



# Operations Manual

**THALASSA-R1** | SCU-DVR3-x-G4.1  
**THALASSA-R2** | SCU-DVR3-xH-G4.1

***NOVASUB Rackmount video recording unit***

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## 1 Abbreviations / Terminology

Ah	Ampere hour
Comms	Communication
DDG	Diver Depth Gauge
DGA	Diver Gas Analyzer
DVR3	Digital Video Recorder Generation 3
HD-TVI	High-Definition Transport Video Interface – A video signal used for transport of HD (1920 x 1080) across long cable lengths
MIC	Microphone
NovaBus	Novasub proprietary data transfer port
PTT	Push To Talk
Vac	Volt AC
xDR	Diver intercom radio

## 2 Introduction

The Surface Control Unit (SCU) is a 19-inch aluminum case that can be mounted in standard 19-inch racks. It contains the DVR3 digital video recorder that can be used to record and watch video signals. This unit is best combined with other Novasub rack units. The system is available as a 2-channel and a 4-channel variant.

The SCU-DVR3 is also available in an SD and an HD system: the THALLASA-R1 and THALLASA-R2 respectively. The SD variant supports resolutions up to 960 x 576 pixels, the HD variant only supports the TVI signal with resolutions up to 1920 x 1080 pixels. The HD variant has additional settings to manage the image quality. The HD variant can be recognized by the adjacent logo on the panel.



### 2.1 DVR3

The Novasub DVR3 is the 3rd generation video recording software developed by Seascope Subsea. The software is completely redesigned from the ground up to accommodate better ease of use, new features, and better image quality.

The software now includes support for touchscreens apart from keyboard and mouse. It also has a new user interface with a taskbar to control all different functions for each diver. These functions include:

- Camera control
- Light control
- Recording
- Clip Recording
- Snapshot
- Quick overlay changes

The system got support for extensive overlay functions, such as text, images, and data. These overlay functions can be configured for each diver separately to accommodate for every situation. The configurations can be saved and restored to make switching between conditions as smooth as possible.

The system can record in HD and SD and has an audio input for every channel, which records within the video file. The different channels can be displayed in various ways to ensure you have your operation's best sight. That also includes the ability to connect to an external monitor on which you can select the channels you want to view. The system has TeamViewer built into the software so you can share your code with anyone who wants to control the system remotely. This also makes technical support more convenient and efficient.

### 3 Specifications

The specifications below are applicable to both the THALLASA-R1 and the THALLASA-R2.

	2 Channels	4 Channels	Type/Parts
Name	SCU-DVR3-2	SCU-DVR3-2	
Channels	2x	4x	
Rack unit	1U		
<b>DVR</b>	Yes		G3
DVR Screen size	-		
SSD Storage for SD	120 GB	240 GB	Factory Upgradable up to 8TB
SSD Storage for HD	240 GB	480 GB	
<b>Connectors (Front)</b>			
Audio Out	1x		Jack 3.5mm (Mono/Stereo)
USB	2x		USB 2.0
<b>Connectors (Back)</b>			
Power	1x 100-240Vac		C14
NovaBus (Data in/out)	1x		Phoenix DFK-MTSB 4 pin
Audio Out	1x		Jack 3.5mm (Mono/Stereo)
Audio In	2x	4x	RCA
Video In for SD	2x Composite SD	4x Composite SD	BNC
Video In for HD	2x HD-TVI	4x HD-TVI	BNC
Monitor	2x		1x DisplayPort
Ethernet	2x		RJ45
USB	4x		USB 3.0
<b>Battery</b>			
Technology	Li-Ion		
Run time	45 min.		Serves only as UPS backup
Charging time	1 hours		
<b>Size</b>			
Rack Unit	1U		
Width	482.6 mm		
Depth	195 mm		
Height	43.7 mm		
Build-In Depth	254 mm		
Weight	3.1 kg		

## 4 Maintenance

The system is semi ruggedized. Although it is designed to withstand rough circumstances, you must treat it with the same proper care and caution as any other electronic instrument.

