

SCOTTY™



SCOTTY BlueBox Equipment Manual

Disclaimer

Copyright © SCOTTY Group Austria GmbH. All rights reserved.

SCOTTY Group Austria GmbH (SCOTTY) retains copyright in this manual and associated user documentation (the Documentation). The Documentation must not be reproduced or used for any purpose other than intended without written permission. The information provided in the Documentation is believed to be accurate and reliable; however, SCOTTY does not accept responsibility for loss or damage arising out of errors or omissions, and reserves the right to revise the documentation without notice.

SCOTTY and its suppliers retain all copyright and other intellectual property rights in the software embedded in and associated with the product described in the documentation (the Software). Some products include software distributed under GNU General Public License (GPL) and other licenses; please contact SCOTTY for further information and source code. By purchasing the product described in the documentation you are granted a limited license to use the Software, provided you do not copy, alter or adapt the Software in any way including decompiling, disassembling or reverse-engineering.

No liability for consequential damages.

SCOTTY, the SCOTTY logo, Teleporter™, and BlueBox™ are Trademarks of SCOTTY.
Microsoft® and Windows® are registered Trademarks of Microsoft Corporation.

Version V1.03
SD208410A

This document is under electronic revision control.

Table of Contents

1 Welcome	5
1.1 Welcome	5
1.2 About the Manuals	6
1.3 Customer Support	6
2 Introduction	7
2.1 Scope	7
2.2 System Overview	8
3 Operation	9
3.1 Status LEDs	9
3.2 Starting the System	10
3.3 Turning Off the System.....	10
4 Installation	11
4.1 Mounting Instructions	11
4.2 Cooling and Ventilation	12
4.3 Electrical Installation	12
4.4 Software Configuration	12
5 Maintenance	13
5.1 Internal Battery Replacement	13
6 Physical Specifications	15
6.1 Weight and Dimensions	15
6.2 Outline Drawings	16
7 Electrical Interfaces	19
7.1 Overview.....	19
7.2 Hardware Specification	20
7.3 Video Interfaces	20
7.4 Audio Interfaces	21
7.5 Data Interfaces	22
7.6 Other Inputs/Outputs.....	23
7.7 Power Requirements.....	24
8 Connectors and Pin-Outs	25
8.1 Computer USB (Front)	26
8.2 Computer USB 1 ... 4.....	26
8.3 Computer LAN 1 ... 2.....	26
8.4 Computer Display Output (DISP)	27
8.5 Codec Video Input SDI (SDI-IN).....	28

8.6 Codec Video Input DVI/HDMI/VGA (DVI-IN).....	28
8.7 Codec Equipment (EQU)	29
8.8 System Control (CTRL)	30
8.9 Power Input (PWR)	31
9 Environmental Specifications	33
9.1 Operation.....	33
9.2 Storage.....	33
10 Options.....	35

1 Welcome

1.1 Welcome

Welcome to the world of advanced communication... welcome to the world of SCOTTY!

SCOTTY provides a unique offering of live HD video, audio, and data communication, live HD video surveillance transmission, and imagery transfer from air, land, and sea – over satellite and terrestrial networks. This package is used by customers around the world to support their border control, intelligence gathering, reconnaissance, surveillance, search and rescue, and other missions which require beyond line-of-sight connectivity and ruggedized/reliable equipment.

SCOTTY is EN9100 certified and has over fifteen years' experience serving customers around the world.

Please find detailed information on our website: www.scottysgroup.com

1.2 About the Manuals

The Equipment Manual describes the hardware aspects of your SCOTTY system, serving as a valuable source of information not only for integrators but also for users.

The Software Manual accompanies the Equipment Manual. It describes the software aspects of your SCOTTY system, and is geared toward the user and administrator.

Both manuals help you take full advantage of your SCOTTY solution. They are not only a comprehensive guide to the operation of the system, they also provide technical details, simple step by step instructions on how to perform the most common applications, and more. We recommend you read the manuals carefully in order to fully benefit from SCOTTY's advanced solutions.

Furthermore, Quick Reference Guides are available describing the basic functionality on a single page – these are suitable for daily use.

1.3 Customer Support

The **Support** section on our website www.scottysgroup.com offers help to maximize the functionality of your SCOTTY system.

Choose Downloads to retrieve the latest documents, manuals and software.

Find updated information about our demo numbers to place demonstration and test calls to our demonstration systems.

Find out how to get in contact with our support experts.

Please help our support team provide the best support possible by including the serial number of your SCOTTY unit in all requests.

2 Introduction

2.1 Scope

This document covers the specifications, including interface control, usage and maintenance of the following component:

SD208106A SCOTTY BlueBox and variants



The SCOTTY BlueBox (fans installed)

2.2 System Overview

The SCOTTY BlueBox delivers superior full high definition video and audio, even over satellite or other challenging networks with bandwidth constraints and high latency.

The system supports both common videoconference standards and SCOTTY proprietary, highly optimized communication protocols. By providing bi-directional low latency real time communication, unidirectional live video streaming and video recording for store-and-forward applications, many different application requirements can be fulfilled. Parallel data channels enable bidirectional communication of supplementary data and also remote control of cameras and other equipment. The SCOTTY BlueBox is designed for demanding environmental needs.

