



## TECHNICAL SPECIFICATIONS

<b>Title:</b>	Vehicle Verification Unit (GPS)	
<b>Document number:</b>	BE.CXS-A0002.012.01	
<b>Owner:</b>	Wannay Snell	
<b>Date drafted:</b>	07 December 2022	
<b>Approval:</b>	Cedric Helmchen	<b>Signature:</b> 
<b>Approval Date:</b>	9 January 2023	
<b>Revision number:</b>	01	
<b>Revision Date:</b>	06 March 2023	
<b>Revision Owner:</b>	Wannay Snell	
<b>Revision Approved:</b>	Cedric Helmchen	<b>Signature:</b> 
<b>Translator Approval:</b>		
<b>Translator Approval Date:</b>		

**Table of Contents**

1 Purpose of document .....3  
2 Revision Control .....3  
3 Definitions.....3  
4 Vehicle Verification Unit (GPS).Specifications .....4  
    4.1 Overview .....4  
5 Drawing of Vehicle Verification Unit (GPS).....6  
    5.1 Dimensional Drawing of Vehicle Verification Unit (GPS).....6

**Table of Figures**

Figure 1: Vehicle Verification Unit (GPS). .....4  
Figure 2: Component Description with respect to Vehicle Verification Unit (GPS).....4  
Figure 3: Dimensional Drawing of Enclosure .....6

**Table of Tables**

Table 1: Revision Control Table .....3  
Table 2: Definition Table .....3  
Table 3: Vehicle Verification Unit (GPS) Specifications.....5  
Table 4: Vehicle Verification Unit (GPS) Simple Dimensions .....6

## 1 Purpose of document

The purpose of this document is to outline and demonstrate the technical specifications of the Vehicle Verification Unit (GPS).

## 2 Revision Control

Revision Date	Revision Number	Comments

Table 1: Revision Control Table

## 3 Definitions

Abbreviation	Definition
A	Ampere
BHU	Booyco Host Unit
°C	Degrees Celsius
CAN	Controlled Area Network
CXS	Collision Avoidance System
DC	Direct Current
GFSK	Gaussin Frequency Shift Keying
GLONASS	GLObalnaya NAVigatsionnaya Sputnikovaya Sistema (Global Navigation Satellite System in Russian)
GPS	Global Positioning System
h	hour
Hz	Hertz
IEC	International Electrotechnical Commission
IP	Ingress Protection
LED	Light Emitting Diode
LF	Low Frequency
m	metre(s)
NFC	Near Field Communication
RF	Radio Frequency
RS485	Recommended Standard 485
SRF	Surface
UL94-HB	A horizontal burning test, where burning stops before 100mm
V	volt(s)
VAC	Voltage Alternating Current
VDC	Voltage Direct Current
VVU	Vehicle Verification Unit
W	Watt(s)
Wi-Fi	Wireless Fidelity

Table 2: Definition Table

## 4 Vehicle Verification Unit (GPS).Specifications

### 4.1 Overview

The VVU is important in verifying and maintaining that the CXS systems installed are fully operational before entering or while in a work zone. This verification unit specifically verifies the operation of the vehicle detection capabilities of the surface CXS system installed on the vehicle under verification.



Figure 1: Vehicle Verification Unit (GPS).

System Components	Description
1	CXS Vehicle Verification Unit
2	CXS Surface Sensor
3	CXS Pedestrian Sensor
4	12 V LED Indication Lights

Figure 2: Component Description with respect to Vehicle Verification Unit (GPS).

Specification	Value
Battery Capacity	7Ah
Battery Voltage	13.7 V
BHU LF Frequency	125 kHz
BHU NFC Frequency	13.56 MHz
BHU RF Frequency	868 MHz (Local) 915 MHz (International)
BHU Wi-Fi Frequency	2.4 GHz
Colour	Grey (RAL 7035)
Dimensions	530 mm × 430 mm × 200 mm
Exclusion Zone Sensor Port	CAN Bus
Exclusion Zone Sensor RF Frequency	868 MHz (Local) 915 MHz (International)
Fire resistance	960 °C conforming to IEC 62208
Ingress Protection	IP66
Material	Polycarbonate
Operating Power	< 70 W
Operating Temperature	-40°C ~ 80°C
Operating Voltage	VAC : 88 ~ 264 (@ 47Hz~63Hz) VDC : 124 ~ 370
SRF Sensor GNSS	11602 MHz (GLONASS) 1575.42 MHz (GPS and Galileo)
SRF Sensor LF Frequency	125 kHz
SRF Sensor NFC Frequency	13.56 MHz
SRF Sensor Port	RS485
SRF Sensor RF Frequency	868 MHz (Local) 915 MHz (International)

