

BC840 Series

Full HD IP box camera with embedded analytics

Installation Manual



Note: To ensure proper operation, please read this manual thoroughly before using the product and retain the information for future reference.

Copyright © 2014 Siqua B.V.

All rights reserved.

BC840 v4.14
Installation Manual v1 (140705-1)
AIT55

Nothing from this publication may be copied, translated, reproduced, and/or published by means of printing, photocopying, or by any other means without the prior written permission of Siqua.

Siqua reserves the right to modify specifications stated in this manual.

Brand names

Any brand names mentioned in this manual are registered trademarks of their respective owners.

Liability

Siqua accepts no liability for claims from third parties arising from improper use other than that stated in this manual.

Although considerable care has been taken to ensure a correct and suitably comprehensive description of all relevant product components, this manual may nonetheless contain errors and inaccuracies. We invite you to offer your suggestions and comments by email via t.writing@tkhsecurity.com. Your feedback will help us to further improve our documentation.

How to contact us

If you have any comments or queries concerning any aspect related to the product, do not hesitate to contact:

Siqua B.V.
Zuidelijk Halfroond 4
2801 DD Gouda
The Netherlands

General : +31 182 592 333
Fax : +31 182 592 123
E-mail : sales.nl@tkhsecurity.com
WWW : www.siqua.com

Contents

1	About this manual	4
2	Safety and compliance	5
2.1	Safety	5
2.2	Cautions	7
2.3	Compliance	8
3	Product overview	9
3.1	Models	9
3.2	Features	10
3.3	Package contents	11
3.4	Dimensions	11
4	Back panel	12
4.1	Features and indications	12
5	Cable connection	14
5.1	Connect audio	14
5.2	Connect data RS-485	14
5.3	Connect digital I/O	15
5.4	Power the camera	16
5.5	Connect to network	16
5.6	Use the analogue video output	17
6	Mount the lens and the camera	18
6.1	Mount the lens	18
6.2	Mount the camera	19
6.3	PID Camera installation	19
7	System	20
7.1	System requirements	20
7.2	System compatibility	20
	Appendix: Use focus assist	21
	Appendix: Adjust back focus	22
	Appendix: Technical specifications	23

1 About this manual

What this manual covers

This manual describes how to install and connect the BC840, Siqura's full HD IP box camera with embedded analytics. Instructions for configuration and operation of the BC840 can be found in the User Manual.

Who should read this manual

This manual is intended for technicians involved in the installation of BC840 cameras.

What you should already know

To be able to install and connect the BC840 properly, you should have adequate knowledge and skills in the following fields.

- CCTV systems and components
- Electrical wiring and low-voltage electrical connections
- Connections between fiber optical equipment (SFP models)
- Ethernet network technologies and Internet Protocol (IP)
- Windows environments
- Web browsers
- Video, audio, data, and contact closure transmissions

Before you start the installation

We advise you to read and observe all instructions and warnings in this manual before you proceed. Retain this manual with the original bill of sale for future reference and warranty service. When you unpack your product, check for missing or damaged items. If any item is missing, or if damage is evident, do not install or operate this product. Contact your supplier for assistance.

Why specifications may change

At Siqura, we are committed to delivering high-quality products and services. The information given in this manual was current when published. As we are relentlessly working to improve our products and user experience, all specifications are subject to change without notice.

We like to hear from you!

Customer satisfaction is our first priority. We welcome and value your opinion about our products and services. Should you detect errors or inaccuracies in this manual, we would be grateful if you would inform us. We invite you to offer your suggestions and comments via t.writing@tkhsecurity.com. Your feedback helps us to further improve our documentation.

2 Safety and compliance

This chapter presents the BC840 safety instructions and compliance information.

In This Chapter

2.1 Safety.....	5
2.2 Cautions.....	7
2.3 Compliance.....	8

2.1 Safety

The safety information contained in this section, and on other pages of this manual, must be observed whenever this unit is operated, serviced, or repaired. Failure to comply with any precaution, warning, or instruction noted in the manual is in violation of the standards of design, manufacture, and intended use of the module. Siqura assumes no liability for the customer's failure to comply with any of these safety requirements.