Have your system serviced each 2 years by a Novasub Authorized Service Center. This service will include a general operational check, replacement of the battery, and overall upgrade of firmware. The service requires special tools and training.

### 4.1 Maintenance scheme

By Customer	
Cleaning	When needed
Drying panels	During operations and before storing
Charging battery	Regularly

By Novasub Authorized Service Center	
Servicing	2 years
Internal backup battery replacement	5 years



#### WARNING

- It is not allowed to disassemble any part of the system or to repair the product by unqualified personal, in that case all warranties are void. Qualified personnel are trained by Novasub.
- Avoid large amount of water on the control and monitor panels.
- DO NOT use the system if you detect any moisture or water inside and return it to your dealer.
- The system is capable of permanently damaging the hearing of a person, make sure you never put the volume too high. When beginning, start with a low volume and gradually increase it to the desired setting
- The system should not be used in snow or in a thunderstorm.



#### CAUTION

- Protect the unit from shock, extreme heat, direct sunlight, and chemical attack.
- The system cannot withstand the impact of heavy objects like air cylinders, nor chemicals like gasoline, cleaning solvents, aerosol sprays, adhesive agents, paint, acetone, alcohol, etc. Chemical reactions with such agents will damage the seals, case and finish.
- Do not use compressed air to blow water off the unit.
- When using the system, make sure it is set up horizontally in a safe environment on a flat surface with enough ventilation and lighting. Make sure you can control the system in an ergonomic way.
- When the system is charged it should use a charger with a ground.



#### NOTE!

- The system is not fully waterproof, it can withstand some water drops on the monitor panel and control panel. Be sure to whip off any water drops or moisture from the panels.
- If the software freezes, then restart the system. If this does not fix the issue, then return the system to your dealer.
- If the software crashes multiple times, then return the system to your dealer.
- If the system is under a voltage, then immediately shut it off and return it to your dealer
- We highly recommend closing the lid when the system is not in use. This extends product life.

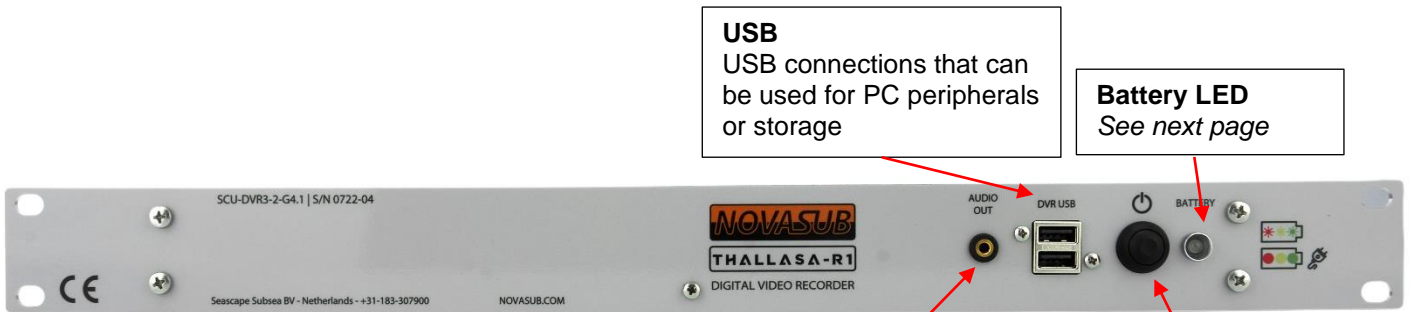
## Disposal of the device



Please dispose of the device in an appropriate way, treating it as electronic waste. Do not throw it in the garbage. If you wish, you may return the device to your nearest Novasub dealer

## 5 General

The SCU-DVR3 is a small formfactor PC that runs the DVR3 software. **To operate the system you will have to connect a monitor to the DisplayPort 1 output and connect a keyboard and mouse to the system.** The system can be seen below. Please note that there are connections to the front and back of the system.