The platform supports a wide range of video interfaces like Composite, HD-SDI, HDMI, DVI, and VGA with resolutions of up to 1080p60. Highly adaptable audio interfaces support a wide range of signal requirements. Flexible data interfaces support various data sources and sinks to be integrated in the communication system.

The mechanically very robust platform also provides standard PC interfaces like DVI/HDMI, LAN and USB. An internal solid state disk is used for the operating software and is available for storage of user data. The SCOTTY BlueBox is based on a PC platform running Microsoft Windows. The proven SCOTTY Teleporter provides a flexible, highly configurable user interface.

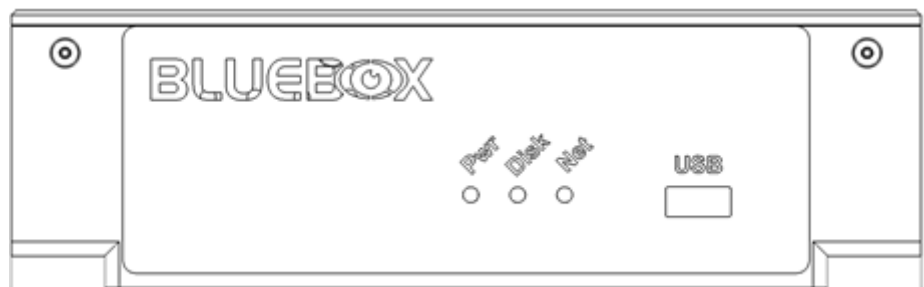
Excellent EMC characteristics allow employment in setups required to fulfill Zone 1 – NATO SDIP 27 Class B (AMSG 788).

SCOTTY sees this platform as a building block for highly adapted, optimized systems; selecting the required hardware and software modules and fitting them into the optimal mechanical structure will result in optimized, small, light and low-power solutions.

3 Operation

3.1 Status LEDs

Three LED's on the front of the unit provide information on the system status.



SCOTTY BlueBox front view with status LEDs and USB port

- Pwr** Power LED: indicates the power on state of the system.
- Disk** Disk LED: irregular flashing indicates internal solid state disk activity.
- Net** Network LED: indicates LAN activity.

Disk and **LAN** LED, two short flashes repeated once a second: the system temperature violates the operational limits.

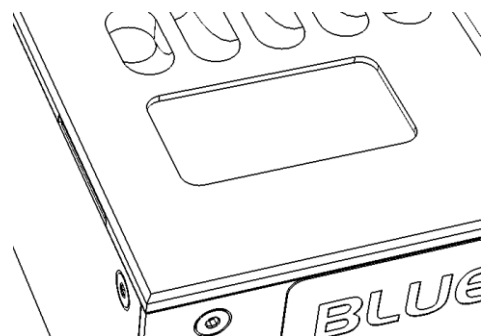
The USB 3.0 port is accessible from the Windows operating system e.g. for data import or export.

3.2 Starting the System

Typically Autostart is configured - the system starts automatically when power is applied.

As a factory option Manual Power can be configured. In this case an external power button should be available. Push this button to start the unit.

Alternatively, the Label plate on the top of the unit can be used as power button.



Label plate on top of the BlueBox

3.3 Turning Off the System

The preferred way to power down the system is to close the software and to shut down Windows; see the Software Manual for details.

The unit can also be turned off with an external power button or the label plate on the top of the unit (see previous chapter). Pushing the button will gracefully shutdown Windows.

Holding the power button for more than four seconds will result in an immediate power off without shutting down Windows first.



If the system is not shut down in the correct fashion, data-loss can occur.

4 Installation

4.1 Mounting Instructions

The SCOTTY BlueBox is a flange mount unit and can be directly mounted onto the vehicle structure, to a rack, or similar by four M5 metric screws. No shock absorbers are required.

The unit should be installed in a location compatible to its environmental specifications; see the corresponding chapter. It may be mounted in any orientation.

Plan enough room around the unit to allow access to the connectors and for sufficient air flow.

Provisions should be made for a minimum of one mounting hole to be electrically bonded to the mounting frame. The four mounting holes are masked off to ensure adequate electrical contact for grounding purposes.

Secure the mounting screws and/or nuts against self-opening. Please note that screws or nuts are not part of the SCOTTY BlueBox.

For mechanical details, see chapter Physical Specifications.



Caution: Make sure that the structure to which the unit is mounted is thick and strong enough to hold the unit even during shock and vibration.

4.2 Cooling and Ventilation

The SCOTTY BlueBox requires cooling. Although it will protect itself against overheating, the self-heating power must be dissipated through the mounting structure and/or through air circulation.

On default, the SCOTTY BlueBox comes with two 80mm temperature controlled fans mounted on top of the unit.

Alternatively, the installation of the SCOTTY BlueBox in an environment with sufficient forced air cooling is feasible.

4.3 Electrical Installation

The SCOTTY BlueBox gets connected with several interface connectors at the rear side of the unit. Power supply, monitor, keyboard, mouse, headset, Ethernet and more are available on these connectors. In addition an USB 3.0 port is available on the front of the unit, e.g. for data import or data export. For details, see chapter Connectors and Pin-Outs.

The use of shielded cables is highly recommended. Use shielded twisted-pair wiring for all balanced connections, and coax cables with the appropriate impedance.