Trained personnel

Installation, adjustment, maintenance, and repair of this equipment are to be performed by trained personnel aware of the hazards involved. For correct and safe use of the equipment and in order to keep the equipment in a safe condition, it is essential that both operating and servicing personnel follow standard safety procedures in addition to the safety precautions and warnings specified in this manual, and that this unit be installed in locations accessible to trained service personnel only.

Safety requirements

The equipment described in this manual has been designed and tested according to the **UL/IEC/EN 60950-1** safety requirements. See the CE Declaration of Conformity for compliance information.

Warning: If there is any doubt regarding the safety of the equipment, do not put it into operation.

This might be the case when the equipment shows physical damage or is stressed beyond tolerable limits (for example, during storage and transportation).

Important: Before opening the equipment, disconnect it from all power sources.

The equipment must be powered by a SELV¹ power supply. This is equivalent to a Limited Power source (LPS, see UL/IEC/EN 60950-1 clause 2.5) or a "NEC Class 2" power supply. When this module is operated in extremely elevated temperature conditions, it is possible for internal and external metal surfaces to become extremely hot.

1. SELV: conforming to IEC 60950-1, <60 Vdc output, output voltage galvanically isolated from mains. All power supplies or power supply cabinets available from Siqura comply with these SELV requirements.

Power source and temperature ratings

Verify that the power source is appropriate before you plug in and operate the unit. Use the unit under conditions where the temperature remains within the range given in the Technical Specifications of this product.

Optical safety

The following optical safety information applies to BC840 models with SFP interface only.

This product complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007. This optical equipment contains Class 1M lasers or LEDs and has been designed and tested to meet **IEC 60825-1:1993+A1+A2** and **IEC 60825-2:2004 safety class 1M** requirements.

Warning: Optical equipment presents potential hazards to testing and servicing personnel, owing to high levels of optical radiation.

When using magnifying optical instruments, avoid looking directly into the output of an operating transmitter or into the end of a fiber connected to an operating transmitter, or there will be a risk of permanent eye damage. Precautions should be taken to prevent exposure to optical radiation when the unit is removed from its enclosure or when the fiber is disconnected from the unit. The optical radiation is invisible to the eye.

Use of controls or adjustments or procedures other than those specified herein may result in hazardous radiation exposure.

The installer is responsible for ensuring that the label depicted below (background: yellow; border and text: black) is present in the restricted locations where this equipment is installed.



EMC

This device has been tested and found to meet the CE regulations relating to EMC and 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. These limits are designed to provide reasonable protection against interference to radio communications in any installation. The equipment generates, uses, and can radiate radio frequency energy; improper use or special circumstances may cause interference to other equipment or a performance decrease due to interference radiated by other equipment. In such cases, the user will have to take appropriate measures to reduce such interactions between this and other equipment.

Any interruption of the shielding inside or outside the equipment could make the equipment more prone to fail EMC requirements.

Non-video signal lines must use appropriate shielded Cat 5 cabling (S-FTP), or at least an equivalent. Ensure that *all* electrically connected components are carefully earthed and protected against surges (high voltage transients caused by switching or lightning).

ESD

Electrostatic discharge (ESD) can damage or destroy electronic components. *Proper precautions should be taken against ESD when opening the equipment.*

RoHS statement



Global concerns over the health and environmental risks associated with the use of certain environmentally-sensitive materials in electronic products have led the European Union (EU) to enact the Directive on the Restriction of the use of certain Hazardous Substances (RoHS) (2002/95/EC). Siquira offers products that comply with the EU's RoHS Directive. The full version of the Siquira RoHS statement can be viewed at www.siquira.com.

Product disposal



The unit contains valuable materials which qualify for recycling. In the interest of protecting the natural environment, properly recycling the unit at the end of its service life is imperative.



When processing the printed circuit board, dismantling the lithium battery calls for special attention. This kind of battery, a button cell type, contains so little lithium, that it will never be classified as reactive hazardous waste. It is safe for normal disposal, as required for batteries by your local authority.