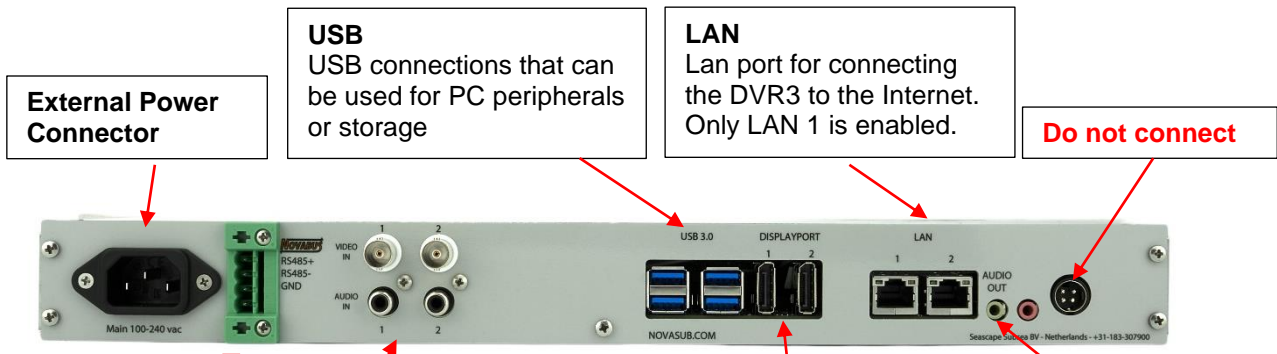


**USB**  
USB connections that can be used for PC peripherals or storage

**Battery LED**  
See next page

**Audio Out**  
The audio out port is only used for hearing audio when using the Player in the DVR3 software. This port has no live audio when diving.

**Power On**  
See next page



**External Power Connector**

**USB**  
USB connections that can be used for PC peripherals or storage

**LAN**  
Lan port for connecting the DVR3 to the Internet. Only LAN 1 is enabled.

**Do not connect**

**NovaBus**  
The NovaBus connector is used for communication between different Novasub systems. How to connect this is explained further into this manual.



**Video & Audio connections**  
The video and audio in are the main inputs for the system. These are the video input and the audio input that are displayed and recorded.  
  
*See manual: DVR3 – Video Software*

**Monitor**  
The DisplayPort's are used for connecting monitors to the system. DisplayPort 1 is used for the main monitor and DisplayPort 2 is used for the "external monitor".  
  
*See manual: DVR3 – Video Software*

**Audio Out**  
The audio out port is only used for hearing audio when using the Player in the DVR3 software. This port has no live audio when diving.

### 5.1 Basic Controls

Below you find some of the basic controls that are on almost all panels.

