanaged. Recommended to connect engineer laptop to the switch to test, such as Ping, Telnet etc. If could poll any data from the target network device that will be ideal);

## AC power source connection (for LITEON field device(s))

(Also consider the AC power supply for LITEON field devices at targeted installation position)

## Cable routing

(How the network and power cable to be routed?)

* Whether any drilling on any enclosure involved? If yes, consider :
  + IP degrading of LITEON enclosure;
  + MoS for taking care LITEON enclosure IP degrading;
  + IP degrading of Client enclosure;
  + Approval from asset owner for Non-LITEON asset;
* Whether any wall hacking involved?
  + Approval from facility owner’s management and facility management (Note : facility management may not under owner directly);
* Also consider whether network cable is exceeding maximum communication distance;

# ONSITE TESTING

## Communication testing

(It is recommended to connect engineer’s laptop to the existing field device, to perform testing listed below. Paste testing screenshots here)

* Ping test : using engineer laptop simulates Edge Gateway. From the port where the Edge Gateway going to be connected, to the target field devices;
  + Command : prompt $D, $T$H$H$H$G
  + Changes prompt format to : 18-Mar-2021, 19:59:59
  + Command : ping <IP address of target device>
  + <Result screenshot>
  + (Repeat for all connected devices)
* Telnet test (Modbus TCP/IP default port 502 or others) : using engineer laptop simulates Edge Gateway. From the port where the Edge Gateway going to be connected, to the target field devices;
  + Command : telnet <IP address> <port number> (there is a white space between IP address and port number;
    - Example : telnet 192.168.10.71 502
  + <Result screenshot>
  + (Repeat for all connected devices)

## Data acquisition and commanding test;

(Once the communication is established successfully, verifying Modbus register table is feasible. Paste testing screenshots here)

* Data acquisition test : poll 1 or 2 data point according to the Modbus register table, verify whether the acquired data is meaningful;
* Commanding test : write data to control coil or other register, check whether the field devices reacts accordingly;
* This step is best with other UI display for verification purpose, it can be existing SCADA, or the LCD display on the field device itself;

# REMARK (IF ANY)

## Finding 1

(Content of finding 1);

## Finding 2

(Content of finding 2);

## Finding 3

(Content of finding 3);