2.2 Cautions

Handle the camera carefully

Do not abuse the camera. Avoid bumping and shaking. The camera can be damaged by improper handling or storage.

Do not disassemble the camera

To prevent electric shock, do not remove screws or covers. There are no user serviceable parts inside. Consult technical support if a camera is suspected of malfunctioning.

Never face the camera towards the sun

Do not aim the camera at bright objects. Whether the camera is in use or not, never aim it at the sun or other extremely bright objects, as this can damage the camera.

Do not expose indoor models to moisture

The indoor camera is designed for indoor use or use in locations where it is protected from rain and moisture. Turn the power off immediately if the camera is wet and ask a qualified technician for servicing. Moisture can damage the camera and also create the danger of electric shock.

Do not use strong or abrasive detergents to clean the camera

Use a dry cloth to clean the camera when it is dirty. If the dirt is hard to remove, use a mild detergent and wipe gently. To clean the lens, use lens tissue or a cotton tipped applicator and ethanol. Do *not* clean the lens with strong detergents.

2.3 Compliance



DECLARATION OF CONFORMITY



Product identification

Products: Surveillance Camera (IP box camera)
Ethernet over Coax SFP Module

Brand: Siquira

Model/type: **BC620, BC840 series**
ECO-Plug

Versions: BC620(a)-(b), BC840(a)-(b)
(a) May be replaced by one or more suffixes: WDR, AID, PID or other
(b) SFP version has a SFP slot that supports SFP modules
SFP module can be optical fiber or Ethernet over Coax (ECO-Plug)

Ratings: 11-30VDC; 20-30VAC; PoE; 7.0W

Tested: System is tested in a typical configuration: ECO-Plug SFP module is inserted in the SFP slot in the BC620 camera



Means of conformity

In conformity with provisions of the following EC directives:
LVD: 2006/95/EC, EMC: 2004/108/EC, 89/336/EEC.

A sample of the product has been evaluated by

Safety: Siquira B.V., Gouda, The Netherlands
Standards: IEC 60950-1:2005,
Information Technology Equipment – Safety - Part 1: general requirements.

EMC: D.A.R.E!! Consultancy B.V. , Woerden, The Netherlands
Standards: EN 61000-6-3 - Generic, Emission, Residential. (class A)
EN 55022 - Emission, Residential. (Class A)
FCC 47 CFR 15 - Emission, Residential (Class A)
EN 50121-3-2 - Railway, rolling stock (table 9.1: 80-800MHz tested at 10V/m)
EN 50121-4 - Railway, signalling and telecom apparatus
EN 61000-6-2 – Generic, Immunity, Industrial
EN 61000-series: Parts: 3-2, 3-3, 4-2, 4-3, 4-4, 4-5, 4-6, 4-11

Company

Name:	Siquira B.V.	TKH Security Solutions USA, Inc.
Address:	Zuidelijk Halfroond 4 2801 DD Gouda, The Netherlands www.siquira.com	12920 Cloverleaf Center Drive Germantown, MD 20874, USA www.tkhsecurity.com

Signature

Name:	A van Bunnik	W.D. Hermelink
Title:	Product Line Manager Cameras	Product Certification Engineer
Date:	Gouda, 2014 March 21	

3 Product overview

This chapter introduces the BC840 and its features.

In This Chapter

- 3.1 Models..... 9
- 3.2 Features..... 10
- 3.3 Package contents..... 11
- 3.4 Dimensions..... 11

3.1 Models

The BC840 series includes the following models.

Model	Description
BC840-AID	Network box camera, 1080p, CMOS, dual H.264, Automatic Incident Detection
BC840-AID/SFP	Network box camera, 1080p, CMOS, dual H.264, Automatic Incident Detection, with SFP interface
BC840-PID	Network box camera, 1080p, CMOS, dual H.264, Perimeter Intrusion Detection
BC840-PID/SFP	Network box camera, 1080p, CMOS, dual H.264, Perimeter Intrusion Detection, with SFP interface

Note: The BC840 can be configured to either NTSC or PAL, with the default set to PAL for EMEA and APAC, and to NTSC for the US.

