SCU-1DR(VL) Manual

Operations Manual

SCU-1DR(VL) – 1 Diver radio optional with video camera & light control.

NOVASUB Surface control unit diver radio with integrated camera and light control.

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WARNING **YOU MUST READ** the SCU-1DR(VL) manual before using the SCU-1DR(VL). Failure to do so may lead to improper use, serious injury or death. Care should be taken to follow the instructions correctly and also conduct a separate risk assessment prior to commencing work

WARNING	Is used in connection with a procedure or situation that may result in serious injury or death.
CAUTION	Is used in connection with a procedure or situation that will result in damage to the product.
NOTE!	Is used to emphasize important information.

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.

1 Help & Support

First please read this manual thoroughly. Further details about a Warranty Statement can be found at the chapter 5 - Warranty.

For technical support contact your local a Novasub Authorized Service Center or Seascape BV.

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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

2 Safety measurements

The content of this manual may be changed without prior notices. Seascape cannot under any circumstances be held liable for any special, indirect or incidental damages in connection with, or as a result of the purchase or use of this product and items that come.

2.1 Safety precautions

Do not attempt to use the SCU-1DR(VL) without reading this instruction manual in its entirety, including all the warnings. Make sure that you fully understand the use, displays and limitations of the instrument. If you have any questions about the manual or the SCU-1DR(VL), contact your Novasub Authorized Service Center before using the SCU-1DR(VL).

Always remember that **YOU ARE RESPONSIBLE FOR YOUR OWN SAFETY!**

3 Installation

The Novasub SCU units are standard 19” rack mountable. The SCU-1DR(VL) can be fitted to the 19” rails with adequate screws. We advise to use plastic washer between the screw head and the panel. This avoids damaging the panel and losing the screw do to vibration.

WARNING

- Make sure there is enough forced or natural ventilation available around the SCU unit
- Do not cover the top and bottom of the SCU, the top and bottom are open for ventilation
- Avoid any moisture onto the SCU

4 Maintenance

The SCU-1DR(VL) is a 19” rack case. You must treat it with the same proper care and caution as any other electronic instrument.

4.1.1 Maintenance by authorized dealer or distributor

Have your SCU-1DR(VL) serviced 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.

4.2 Maintenance scheme

By Customer	
Charging battery	Regularly

By Novasub Authorized Service Center	
Servicing SCU-1DR(VL)	2 years
Internal backup battery replacement	2 Yearly

WARNING

- It is not allowed to disassemble the SCU-1DR(VL) or to repair the product by unqualified personal or disassemble part, in that case all warranties are void.
- Avoid large amount of water on the control and monitor panels.
- DO NOT use the SCU-1DR(VL) if you detect any moisture or water inside.

CAUTION

- Protect the unit from shock, extreme heat, direct sunlight, and chemical attack.
- The SCU-1DR(VL) 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.

NOTE!

- The SCU-1DR(VL) is not fully waterproof, it can withstand some water drops on control panel. Be sure to whip off any water drops or moisture from the panels.

5 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, unless local law stipulates otherwise.

5.1 Warranty Period

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

5.2 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 (only first 6 month after purchase is under warranty).

5.3 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 or excessive water spraying. 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.

5.4 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.

6 Glossary

The SCU-1DR series have the latest audio electronics for superior audio both at the diver and tender end. The SCU-1DR can be supplied with integrated LED light controller, video camera controls and USB video capture to connect to PC for video recording and editing. The SCU-1DR is standard fitted with NiMH rechargeable batteries with a smart charger. The built in Microphone makes it able to have a crystal clear audio at the diver end. The SCU-1DR models are supplied with an external power supply. The SCU-1DR is also fitted with an audio input to connect a MP3 player*. The diver can listen to music. The system works both with 2 and 4 wire. In 4 wire comms you can also select full duplex comms, no PTT pressing is needed.
*works only with 4 wire comms
The VL extension indicates that the SCU has a built-in camera and light controller. The Camera controller (V) has a standard video line driver or coax amplifier with a composite video output. The camera power supply is by default 32 vdc and can be set by manufacturer to 12,15 or 24 vdc. The Light controller (L) is a Novasub LED light controller. The controller can dim the LUX and LUX6 range of LED-lights or any other volt regulated LED light up to max. of 25 watts.

The unit also has a NovaNET (rs485) connection to interface with other Novasub systems, like the SCU-DVR2 or DDG. The NovaNET makes it possible to share data and control camera and light from the SCU-DVR2 recorders or NSDVRsoft, video recording&control software.