Table 3: Vehicle Verification Unit (GPS) Specifications

## 5 Drawing of Vehicle Verification Unit (GPS).

### 5.1 Dimensional Drawing of Vehicle Verification Unit (GPS).

The below figure shows the dimensions of the enclosure with respect to the outside of it.

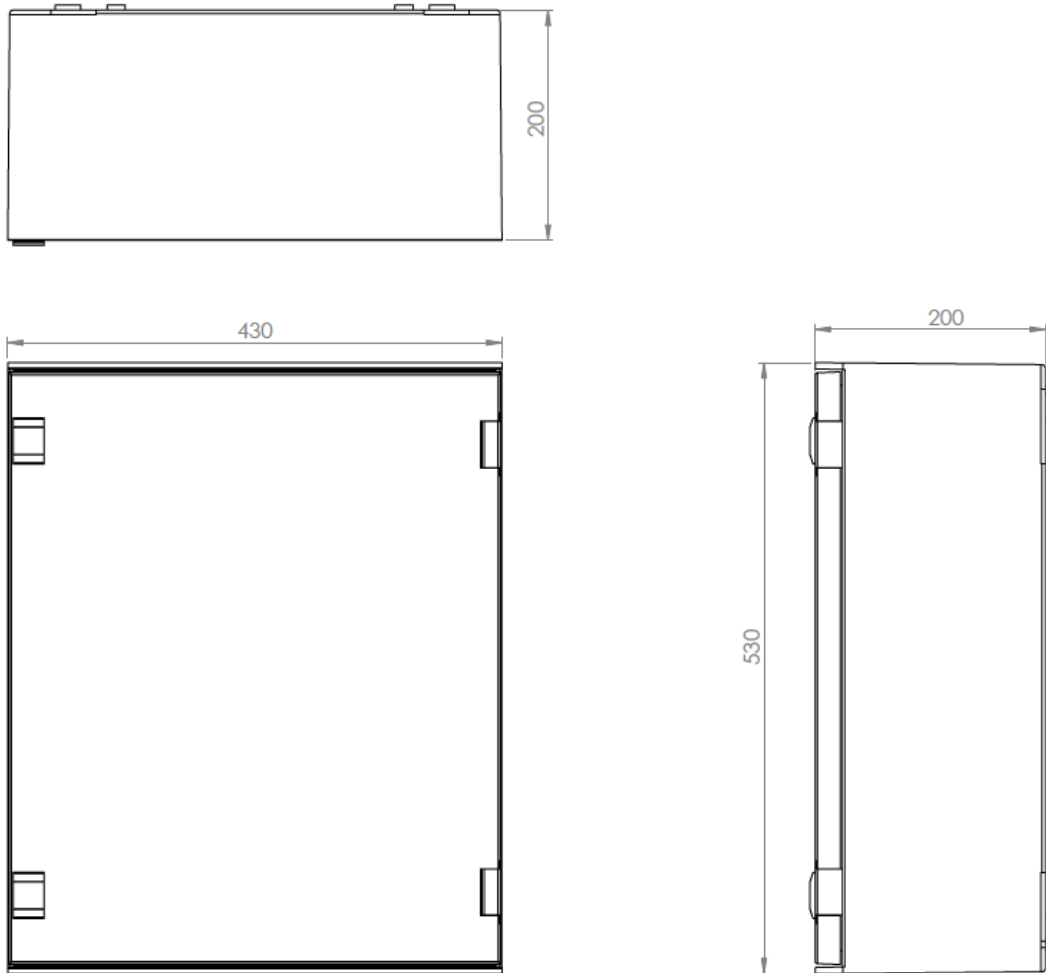


Figure 3: Dimensional Drawing of Enclosure

Parameter	Specification
Height	530 mm
Width	430 mm
Length	200 mm

Table 4: Vehicle Verification Unit (GPS) Simple Dimensions