	<p>Power button</p>	<p>ON Press and hold for 1 second to start up the system. This will start up the DVR3.</p> <p>OFF Press and hold for 1 second to shut down the system. This will shut down the DVR3.</p>												
	<p>Battery indication</p>	<p>This LED shows the battery status. Blinking means that is working on battery. Solid means that it is connected to an external power source.</p> <table border="1" data-bbox="566 616 1465 745"> <thead> <tr> <th></th> <th>Battery</th> <th>External power</th> </tr> </thead> <tbody> <tr> <td>50-100%</td> <td>Blinking Green</td> <td>Solid Green</td> </tr> <tr> <td>25-50%</td> <td>Blinking Yellow</td> <td>Solid Yellow</td> </tr> <tr> <td>0-25%</td> <td>Blinking Red</td> <td>Solid Red</td> </tr> </tbody> </table>		Battery	External power	50-100%	Blinking Green	Solid Green	25-50%	Blinking Yellow	Solid Yellow	0-25%	Blinking Red	Solid Red
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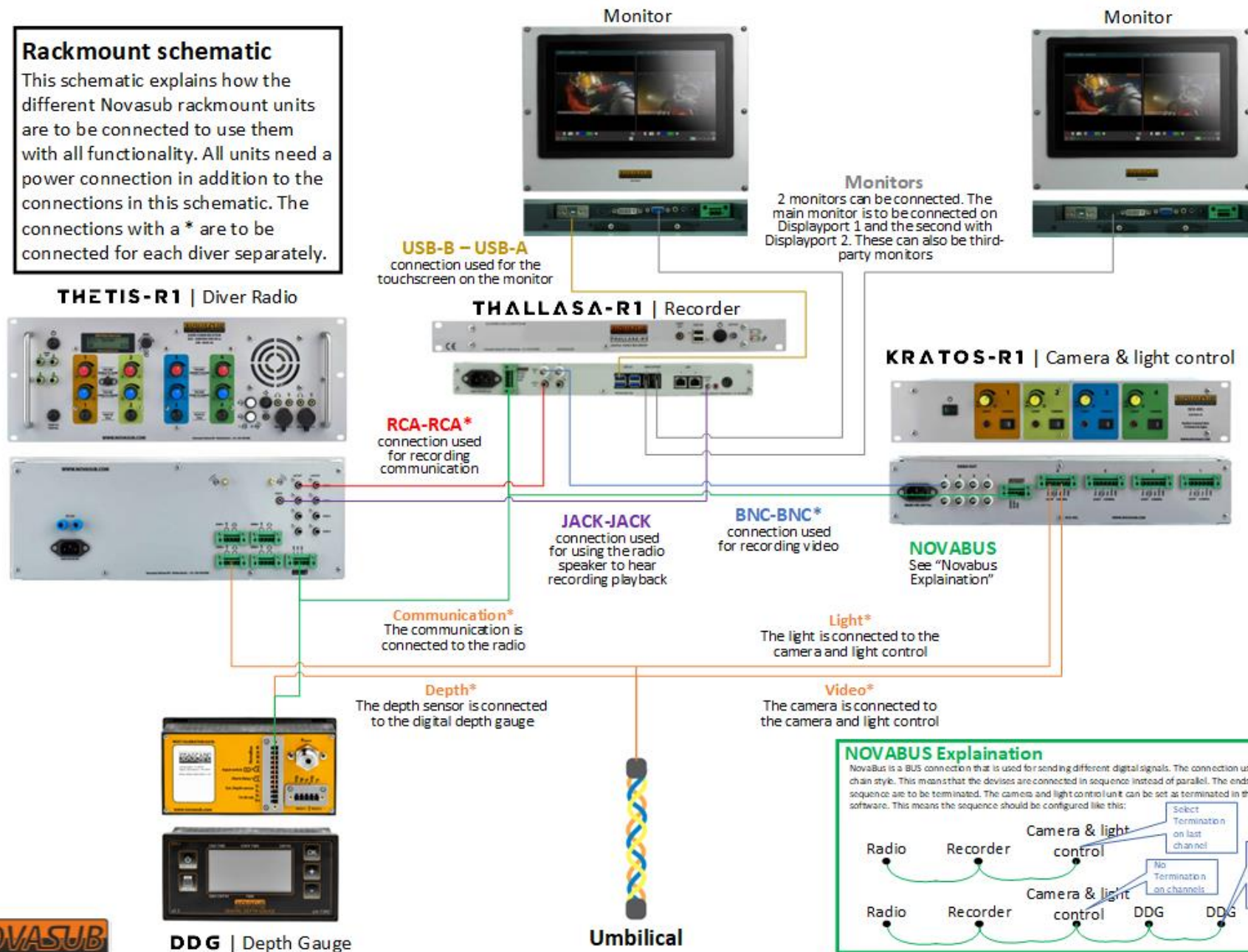
### 5.2 Rackmount units

The SCU-DVR3 is best combined with other Novasub rackmount units. How to connect these units to each other can be seen in the schematic on the next page.



### Rackmount schematic


This schematic explains how the different Novasub rackmount units are to be connected to use them with all functionality. All units need a power connection in addition to the connections in this schematic. The connections with a \* are to be connected for each diver separately.

