Shearwell X6 Reader

SDL330

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1 Getting Started

Introduction

The Shearwell X6 reader (SDL330) is a Radiofrequency Identification (RFID) device. It is designed and manufactured by Shearwell Data Ltd, the market leader for cattle and sheep tags in the United Kingdom.
The device is designed to read animal electronic identification (EID) tags in compliance with the international standards ISO 11784 and ISO 11785, which regulates the RFID of animals.
The Shearwell X6 reader is intended to be used alongside an external device, which will supply the reader with power and record the EID tag data. Shearwell Data Ltd recommends using the SDL330 with a Nautiz X6 rugged mobile, which is designed and manufactured by the Handheld Group.

NOTE – The Handheld Nautiz X6 device ***must*** be purchased separately and is available as an optional add-on from Shearwell Data Limited. It is possible to request the preassembly of all components.

Power

The Shearwell X6 reader is powered directly by the Handheld Nautiz X6 device (purchasable separately from Shearwell Data Ltd).
The reader may only be used while the Handheld X6 has charge in its batteries.

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Safety Notice

→ The user should never operate the device in proximity (less than 20cm) to the head/torso

→ Point the reader away from the body when using.

→ Do not allow the reader to be submerged in water.

→ Store the reader in a dry place.

→ If needed, the reader may be cleaned using a damp cloth.

→ There are no serviceable parts inside the Shearwell X6 reader.

- Do not attempt to repair or replace any part of the reader.

→ Do not remove the protective cover except to install/remove the SDL330 reader from a Handheld X6 device.

→ This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with this instruction manual, may cause harmful interference in which case the user will be required to correct the interference at his own expense.

Shearwell Data Ltd is not responsible for any damage caused by the user's failure to adhere to the safety rules listed above.

CAUTION **-** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CAUTION **-** The equipment has been designed, constructed, and tested for compliance with FCC Rules that regulate intentional and unintentional radiators.
The user is not permitted to make any modifications to this equipment or use it in any manner inconsistent with the methods described in this User Manual without express approval from Shearwell Data Ltd. Doing so will void the user's authority to operate this equipment**.**

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CAUTION **-** Under Industry Canada regulations, the SDL330's radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain has been chosen so that the equivalent isotropically radiated power (E.I.R.P.) is not more than that necessary for successful communication.
The internal antenna in the SDL330 device has been approved by Industry Canada to work within these limits.

CAUTION **-** This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

ATTENTION **-** L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables auxappareils radio exempts de licence.
L'exploitation est autorisée aux deux conditions suivantes:

1. L'appareil ne doit pas produire de brouillage;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillageest susceptible d'en compromettre le fonctionnement.

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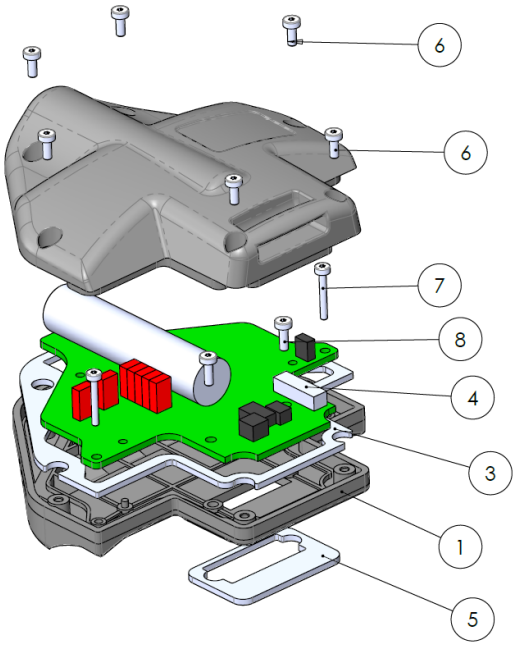
2 Installation

The Shearwell X6 reader is designed to be affixed to a Handheld Nautiz X6, via two screws located either side of the connection pins on the lower part of the casing. The casing must be opened in order to access these screws.

CAUTION - To attach the Shearwell X6 Reader, please follow these instructions carefully. Failure to do so could result in irreparable damage to the circuitry.
Shearwell Data Limited is not responsible for any damages caused by the user during installation.