There are standard 4 models:

- **SCU-1DR** : 1 diver comms
- **SCU-1DRL** : 1 diver comms with LED light control
- **SCU-1DRVL** : 1 diver comms with video & LED light control

Features

- ***High Power Audio***
- ***Multi-pin & Banana socket connections***
- ***2 and 4 wire communication***
- ***Automatic battery charger and conditioner***
- ***Audio In (MP3)***
- ***Camera & Light Control***

6.1 General Specifications

Specifications

Ext. Power supply	:	100-240 vac, 65 watt	**Battery life**	:	10 hours, average. (comms only) , LED light and video camera require power supply
Light control (Only L and VL versions)	:	0-100 % dimmable light control for the Novasub Lux3R or 6R and up to 25 watt halogen 12v lights	**Int. Power supply (Battery)**	:	12 vdc NiMh 2,3 Ah battery with battery condition monitoring LED's
Video out (Only VL version)	:	2x, 1Vpp/75 Ohm	**Audio Out**	:	2x signal of 1Vpp
Diver volume control	:	Potentiometer control	**Tender volume control**	:	Potentiometer control
Video control (Only VL version)	:	Video transmission over twisted pair or coax, auto-tune to 600 m, 32 vdc (12,15,24 vdc optional)	**External Speaker**	:	Amplifier 10W/4-8 Ohm with volume control
Communication	:	2 wire - simplex, 4 wire - full duplex	**Dimensions**	:	19" 2U high – 265 mm deep (excluding connectors)

Connections

Audio out	:	2x RCA (Cinch)	**Audio in**	:	3.5 mm jack socket
Headset/Mic	:	Bulgin 8pin, audio out, Mic in, PTT	**Bobox (optional)**	:	Bulgin, 8 pin
Umbilical connector	:	Multi pin circular connector, comms, camera and light	**Diver comms**	:	2x2 Banana sockets (Parallel with Multi-pin) (Mic, Head diver)
Video out	:	2x BNC	**DATA**	:	Bulgin, 8 pin
Power in	:	IEC C14 mates with C13	***novaNET***	:	Screw terminal
	:				

6.2 Optional

- Headset with Mic
- Handheld Mic
- BoBox ; Breakout Box for remote comms control with both divers, 50 m cable.
- Novasub Camera and lights

Headset

Hand Mic

Bobox

NSBCB camera

LUXR 3&6 Led lights

6.2.1 BOBOX

The Bobox can be ordered at new order or post ordered for integration on previously built systems.
The Bobox is an optional Break Out Box to use as an remote extension for 2 diver communication. The Bobox is standard supplied with 50 m cable. The Bobox has a built in amplifier and speaker. Also PTT for each diver and volume control of the speaker and divers.

Also an external Headset/Mic can be connected.

All Tender-Diver and Diver communication are heard on the Bobox as well as the SCC.

Also the SCC controls are fully functional.

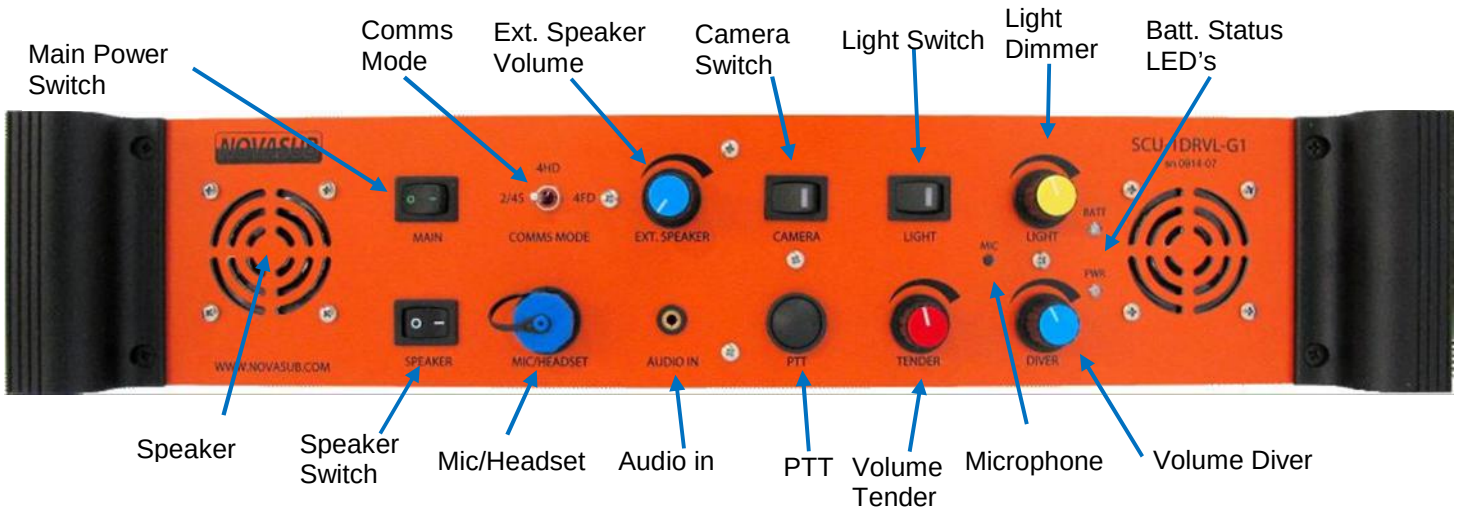
Application:

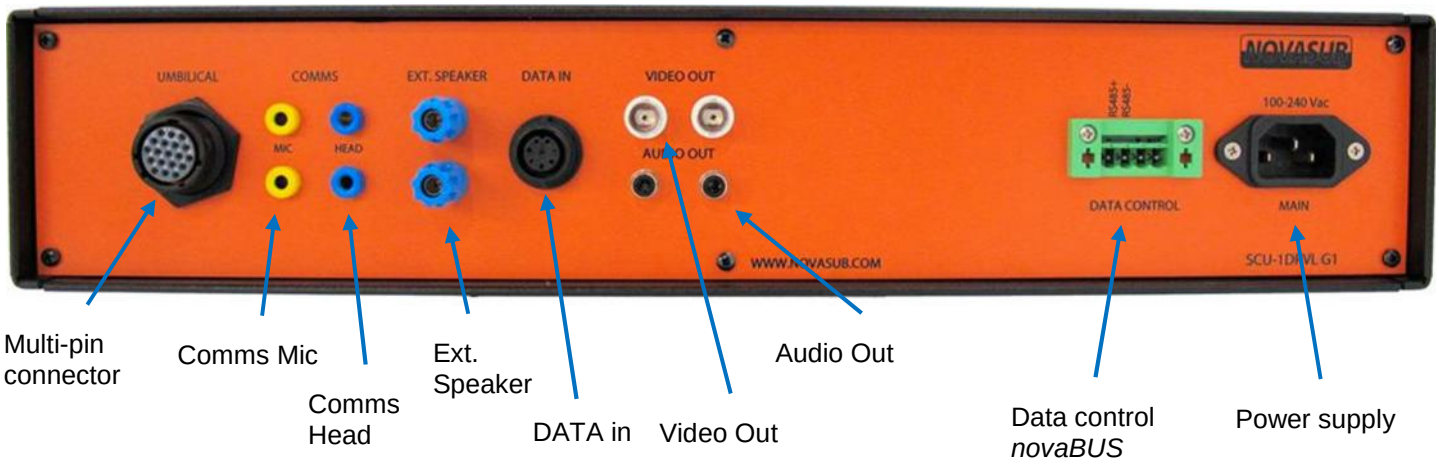
- Remote setup out of the diver container at the diver launching platform
- Remote setup in a control room for any machinery
- Remote setup in a client area

The Bobox is connected to an optional connector installed on the SCC.

7 General Functions

The SCU-1DR(VL) has the following control function and connections.





7.1 Main Power

The Main power switches on and off the complete unit.
When the external power supply of 100-240 vac is plugged in the back of the case the internal battery will be automatically charged. The systems requires max 65 watts.
The Charge level LED's will indicate that the system is being charged and the status of charge. Charging time for a fully discharged system will take approx. 10 -12 hrs.
When system is fully charged the batteries are automatically trickle charged to maintain full capacity.
The Main power does not need to be switched on to the charge the system.

Charge level 	Led BATT indicates the level of the battery (Solid) when there is external power connected and charging the internal battery. ● BATT is low ● BATT is medium ● BATT is full

7.2 Diver Communications

The diver audio is standard set for a 2 wire communications (simplex).
The divers can only speak to each other when the surface operator pushes the cross-talk switch to the desired direction.

The SCU-1DR(VL) can be set for 4 wire communication (duplex). The audio In can be used and the diver can listen to the audio input from a Smart Phone or MP3 player or any other audio device.
When set for Full duplex, there is a full open communication (conference) between the divers and surface. No need of pressing the PTT.