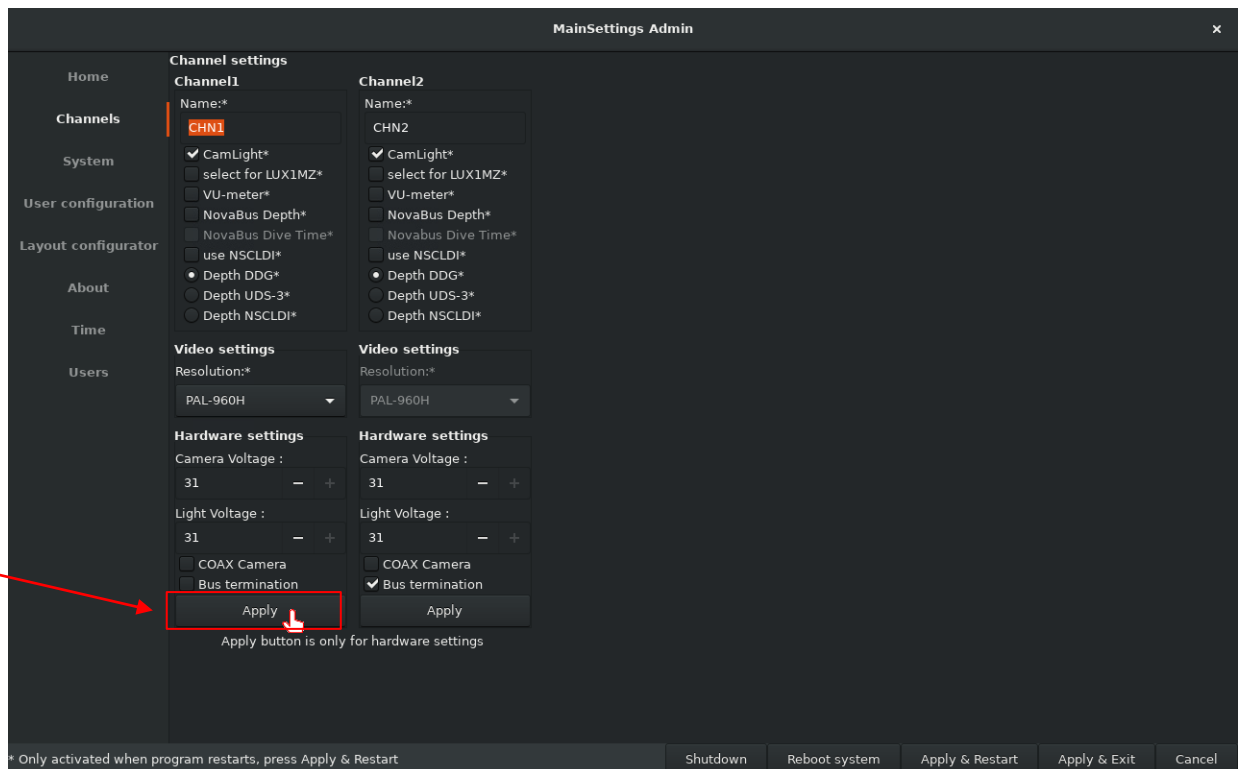


## 6 Hardware settings

One of the settings possible are the hardware settings for a channel. These settings can be found under: Settings : Channels. These settings can be applied to a camera and light control rackmount unit (KRATOS-R1). To do this you can follow the steps below:

The setting can only be changed using the software if the physical switches inside the KRATOS-R1 are set to Twisted Pair (Balanced). How to check this can be found in the manual of the [KRATOS-R1](#).

1. Connect both system to each other using the NovaBus connector.
2. Power up both systems
3. Connect a display to the SCU-DVR3 (THALLASA-Rx)
4. Go to  (Settings) in the DVR3
5. Log in as Admin
6. Go to "Channels", here you will find the "hardware settings" group:\*



7. Now change the hardware setting and press Apply
8. That channel is now set up as desired.

\*If the hardware settings are not visible the please check the following things:

- You are logged in as "Admin" on the "Home" tab
- The SCUxs-VL (KRATOS-R1) is connected to a power outlet
- The SCUxs-VL (KRATOS-R1) is ON
- The systems are connected to each other using the NovaBus connector
- Make sure the DVR3 software is Build 28 or higher, see "About" in DVR3 settings

## 7 DVR3 – Video Software

All information for the controls of this subsystem can be found in the manual:

*DVR3 – Video Software*

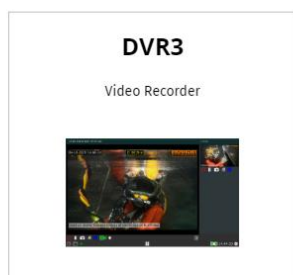
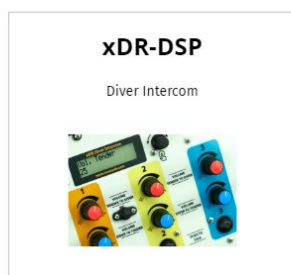
If your system has a DVR3 it can also be found in the “Help” function. That can be opened with the question mark in the bottom of the screen.