Before connecting the unit, make sure the power supply matches power requirements (see chapter Power Requirements) and is properly fused.

4.4 Software Configuration

To allow optimal operation, the software settings of the SCOTTY BlueBox need to match the electrical installation and the external equipment.

Therefore, especially the codec audio and video settings in the **Config Utility** and in the **Teleport** application should be configured as required.

Please refer to the chapter Connectors and Pin-Outs for the signal labels cross-referenced by software and hardware.

For configuration details, please refer to the Software Manual.

5 Maintenance

5.1 Internal Battery Replacement

The system uses a standard lithium battery for the real time clock. In the event of loss of battery power, the unit will remain functional with the exception of the real time clock. This will result in the wrong date and time stamp on each file created or modified.

Battery replacement is recommended after 24 months.

No tools are required to change the battery. Pushing and sliding the label plate gives access to the battery.

Battery type: Panasonic BR2032

Replace only with a battery of this type and from this manufacturer.



SCOTTY BlueBox battery compartment

This page intentionally left blank.

6 Physical Specifications

The SCOTTY BlueBox is a compact flange mount unit.

6.1 Weight and Dimensions

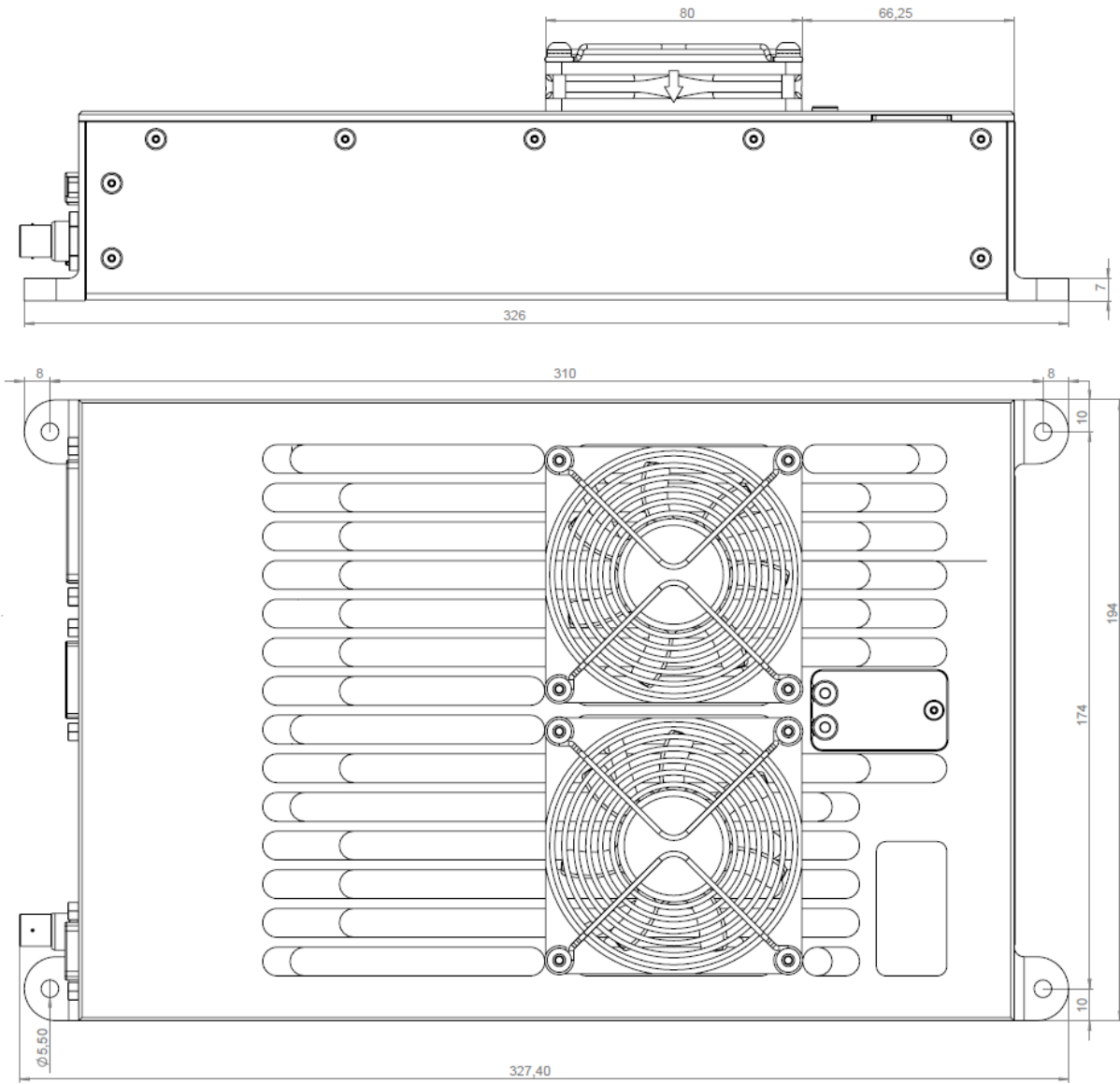
Width:	194 mm	7.64"	
Length:	326 mm	12.83"	(including flanges)
Height:	81 mm	3.32"	(including fans)
	60 mm	2.33"	(without fans)
Weight:	3.3 kg	7.28 lbs	(including fans)
	3.1 kg	6.83 lbs	(without fans)