7.2.1 2 wire comms configuration

The SCU-1DR(VL) is standard fitted with a 10 pin multipin connector.
The audio comms for 2 is connected to the diver umbilical via the multipin connector (pins H,J) or via the yellow Banana sockets

7.2.2 4 wire comms configuration

The SCU-1DR(VL) is standard fitted with a 10 pin multipin connector.
The audio comms for 4 is connected to the diver umbilical via the multipin connector (pins H,J,G,K) or via the yellow and blue Banana sockets

7.2.3 Comms Mode

The Comms Mode is a selection comms mode switch. This allows the use of a 4 wire comms system and still be able also to use the system as a 2 wire system.
The 4 wire configurations has 3 user modes:
2S - 2 or 4 wire simplex
4HD - 4 wire Half duplex surface to diver, full duplex diver to diver
4FD - 4 wire Full duplex, surface and divers full duplex without any PTT

7.2.4 2/4S - 2 wire simplex

This mode is the same as the standard comms when using 2 wire. This works with either 2 or 4 wires comms cable configuration. The diver will always be heard at the surface and the Tender needs to push the PTT switch to talk to the diver.

7.2.5 4HD – 4 wire Half Duplex

This mode uses a 4 wire comms cable configuration. The Diver can listen to music which is connected to the audio In. The audio in can be an audio signal from any headphone output of a MP3 player or any other audio device.
The Tender needs to push the PTT button to speak to the divers. When you press the PTT to audio in the diver will be muted.

7.2.6 4FD- 4 wire Full Duplex

This mode allows to have a full open communication between diver and Tender without using the PTT buttons. Like a conference call.

7.2.7 Comms Volume control

The SCC has a Tender and Diver volume control.
The Volume Diver is the volume control of what the diver hears
The Volume Tender is the volume control of what the tender hears

7.2.8 Internal MIC

On the panel between the Diver and Volume Tender control, the internal MIC is positioned. It is not needed to place your mouth close the Mic. Normal arm length distance is sufficient to pick-up the Tender speaking volume.

7.2.9 Push To Talk (PTT)

The button per diver to press when the Tender want's to speak to the diver.

7.2.10 Internal Speaker

The Internal Speaker can be switched off with the rocker switch Speaker. This can be used when operating with the Mic/Headset.

7.2.11 External Speaker

The SCC has a built in 10 watt amplifier to which an external 4-8 ohm (10-30w) speaker can be connected. The external speaker has its own volume control.
All conversation, divers and tender are heard on the ext. speaker.

7.2.12 Audio In

The audio can be used to connect a music audio player. The audio can be heard at the diver end, only with the 4 wire configuration. The audio connector is a 3,5 mm stereo Jack.

7.2.13 Headset / Mic

The external headset/Mic connector can be used to connected the supplied headset with mic and used with the SCC built in PTT to speak to the diver.
Another option is to us the headset/mic connector for an optional MIC with PTT to talk to the divers. The internal speaker can be switched of if required.

When the Headset with Mic or the MIC only are connected, the internal MIC is automatically switched off.

MIC-PTT and Headset/Mic are optional Novasub products

7.3 Camera & light

The SCC-1DRL and SCC-1DRVL version have or only a LED light controller or a LED light controller with video camera control.

7.4 Sensor DATA In (Optional)

The onboard camera&light controller can interface an optional PCB with input of any type of sensor.
The type of sensor and data input can be rs232/422 or 485, 4-20 ma and 0-10v.
This data can be used to be displayed on the video text overlay of a SCU-DVR2 or the novasub-DVR software.

7.5 Data control (novaNET)

7.5.1 Data Control

The Data control is a rs485 2 wire BUS interface connection. All G3 Novasub SCC and SCU units are fitted with this BUS connection which we call ***novaNET.***
With novaNET connection between the various SCC and SCU units you can control the camera & light on/off and dimming, and data is being sent to and from the units.