All manuals and resources can be found under the “Support” tab on the website: [www.novasub.com/support/](http://www.novasub.com/support/)



## Support

### Software





### Equipment





## 8 Connectors

Below you will find all the pin diagrams that can be used.

IEC	Power 100-240 vac	
Type	C14	
Mating type	C13	

Audio input	Audio 1&2	
Type	RCA socket	
Mating type	RCA plug	
<b>Function</b>	<b>Pin layout</b>	
Audio +	centre pin	
Audio -	connector housing	

Video input	Video 1&2	
Type	BNC socket female	
Mating type	BNC plug male	
<b>Function</b>	<b>Pin layout</b>	
Video +	centre pin	
Video -	connector housing	

Data	NovaBUS	
Type	DFK-MSTB 2,5/ 4-G-5,08	
Mating type	MSTB 2,5/ 4-G-5,08	
<b>Function</b>	<b>Pin layout</b>	
RS485+	1	
RS485-	2	
GND	3	
-	4	

## 9 Help & Support

Further details about a Warranty Statement can be found at the chapter 10 Warranty

For technical support contact your local a Novasub Authorized Service Center or Seascope Subsea BV. Seascope Subsea BV is the manufacturer of all Novasub branded products.

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If you have cause to use our technical support service, please make ensure that you have the following details at hand prior to calling:

- system serial number
- firmware version and build number
- fault description
- any remedial action implemented

## 10 Warranty

Novasub warrants that during the Warranty Period Novasub or a Novasub Authorized Service Center (hereinafter Service Center) will, at its sole discretion, remedy defects in materials or workmanship free of charge either by a) repairing, or b) replacing, or c) refunding, subject to the terms and conditions of this Limited Warranty. This Limited Warranty is only valid and enforceable in the country of purchase.

### 10.1 Warranty Period

The Limited Warranty Period starts at the date of original retail purchase. The Warranty Period is two (2) years for the product. Warranty applies only on manufacturing defaults. The Warranty Period is one (1) year for accessories, including mounting hardware and connector cables.

### 10.2 Exclusions and Limitations

This Limited Warranty does not cover:

1. a) normal wear and tear;  
b) defects caused by rough handling or;  
c) defects or damage caused by misuse contrary to intended or recommended use;
2. user manuals or any third-party items;
3. defects or alleged defects caused by the use with any product, accessory, software and/or service not manufactured or supplied by Novasub;
4. battery.

### 10.3 This Limited Warranty is not enforceable if item:

1. has been opened beyond intended use;
2. has been repaired using unauthorized spare parts; modified or repaired by unauthorized Service Center;
3. serial number has been removed, altered or made illegible in any way, as determined at the sole discretion of Novasub;
4. has been exposed to chemicals. Novasub does not warrant that the operation of the product will be uninterrupted or error free, or that the product will work with any hardware or software provided by a third party.

### 10.4 Limitation of Liability

To the maximum extent permitted by applicable mandatory laws, this Limited Warranty is your sole and exclusive remedy and is in lieu of all other warranties, expressed or implied. Novasub shall not be liable for special, incidental, punitive or consequential damages, including but not limited to loss of anticipated benefits, loss of data, loss of use, cost of capital, cost of any substitute equipment or facilities, claims of third parties, damage to property resulting from the purchase or use of the item or arising from breach of the warranty, breach of contract, negligence, strict tort, or any legal or equitable theory, even if Novasub knew of the likelihood of such damages. Novasub shall not be liable for delay in rendering warranty service.