Mounting Holes:

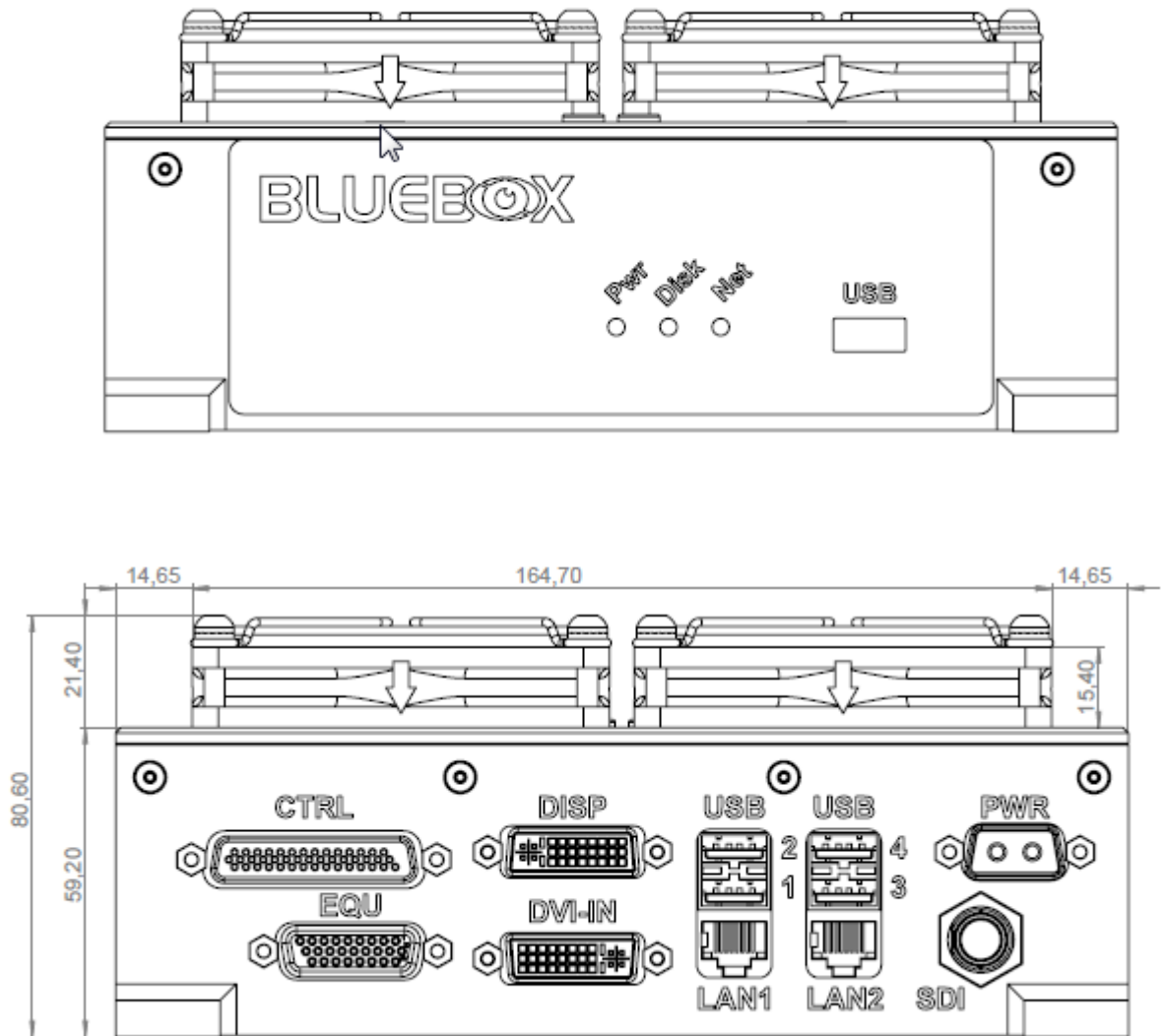
Distance:	310 mm / 174 mm	12.2" / 6.85"
Diameter:	5.5mm	0.21"

6.2 Outline Drawings

In the following drawings, dimensions are in mm; drawings not to scale.