3.2 Features

BC840 Series



Common features

- 1/2.8" Progressive scan CMOS imager
- Full HD 1080p resolution
- ONVIF Profile S
- Day/Night with IR-cut filter
- Wide dynamic range
- Backlight compensation
- Alarm: two inputs / two outputs
- Analogue video output
- Two-way audio
- Up to 10 privacy masks
- 24 Vac; 12 Vdc / 24 Vdc; 802.3af PoE
- SFP Interface (optional)
- SD card slot for edge recording

BC840-AID



Features

- Common features (see above)
- Traficon-powered incident detection

BC840-PID



Features

- Common features (see above)
- Built-in analytics for perimeter intrusion detection (PID)

3.3 Package contents



BC840
(lens not included)



C mount lens adapter



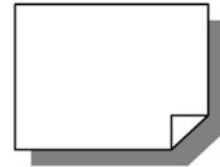
Back focus adjuster



5-Pin terminal block (2x)



2-Pin terminal block

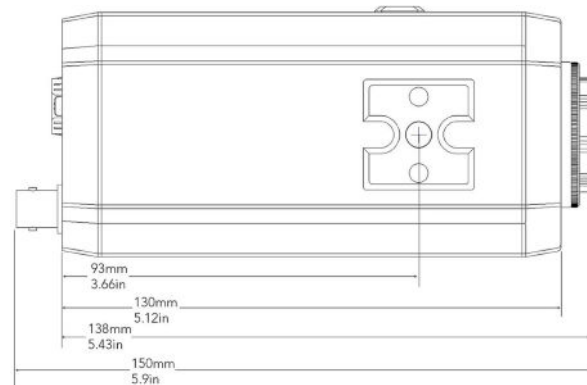
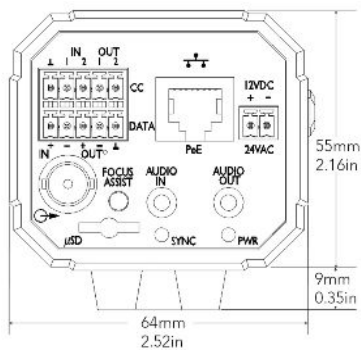


Quick Start Guide



CD (Manuals and software)

3.4 Dimensions



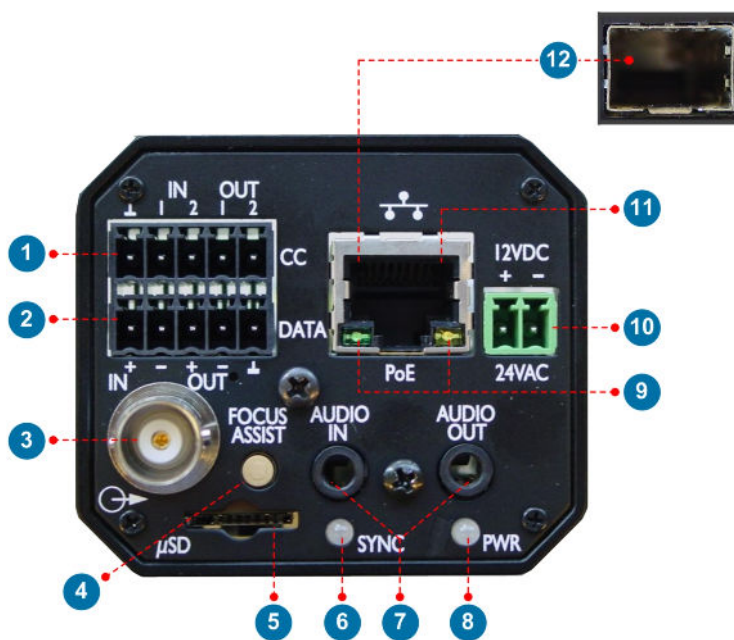
4 Back panel

This chapter describes the connectors and other features on the back panel of the BC840.