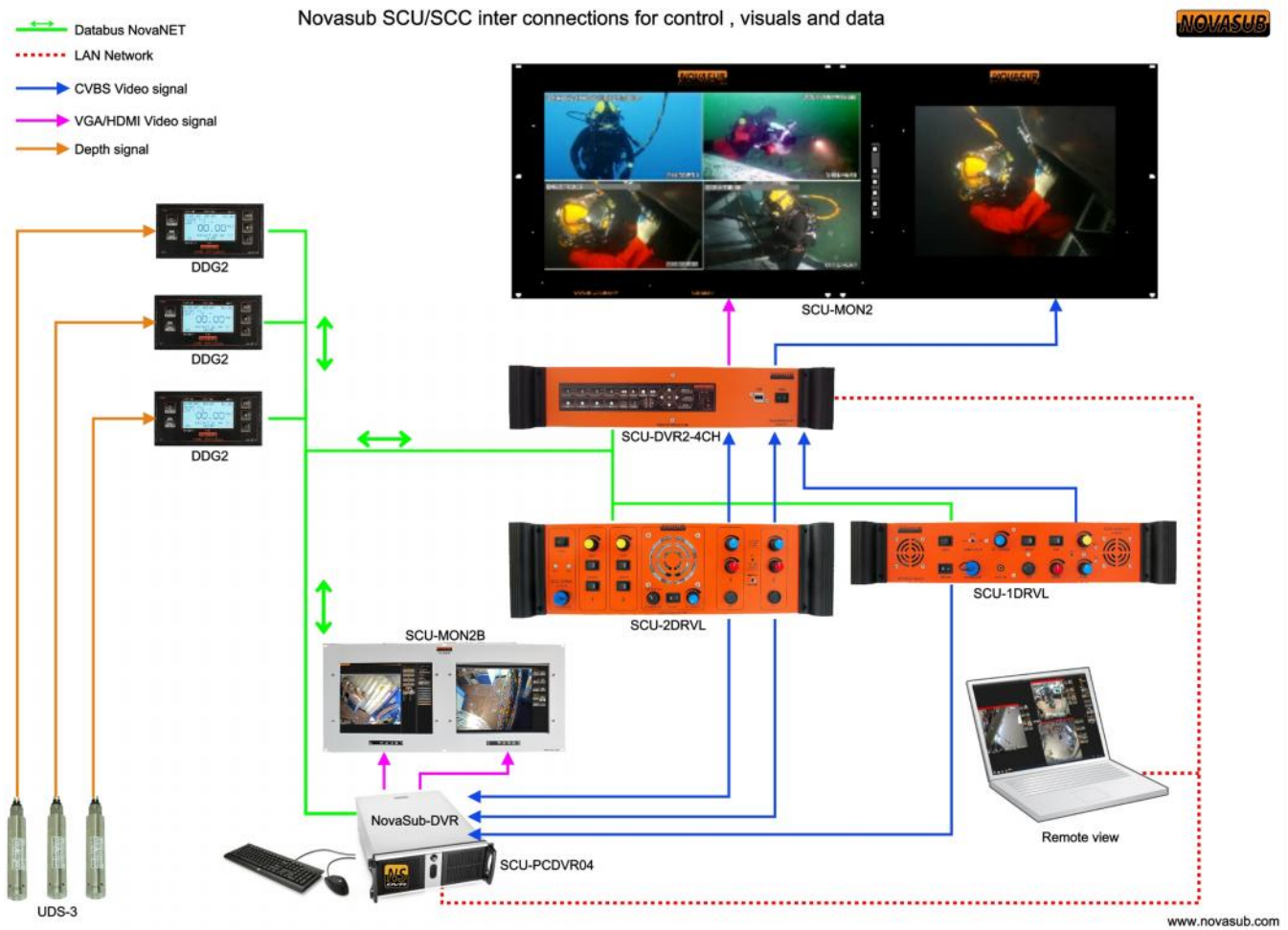
7.5.1.1 novaNET systems

Novasub has released the following units with the novaNET interface:

- SCU-1DRVL
- SCU-2DRVL
- SCU-DVR2 (1CH,2CH &3CH)
- SCU-PCDVR04
- SCC-PCDVR04
- DDG1
- DDG2
- SCU-xVL

7.5.1.2 How it works

With novaNET controls you can control cameras & lights from any SCU or SCC unit within the network. Each camera & light is addressed with CH1 up to CH16. This is set during manufacturing. There will be always be one unique address 1. But address 1 (CH1) with the belonging camera and light can be controlled from more than one SCC/SCU unit. All works in parallel, with overrule from the last SCC/SCU control command send. This means you can switch on the camera with the switch on the SCU-1DRVL and switch it off with a SCU-DVR2. The switch on the SCU-1DRVL is still in the on position but the LED on the switch will be off. You can switch on again with the SCU-DVR2 by pressing on CAM or with the SCU-1DRVL by toggling the switch off and on again. The same is for the lights.
If you switch on from a SCU-DVR2 or from the NovasubDVR software, the LED in the swith will lid up, even if the switch on the SCU-1DRVL is in off position.

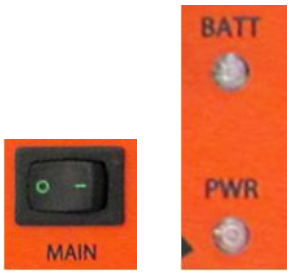


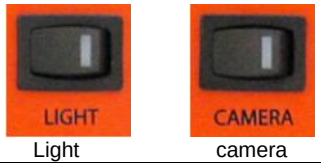
8 Main Operating

This chapter describes the main basic operations to be able to start the system and switch on camera and light (only L, VL versions)

8.1 System startup

Connect the main cable with the camera and light, connect the power supply. Make sure that the actual camera and light are connected at the other end of the cable.
Follow next steps to quick start the system.