Outline drawings, side and top view



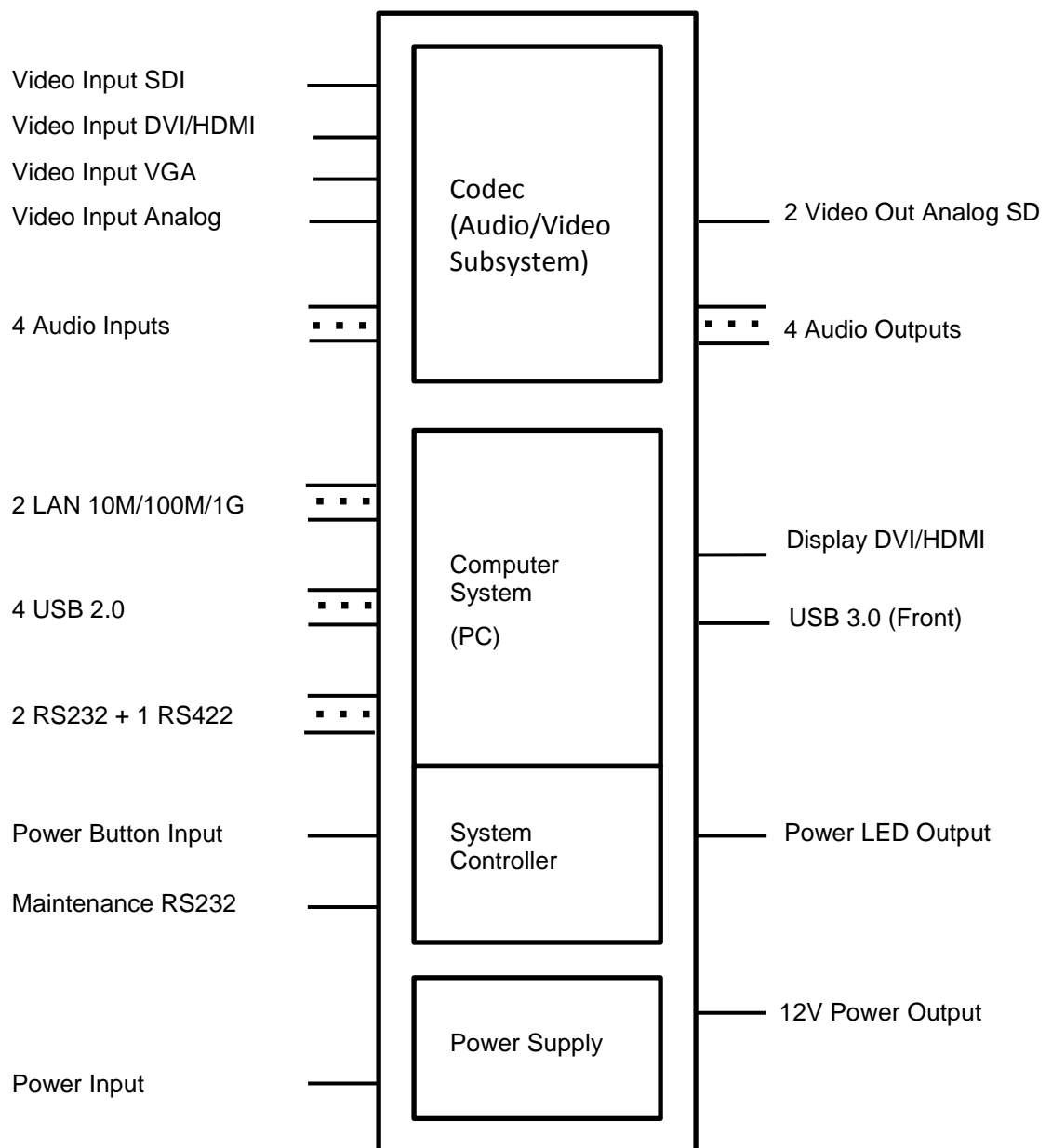
Outline drawings, front and rear view

This page intentionally left blank.

7 Electrical Interfaces

7.1 Overview

The SCOTTY BlueBox provides a rich set of interfaces.



System overview block diagram

7.2 Hardware Specification

The Computer subsystem is based on standard Intel-compatible CPUs.

CPU:	Intel® Core™ i7-4650U 2x1.7GHz
RAM:	4 GB
HDD:	mSATA-Flash Disk, 250GB

The Codec subsystem is based on a video processing DSP with hardware accelerated encoding and decoding features.

7.3 Video Interfaces

Several video inputs to the Codec are available:

- One SDI input, compatible with HD-SDI (3Gbit/s SMPTE 292M) and SD-SDI (SMPTE 259M).
- One DVI/HDMI input.
- One VGA input.
- One composite video input.

The display output of the computer system shows the PC desktop, the Teleport software and the video overlay:

- DVI/HDMI PC display output

Additional video outputs from the Codec are available, allowing multi-monitor operation:

- Two analog SD video outputs, configurable as two composite or one S-Video output.

For a specification of the formats supported, please refer to the Software Manual.

7.4 Audio Interfaces

Four analog audio inputs are available, featuring a very wide input level range to directly support microphones, line and intercom signal levels:

- One 12V balanced microphone input
Phantom power 12V over 680Ohm
Input range -63,5dBV ... +2,3dBV (1.3Vrms)
- One electret microphone input
Phantom power 3.3V over 2.2kOhm
Input range -63,5dBV ... +2,3dBV (1.3Vrms)

Typically used as headset microphone

- Two line inputs
Input resistance >8kOhm, symmetrical, AC coupled
Differential input, suitable for balanced and unbalanced signals
Input range (line, aux) -22dBV ... +2,3dBV (1.3Vrms)
Input range (microphone) -63,5dBV ... +2,3dBV (1.3Vrms)

Configurable as one mono or one stereo codec input

Configurable to connect an acoustic source (line mode), a playback device (aux mode) or a microphone without phantom power (mic mode)

Four analog audio outputs offer a flexible signal level configuration e.g. to directly connect to audio systems or headsets.