1. Locate and remove the six 2.2x5 pan head screws in the protective casing of the reader **(6)**. Carefully separate the two parts, taking care not to dislodge the screws from the casing, as these are not fixed.
2. The circuit board should now be visible. There are two M2x6 screws **(8)** and two M1.6x12 screws (**7**) that are fixed directly through the board; these should be loosened slightly to allow ease of installation.
3. Align these four screws, along with the gold pins on the bottom of the reader, with the port and screw threads on the back of the Handheld X6 device.
4. Screw the reader onto the back of the Handheld X6 device, taking care not to overtighten the screws as this can damage the circuit board. Make sure that the screwdriver does not slip and impact with the board.
5. Carefully replace the top cover of the reader, refixing with the six M2.2x5 pan head screws.

The Shearwell X6 reader is now installed on the Handheld Nautiz X6 device. It is designed to work seamlessly with the Stock Recorder App.

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3 Labels

The following symbols are displayed on the device labels and have also been placed in this User Manual for reference and description.

Symbol	Title	Description
CE	CE Mark	The SDL330 complies with the relevant EU Legislation for a handheld RFID device
UKCA	United Kingdom Conformity Mark	Replaces the CE mark as of 1 January 2021 for goods on the market in Great Britain
UKNI	Northern Ireland Conformity Mark	Shows Conformity with the CE mark if the assessment body is located within the UK
	Regulatory Compliance Mark	Represents compliance with the Electrical Equipment Safety System (AUS&NZ)
SN	Serial Number	Indicates the Manufacturer's serial number, unique to every SDL330 device
REF	Model Number	SDL330
R-NZ	New Zealand Compliance	The SDL330 complies with the relevant electrical equipment safety standards (NZ)
	Keep Dry	The SDL330 must be kept dry and should not be used in wet weather conditions

Product Name: **SDL330**
FCC ID: **YVSSDL330**
FCC FRN: **0019632611**

EU Compliance

North America Compliance

According with 47 CFR 15.19 (a) (5):

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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4 Specification

Technical Specification

Frequency	134.2 kHz
Transponder Types	HDX and FDX compliant according to ISO11784/11785
Reading Range	• 50 mm Ferrite Antenna (typical values) o 80 mm HDX transponders o 60 mm FDX-B transponders
Antenna	• Antenna length: 50mm • Type of ferrite: ROD8/150-4B1 • Number of coil turns: 35 • Coil diameter: 8mm • Wire: 175/0.04mm Silk covered litz wire
Interfaces	UART at 3.3V/5V level
Power Supply	• 5V Linear/Stabilized/regulated/Filtered • From the X6
Power Consumption	• RF Activated: 1.5W Max. • RF not activated: 0.3W Max.

Environmental Specification

Housing Material	PC Tarolon 2500 W X0
Dimensions	83mm x 83mm x 26mm
Operating Temperature	0°C to 40°C
Storage Temperature	-20°C to 50°C
Mounting	Mounted with 2 screws to the back of HandHeld Nautiz X6

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5 Industry Standards

International

The SDL330 has full product certification from the International Electrotechnical Commission (IEC).
Furthermore, the SDL330 complies with **IEC 62638-1:2018 CB**, a product safety standard that classifies energy sources and prescribes safeguards against those sources.
Further safety testing confirmed compliance with **EN 50364:2010**, which concerns limitation of human exposure to electromagnetic fields from RFID devices.

United States

The SDL330 has full product certification from the Federal Communications Commission (FCC).
The SDL330 operates at a frequency of 134.2kHz and complies with FCC rules **CFR47:2022 part 15C**, for the *Emission Requirements of an Intentional Radiator*.
These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

Canada

The SDL330 complies with **ISED RSS-210 Issue 10**, which covers the ISED requirements for *Low-power License-Exempt Radio Communication Devices*.
The SDL330 also complies with **RSS-GEN Issue 5**, covering the general ISED requirements for the *Compliance of Radio Apparatus.*

Australia & New Zealand

The SDL330 has received the Regulatory Compliance Mark (RCM) from the Australian Communications Media Authority (ACMA).
The compliance mark also covers New Zealand as the frequency band of 134.2kHz is harmonised across both countries.

Europe

The SDL330 has received full Electromagnetic Compatibility (EMC) testing.
The product complies with the European Telecommunications Standards Institute (ETSI) **EN 301 489-1 V2.2.3 (2019-11)**. This is the harmonised standard for electromagnetic compatibility.
The SDL330 also complies with **EN 300 330-1 V2.1.1 (2016-11)**, which covers EMC for Short Range Devices (SRD) broadcasting in the frequency range of 9kHz to 25MHz.

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6 Support

Contacting Shearwell Data Limited

If you would like further information or assistance than what is given in this manual, then you can contact Shearwell Data Limited in the following ways:

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Support lines are open:
Mon-Fri **8am-5pm**

Website: **www.shearwell.co.uk**

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