<table>
<tr><td>Plug in Main power cables</td><td>Plug in external power supply 100-240 vac to 24 vdc. The system will automatically start charging the internal battery. Even with the main power switch off.</td><td> 
</td></tr>
<tr><td>Connect cable</td><td>Connect cable with comms, camera and light</td><td> 
</td></tr>
<tr><td>Switch Main power on</td><td>
<table>
<tr><th>BATT</th><th>PWR</th><th>Status</th></tr>
<tr><td>● ●</td><td>●</td><td>System on and external powered. Battery charging;
● = Full
● = Empty and charging</td></tr>
<tr><td>○</td><td>✳ ✳</td><td>System on and running on battery. Battery discharging;
✳ = Empty
✳ = Full</td></tr>
<tr><td>✳</td><td colspan="2">LED on and Blinking</td></tr>
<tr><td>●</td><td colspan="2">LED on and solid</td></tr>
<tr><td>○</td><td colspan="2">LED off</td></tr>
</table>
</td><td> 

Battery / Power status</td></tr>
<tr><td>Comms Mode</td><td>For Simplex 2 or 4 wire comms set, the switch to 2/4S</td><td> 
</td></tr>
<tr><td>Speaker</td><td>Press the Speaker switch to the right with the 1 down. You can now hear the diver audio on the internal speaker</td><td> 
</td></tr>
<tr><td>Switch on the Camera and light
(Only L & VL)</td><td>Press the camera switch to the right, the CAM green LED switches on.
Press the light switch to the right, the green LED indicates that the light is powered. Increase and decrease light intensity with the Yellow knob.</td><td> 

Light camera</td></tr>
</table>

8.2 Camera and light control (Only L and VL models)

The camera and light are switched on with rocker switches. Both have a LED indicating that power is supplied to the camera and light. The light intensity can be controlled with rotation Knob

Switch on the Camera	Press the camera switch to the right, the CAM green LED switches on.	
Switch on the Light	Press the light switch to the right, the green LED indicates that the light is powered. Increase and decrease light intensity with the Yellow knob.	 

8.2.1 Camera signal

The SCC has a built in auto tunable video line driver for each camera. This video line driver allows the use of video signal over twisted pair or coax cable up to a maximum length of 600 m. Also the line driver can be set for coax cable use.
The Novasub cameras are available with video line driver for video signal over twisted pair and coax.
The Novasub cameras set for Twisted Pair can also be used on Coaxial umbilical's or cables.
The power supply to the camera is standard 24 Vdc, if required the voltage can be set to 12 or 15 Vdc. This is a factory setting.*
**Only on order of SCC-1DRVL.*

8.2.1.1 Why use video transmission over Twisted pair

Novasub has developed video transmission converters that makes it possible to transfer a video composite signal over a standard twisted pair cable. The latest converters are Auto tuneable for cable length up to 600 m. All standard Novasub camera and topside control units have these video transmission converters built in. The cameras have a composite video to twisted pair signal transmitter, and the topside units have a twisted pair signal to composite video receiver.

All Novasub cables and umbilicals, are standard fitted with screened twisted pairs (STP). These STP are used for all possible data/audio and video transmission.
Novasub does not use Coax for video signal transmission. The reason is the mainly weak and interference sensitive Coax cable.

NOVASUB umbilical and cable uses video signal transmission over shielded twisted-pairs (STP).
The advantages of twisted-pair are;

- more reliable video transmission through less interference(electromechanical- or radio frequency interference)
- higher movability through higher flexibility
- STP is a stronger cable then coax
- higher flexibility in applications, twisted-pair cabling is the standard in data transfer worldwide
- easier to install/repair/handle

8.2.2 Light controller

The SCU-1DR(VL) is standard fitted with a LED light controller that matches the Novasub LUX3 and LUX6 lights.
The LED controller regulates the Ampere from 0-1,6 A at 24 vdc.
An Halogen light bulb up to max. 25/30 watts can also be controlled directly from the LED-controller.
Also other brands of LED light can be controlled, however they need to be internal protected against a max.of 1,6 Amp. Current and a 24 Vdc voltage.
If required the max. output Ampere can be set to a lower and higher value. This is a factory setting .

9 Panel Connections

The SCU-1DR(VL) has connectors on the front panel and at the backside.
The following connectors are on the front panel.

9.1 Head/Mic

The Mic/Headset connector can be used to connect the Mic/headset or only a handheld MIC. Multipin connector for a Headset wit Mic or Handheld Mic with PTT. Both are optional Novasub products.