- Two speaker outputs
Output range -51,5dBV 11.2dBV (3.6Vrms), output resistance 10Ohm

Configurable as one mono or one stereo codec output

- One headset output
Output range -51,5dBV 11.2dBV (3.6Vrms)
Output resistance 10 Ohm
- One line output
Output range -51,5dBV 11.2dBV (3.6Vrms)
Output resistance 10 Ohm

Configurable to connect a speaker (line mode) or a monitoring device (aux mode)

7.5 Data Interfaces

Two Windows accessible LAN interfaces are available, enabling videoconferencing, streaming, data transfer or other applications:

- 10M/100M/1G Ethernet (10/100/1000BASE-T)
Auto MDI-X

Five Windows accessible USB interfaces may be used for the connection of keyboard, mouse and other interface or storage equipment:

- Four USB 2.0
USB power allows a maximum load of 1A (USB 2.0 standard: 0.5A)
- One USB 3.0 (Front)
USB power allows a maximum load of 1A (USB 3.0 standard: 0.9A)

Total current of all USB outputs must not exceed 3A

Three Windows accessible serial interfaces are available, useable to connect controllable cameras, GPS receiver or other external equipment:

- One RS422/RS485 interface
- Two RS232 interfaces, no handshake lines

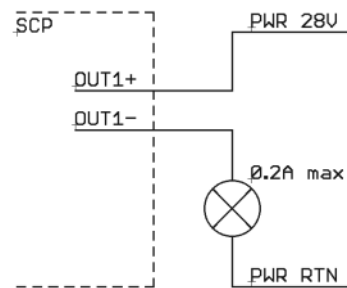
An additional maintenance RS232 port is available to monitor and control basic system functions independent of the state of the main system.

7.6 Other Inputs/Outputs

The power button input is only required when the manual start power mode is configured (Factory option). In this case temporarily activating this input by connecting it to ground will start the unit if switched off and shut down the unit when active. Activating the input for more than four seconds will result in an immediate power off. Internally this input is pulled up to 3.3V via a 10kOhm resistor.

A semiconductor relay output provides the same information as the front power LED. The “contacts” are electrically isolated from the power input and from the other system signals. The switching capabilities are 50V, 0.2A.

A typical application of this output is:



The 12V Power Output can be used to supply external equipment. It allows a maximum load of 1.2A.

7.7 Power Requirements

Nominal voltage:	24V and 28V DC
Voltage range:	20V – 33V
Max. Current:	6A
Power consumption:	45W (typical operation, no external load) 65W (internal maximum, no external load) 95W (typical, with maximum external load)

The system will start immediately when power is applied.

As a factory configuration option “Manual Start” is available: The system will wait for activation via the power button input.

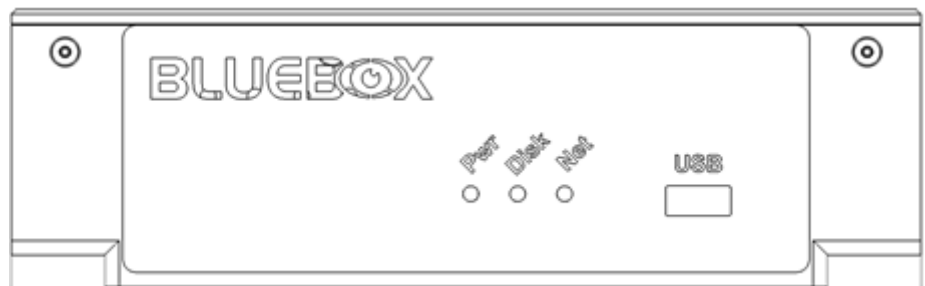
The system will continue to operate normally during short (<100ms) power interruptions. Longer power interruptions may result in loss of unsaved data and normal power up behavior after power is re-applied.

The power inputs are electrically isolated from other system signals.

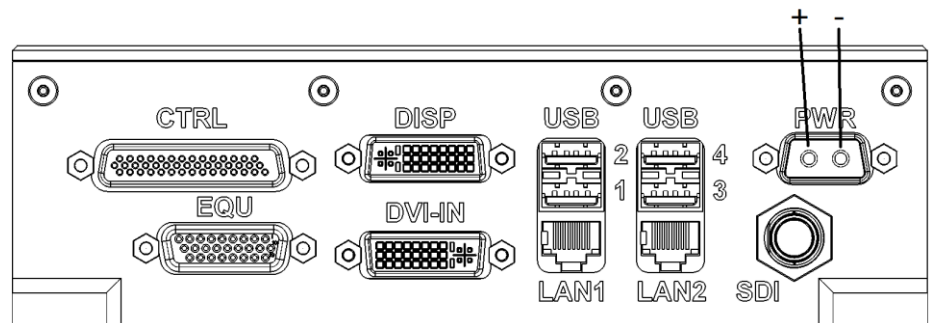
Under-voltage lockout and temperature monitoring turns off the unit if the power supply voltage or the system temperature violate the operation limits.

8 Connectors and Pin-Outs

The SCOTTY BlueBox gets connected via several interface connectors at the rear side of the unit. In addition an USB 3.0 port is available on the front of the unit. For details, see below.



