

Valerann Smart road system – User manual

REV01.1

1. General

- a) The following describes the method for installing and operating Valerann's Smart road system, comprising of road stud sensors and road-side communication gateway. This system configurated without the presence of Valerann's cloud-based server.
- b) The entire system is pre-configured. Therefore, once the devices (i.e. the stud and gateway) are connected, the system will start running automatically.
- c) The protocol applies to AS3100 gateway and AS2200 road stud (see figure 1+2).



Figure 1- AS3100 - Roadside communication gateway

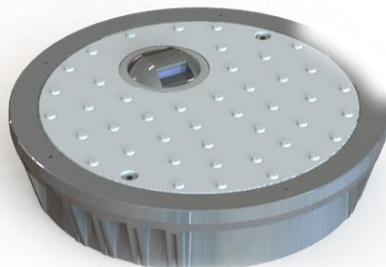


Figure 2- AS2200 Smart road stud sensor unit

2. Procedure:

- a) Power-up the road studs by removing the battery-cutoff-magnet at the bottom of the unit (will be done by Valerann personnel):

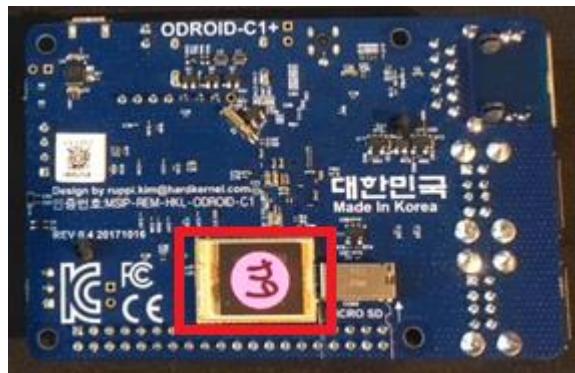


- b) Install the gateway on near-by pole and connect its power cables according to "Valerann Gateway - Installation Protocol - REV02"

- c) Install the road studs according to “Valerann Smart Road Stud - Installation Protocol - REV04”
- d) At that point, the system should run and save the data from the road at the gateway memory.

3. Data extraction:

- a) Extract the gateway's memory (on the back of the Odroid CPU board):



- b) Connect the memory to Odroid's SD adaptor:



- c) Connect the SD adaptor to an SD card reader and extract the data to a PC.

4. Safety and Precautions:

- a) Any maintenance on the system will be done by Valerann personnel or an approved contractor/electrician.
- b) Outdoor units and antennas should be installed ONLY by experienced installation professionals who are familiar with local building and safety codes and, wherever applicable, are licensed by the appropriate government regulatory authorities. Failure to do so may void the gateway (AS3100 product) warranty and may expose the end user or the service provider to legal and financial

liabilities. Valerann and its resellers or distributors are not liable for injury, damage or violation of regulations associated with the installation of outdoor units or antennas.

- c) This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment.
- d) The antenna used for stud sensor transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.
- e) This device complies with FCC Rules Part 15. Operation is subject to two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference that may be received or that may cause undesired operation.
- f) Changes or modifications to this equipment not expressly approved by the party responsible for compliance (Valerann Ltd.) could void the user's authority to operate the equipment.
- g) This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
 - Reorient or relocate the receiving antenna.
 - Increase the separation between the equipment and receiver.
 - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
 - Consult the dealer or an experienced radio/TV technician for help.