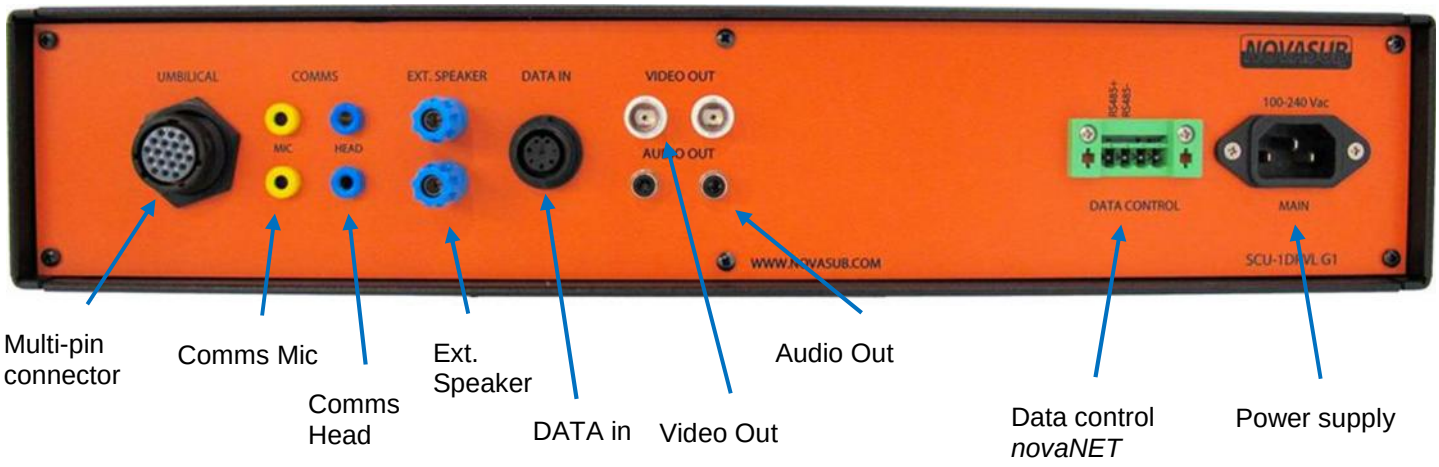
Mic/Headset	**SCC 01-019**
Type	Bulgin,PX0412/08S
Mating type	PX0410/08P
Function	Pin layout
12 vdc	1
PTT	2
Speaker/mic -	3
Int. Mic off	4
Mic +	5
Speaker +	6
nc	7
nc	8

9.2 Audio In

The audio can be used to connect a music audio player. The audio can be heard at the diver end, only with the 4 wire configuration. The audio connector is a 3,5 mm stereo Jack.
The volume control of the audio in is realized by the audio player you connect.

10 Back connections

The SCU-1DR(VL) is fitted standard with 4 connectors which are at the backside of the case.



10.1 Power supply

The Power supply connector is a standard IEC C14 connector socket.

Power	IEC	
Type	C14	
Mating type	C13	

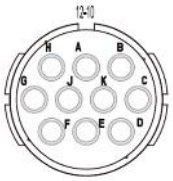
10.2 Main cable connection

The camera and light connector is a multipin connector. Different types and makes can be used, depending on the clients requirements.

10.2.1 Standard connector, SCU-04-09a

The SCU-1DR(VL) is standard fitted with a 10 pins multipin connector.

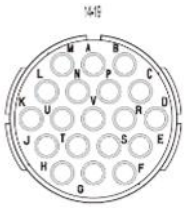
Diver	SCU 04-09a
Type	Souriau, UTS 71210S
Mating type	UTS6JC1210P
Function	Pin layout
GND Light	A
Vcc Light	B
GND Cam	C
Vcc Cam	D
Video +	E
Video -	F
Comms Mic	H
Comms Mic	J
Comms Head	G
Comms Head	K



10.2.2 Connector with sensor data, SCC-04-09c

This connector also can interface a depth sensor or other sensor to the DSI databoard.

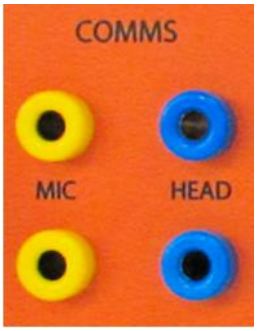
Diver	SCC-04-09c
Type	Souriau, UTS 714E19S
Mating type	UTS6JC14E19P
Function	Pin layout
GND Light	A
Vcc Light	B
GND Cam	C
Vcc Cam	D
Video +	E
Video -	F
Depth V+	R
Comms Mic	H
Comms Mic	J
CP+	N
Data +	L
Data -	M
Depth Out+	P
Comms head	G
Comms head	K



10.2.1 Comms Banana sockets

Parallel to the Comms MIC and Head are the banana sockets connected. These can be used in a 2 or 4 wire configuration to connect the divers comms cable without the use of the Multipin connector.