Front interface configuration



Rear interface configuration

8.1 Computer USB (Front)

Type: USB 3.0 Type A, standard USB 3.0 pinout

Pin	Name	Signal	Description
1	USB7_5V	+5V Out	Computer USB (Front)
2	USB7_D_N	Data-	
3	USB7_D_P	Data+	
4	USB7_GND	GND	
5	USB7_SSRX_N	SuperSpeed Receiver-	
6	USB7_SSRX_P	SuperSpeed Receiver+	
7	USB7_GND	GND	
8	USB7_SSTX_N	SuperSpeed Transmitter-	
9	USB7_SSTX_P	SuperSpeed Transmitter+	

8.2 Computer USB 1 ... 4

Type: USB 2.0 Type A, standard USB 2.0 pinout

Pin	Name	Signal	Description
1	USBx_5V	+5V Out	Computer USB
2	USBx_D_N	Data-	
3	USBx_D_P	Data+	
4	USBx_GND	GND	

x indicates the port number (1 ... 4)

8.3 Computer LAN 1 ... 2

Type: RJ45, standard LAN pinout

Pin	Name	Signal	Description
1	LANx_D0_P	BI_DA+, TX+	Computer LAN
2	LANx_D0_N	BI_DA-, TX-	
3	LANx_D1_P	BI_DB+, RX+	
4	LANx_D2_P	BI_DC+	
5	LANx_D2_N	BI_DC-	
6	LANx_D1_N	BI_DB-, RX-	
7	LANx_D3_P	BI_DD+	
8	LANx_D3_N	BI_DD-	

x indicates the port number (1 ... 2)

8.4 Computer Display Output (DISP)

Type: DVI connector, standard DVI pinout

Pin	Name	Signal	Description
1	HDMI_D2_N	Data 2-	Computer Display Output DVI/HDMI
2	HDMI_D2_P	Data 2+	
3	HDMI_SHIELD	Shield Data 2	
4		Not Connected	
5		Not Connected	
6	HDMI_DDCCLK	DDC SCL	
7	HDMI_DDCDAT	DDC SDA	
9	HDMI_D1_N	Data 1-	
10	HDMI_D1_P	Data 1+	
11	HDMI_SHIELD	Shield Data 1	
12		Not Connected	
13		Not Connected	
14	HDMI_5V	DDC +5V Out	
15	HDMI_GND	GND	
16	HDMI_HPDET	DDC Hot Plug Detect	
17	HDMI_D0_N	Data 0-	
18	HDMI_D0_P	Data 0+	
19	HDMI_SHIELD	Shield Data 0	
20		Not Connected	
21		Not Connected	
22	HDMI_SHIELD	Shield Clock	
23	HDMI_CK_P	Clock+	
24	HDMI_CK_N	Clock-	
8	VGA_VSYN	VGA V-Sync	
C1	VGA_R	VGA R	
C2	VGA_G	VGA G	
C3	VGA_B	VGA B	
C4	VGA_HSYN	VGA H-Sync	
C5	VGA_GND	GND	

8.5 Codec Video Input SDI (SDI-IN)

Type: BNC 75 Ohm

8.6 Codec Video Input DVI/HDMI/VGA (DVI-IN)

Type: DVI connector, standard DVI pinout

Pin	Name	Signal	Description
1	VI10_HDMI_D2_N	Data 2-	Codec Video Input DVI/HDMI
2	VI10_HDMI_D2_P	Data 2+	
3	VI10_HDMI_SHLD	Shield Data 2	
4		not connected	
5		not connected	
6	VI10_HDMI_DDCCLK	DDC SCL	
7	VI10_HDMI_DDCDAT	DDC SDA	
9	VI10_HDMI_D1_N	Data 1-	
10	VI10_HDMI_D1_P	Data 1+	
11	VI10_HDMI_SHLD	Shield Data 1	
12		not connected	
13		not connected	
14	VI10_HDMI_5V	DDC +5V In	
15	VI10_HDMI_GND	GND	
16	VI10_HPDET	Hot Plug Detect	
17	VI10_HDMI_D0_N	Data 0-	
18	VI10_HDMI_D0_P	Data 0+	
19	VI10_HDMI_SHLD	Shield Data 0	
20		not connected	
21		not connected	
22	VI10_HDMI_SHLD	Shield Clock	
23	VI10_HDMI_CK_P	Clock+	
24	VI10_HDMI_CK_N	Clock-	
8	VI11_AN_VSYN	VGA V-Sync	
C1	VI13_AN	VGA R	
C2	VI11_AN	VGA G	
C3	VI12_AN	VGA B	
C4	VI11_AN_HSYN	VGA H-Sync	
C5	VI11_AN_GND	GND	

8.7 Codec Equipment (EQU)

Type: HD26 female (SCOTTY BlueBox)

HD26 male (Cable)