Diver	2 & 4 pin comms
Type	Banana sockets
Mating type	Banana plugs
Function	Pin layout
Comms MIC	Parallel to comms MIC multipin connector H,J
Comms MIC	
Comms Head	Parallel to comms Head multipin connector G,K
Comms Head	



Yellow = Mic
Blue = Head

10.2.2 Ext. Speakers

The externl speaker banana screw sockets.

Ext. Speaker	speaker output
Type	Banana screw socket
Mating type	Banana plug
Function	Pin layout
Speaker +	
Speaker -	

10.2.3 Audio Out

The 2x audio out is the audio from the diver and tender.
The audio out is a RCA (Cinch) connector

10.2.4 Video Out (Only VL models)

The 2x video out is a composite video signal direct from the camera video signal. The connector is a 75 ohm BNC connector.

10.2.5 Data Control (novaNET)

The Data control is a rs485 2 wire BUS interface connection. All G3 Novasub SCC and SCU units are fitted with this BUS connection which we call ***novaNET.***
With novaNET connection between the various SCC and SCU units you can control the camera & light on/off and dimming, and data is being sent to and from the units.

Data Control		
Type	Male socket	
Mating type	Plug with screw terminal	
Function	Pin layout	
RS485+	Rx and Tx	
RS485-	Rx and Tx	

10.2.5.1 How it works

With novaNET controls you can control cameras & lights from any SCU or SCC unit within the network. Each camera & light is addressed with CH1 up to CH16. This is set during manufacturing. There will be always be one unique address 1. But address 1 (CH1) with the belonging camera and light can be controlled from more than one SCC/SCU unit. All works in parallel, with overrule from the last SCC/SCU control command send. This means you can switch on the camera with the switch on the SCU-1DRVL and switch it off with a SCU-DVR2. The switch on the SCU-1DRVL is still in the on position but the LED on the switch will be off. You can switch on again with the SCU-DVR2 by pressing on CAM or with the SCU-1DRVL by toggling the switch off and on again. The same is for the lights.
If you switch on from a SCU-DVR2 or from the NovasubDVR software, the LED in the swith will lid up, even if the switch on the SCU-1DRVL is in off position.

10.3 Optional extra connectors

The following extra connectors can be fitted on the back of the SCU-1DR(VL).

10.3.1 Data In connection RS232, SCU-04-49

Data connector for data input of sensor to overlay. The SCU-1DR(VL) needs to be fitted with a OSD or DSI sensor interface board.

SCU-04-49, RS232		
Type	Bulgin,PX0412/08S	
Mating type	PX0410/08P	
Function	Pin layout	
nc	1	
nc	2	
GND	3	
nc	4	
nc	5	
nc	6	
Rx ←	7	
Tx →	8	

10.3.2 Data In/Out connection to DDG, SCC-04-50

The Novasub DDG,Digital diver depth gauge can be connected to the SCC-1DR(VL) using above connector, or in combination with the SCC-01-50 connector.

SCU-04-50		
OSD/DSI RS232 out/in, Depth (HART) out		
Type	Bulgin,PX0412/08S	
Mating type	PX0410/08P	
Function	Pin layout	
nc	1	
V+ (OSD/DSI)	2	
GND	3	
V+ (Depth)	4	
Vout+ (Depth)	5	
Vout+ (OSD/DSI)	6	
Rx ←	7	
Tx →	8	

This connections make it possible to use the Novasub DDG digital depth gauge with depth sensor measurement. There are 2 ways of connecting the diver depth sensor UDS-3.

10.3.2.1 UDS-3 connected to SCC

The 2 wire UDS-3 depth sensor is wired into the multipin connector of the SCC. By using cable SCC-01-51, the UDS-3 is rewired internal to the DDG. The OSD-2 overlay boards is connected via de rs232 connection with the same cable SCC 01-51 to the DGG. The OSD-2 uses this depth input. Use cable ***SCC-01-51***

10.3.2.2 UDS-3 connected to DDG

The 2 wire UDS-3 depth sensor is wired to the DDG digital depth gauge. The DDG rs232 is wired to the SCC rs232 port. The SCC-OSD-2 uses the rs232 depth input to display on the overlay. Use cable ***SCC-01-53***

10.3.3 BoBox

The Bobox connector is needed to connect the BoBox, the comms break-out box.

SCC break-out Box		
BoBox	**SCC 04-43**	
Type	Souriau,UTS712E8S	
Mating type	UTS6JC12E8P	
Function	Pin layout	
PTT DIVER1	1	
PTT DIVER2	2	
VCC	3	
GND	4	
SPEAKER	5	
MIC+VOL	6	
MIC	7	
nc	8