Pin	Name	Signal	Description
6	AI11_AN_P	Mic, HI, Pwr 12V	Codec Audio Input Mic (Balanced)
23	AI11_AN_N	Mic, LO, Pwr 12V	
15	AI11_AN_GND	GND	
7	AI21_AN_P	Headset Mic, Pwr 3.3V	Codec Audio Input Headset (Electret)
24	AI21_AN_N	do not connect	
16	AI21_AN_GND	GND	
8	AI31_AN_P	Line In Left/Mono HI/HOT	Codec Audio Input Line
25	AI31_AN_N	Line In Left/Mono LO/GND ¹⁾	
9	AI32_AN_P	Line In Right HI/HOT	
26	AI32_AN_N	Line In Right LO/GND ¹⁾	
18	AI3_AN_GND	GND	
4	AO11_AN	Line Out	Codec Audio Output Line
13	AO11_AN_GND	GND	
21	AO21_AN	Headset Speaker	Codec Audio Output Headset
17	AO21_AN_GND	GND	
5	AO31_AN	Speaker Left/Mono	Codec Audio Output Speaker
22	AO32_AN	Speaker Right	
14	AO3_AN_GND	GND	
3	VI21_AN	CVBS	Codec Video Input Composite
12	VI21_AN_GND	GND	
2	VO21_SD	S-Video Y / CVBS	Codec Video Output Analog SD
19	VO22_SD	S-Video C / CVBS	
11	VO2_SD_GND	GND	
1		do not connect	Future use
10		do not connect	
20		do not connect	

1) For unbalanced signal source bridge to GND

8.8 System Control (CTRL)

Type: HD44 female (SCOTTY BlueBox)

HD44 male (Cable)

Pin	Name	Signal	Description
6	COM1_TXD	TX-	Computer RS422 COM1
36	COM1_RXD	RX+	
21	COM1_GND	GND	
5	COM4_TXD	TX+	
35	COM4_RXD	RX-	
20	COM4_GND	GND	
4	COM2_TXD	TxD	Computer RS232 COM2
34	COM2_RXD	RxD	
19	COM2_GND	GND	
3	COM3_TXD	TxD	Computer RS232 COM3
33	COM3_RXD	RxD	
18	COM3_GND	GND	
7	MAINT_TXD	Maint TxD	Maintenance RS232
37	MAINT_RXD	Maint RxD	
22	MAINT_GND	GND	
1	OUT1+	Output 1+	Power LED Output
31	OUT1-	Output 1-	
2	OUT2+	Output 2+	General Purpose Output
32	OUT2-	Output 2-	
8	IN1	Input 1	Power Button Input
23	IN1_GND	GND	
38	IN2	Input 2	General Purpose Input
24	IN2_GND	GND	
40	PWR_12V	+12V Out	12V Power Output
25	PWR_12V_GND	GND	
16	GND	GND	Additional GND
17	GND	GND	
26	GND	GND	
27	GND	GND	
28	GND	GND	
29	GND	GND	
30	GND	GND	

9		do not connect	Future Use
10		do not connect	
11		do not connect	
12		do not connect	
13		do not connect	
14		do not connect	
15		do not connect	
39		do not connect	
41		do not connect	
42		do not connect	
43		do not connect	
44		do not connect	

8.9 Power Input (PWR)

Type: FCT F2W2PC (SCOTTY BlueBox)

FCT F2W2SC (Cable)

Pin	Name	Signal	Description
2	PWR	Power Input	Power Input
1	RTN	Power Return	

This page intentionally left blank.

9 Environmental Specifications

9.1 Operation

Temperature: -10°C to 45°C

Humidity: 5% to 90%, non-condensing

9.2 Storage

Temperature: -40°C to 65°C

Humidity: 5% to 95%, non-condensing

Storage Life: 30 years

An internal standard off-the-shelf button cell lithium battery powers the system clock while the unit is switched off. This battery needs to be replaced periodically. The replacement interval is two years. No tools are required to change the battery.

For further details, see chapter Maintenance.

This page intentionally left blank.

10 Options

SCOTTY systems feature a rich set of configurable hardware and software options, making it possible to tailor the system to customer needs. This chapter is intended to give a non-exhaustive overview of the possibilities of the SCOTTY BlueBox hardware and software. Please note that some of the optional features may become standard by a future software update.

- Different CPU for PC System: e.g. low-power Intel® Atom™ E3827 2x1.75GHz CPU
- Up to 16GB RAM (depending on CPU module)
- Up to 1TB Flash Disk (or even larger, depending on availability)
- Individual pre-installation of PC system, individual software and/or software settings
- Wake On LAN / Wake On USB
- Power outputs (12V, USB) active even when system is in standby
- VGA PC display video output (depending on CPU module)
- Extended input voltage range: 10V – 33V
- Individual video source configuration (RX or TX) of the video outputs of the Codec
- Individual configuration of the audio inputs: Phantom power voltage, impedances, pre-amplifier and sensitivity.
- Different configurations of the serial interfaces: up to four RS232 without handshake lines, or two RS422/RS485, or two RS232 with handshake lines, or combinations
- Embedded audio on SDI input, DVI/HDMI input and DVI/HDMI output
- Additional configurations for the analog video inputs: 2 x S-Video, RGB, composite
- Additional configuration for the HD analog video output: RGB
- Hardware write-protected disk as required by certain security relevant applications
- Video conference, recording, streaming and/or overlay: up to 60 fps progressive

- Additional standards for video conferencing: SIP, H.239, AAC-LC with 48ksps and stereo up to 128kbps, H.263, FECC
- Additional protocols for streaming: RTP, HTTP Live Streaming; other audio protocols and/or other data rates
- Free configuration of the power button input and the general purpose input
- Free configuration of the power LED output and the general purpose output
- Software write-protected system partition, changeable only by administrator

Please contact SCOTTY for further details.