In This Chapter

4.1 Features and indications..... 12

4.1 Features and indications



BC840 back panel

No.	Item	Description
1	CC IN/OUT	Connector for digital I/O ⊥ : GND IN 1 : CC IN 1 IN 2 : CC IN 2 OUT 1 : CC OUT 1 OUT 2 : CC OUT 2
2	DATA IN/OUT	Connector for Data RS-422/485 IN + : DATA IN + IN - : IDATA IN - OUT + : DATA OUT + OUT - : DATA OUT - ⊥ : GND

No.	Item	Description
3	Video (BNC)	Connector for analogue video output
4	FOCUS ASSIST	Activates Focus Assist function. Helps to achieve optimal image quality (see <i>Appendix: Use focus assist</i>).
5	Micro SD card slot	Cards up to 32 GB supported.
6	SYNC	Sync LED
7	AUDIO IN / AUDIO OUT	Connectors for two-way audio transmission
8	PWR	Power connection indicator (also used for Focus Assist)
9	Network LEDs	Network connection and activity indicators
10	Power connector	11-30 Vdc / 20-30 Vac
11	Network connector	RJ-45 with 802.3af PoE
12	SFP connector (on SFP model)	Used for direct connection to fiber optic cabling or coax (via Siquira ECO-plug)

5 Cable connection

This chapter explains how to connect power and signal cables.

In This Chapter

5.1 Connect audio.....	14
5.2 Connect data RS-485.....	14
5.3 Connect digital I/O.....	15
5.4 Power the camera.....	16
5.5 Connect to network.....	16
5.6 Use the analogue video output.....	17

5.1 Connect audio

The BC840 camera supports two-way audio.

» To connect audio

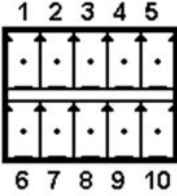
- Connect the audio input and output cables (jack Ø3.5 mm) to the AUDIO IN and AUDIO OUT connectors on the back panel of the camera.
For information about configuring audio settings via the Audio webpage of the BC840, see the User Manual.

5.2 Connect data RS-485

The BC840 itself does not have PTZ functionality, but it can be mounted on a PTZ mounting bracket which can then be controlled from the data port (RS-422/485) on the back panel of the BC840.

» To connect data RS-485

- 1 Insert the data wiring into the supplied 5-pin terminal block.
For the connector pin definitions, see the diagram below.
- 2 Connect the terminal block to the DATA connector.
For information about configuring data settings via the Data RS-485 webpage of the BC840, see the User Manual.

CC/DATA connector	Data pin definitions	Data specifications
	6. DATA IN +	<ul style="list-style-type: none"> • 1x RS-422/485 (2- or 4-wire) • 300 b/s to 230.4 kbps
	7. DATA IN -	
	8. DATA OUT +	
	9. DATA OUT -	
	10. GND	

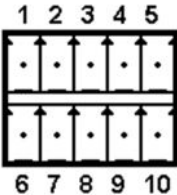
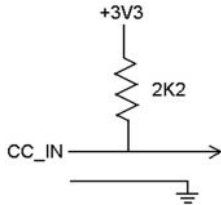
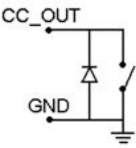
RS-485 definitions

5.3 Connect digital I/O

The BC840 is equipped with two digital inputs and two digital outputs for alarm applications.

► To connect alarm devices

1. Insert the alarm wiring into the supplied 5-pin terminal block.
For the connector pin definitions, see the diagram below.
2. Connect the terminal block to the CC connector.
For information about configuring alarm settings via the Application webpage of the BC840, see the User Manual.

CC/DATA connector	Equivalent circuits	CC Output specification
	 <p>CC input circuit</p>	<ul style="list-style-type: none"> • Power transistor output • Max drain current: 1 A • Max voltage: 30 V to GND • ON-resistance: max 20 mΩ
	 <p>CC output circuit</p>	

1. GND
2. CC IN 1
3. CC IN 2
4. CC OUT 1
5. CC OUT 2

Digital I/O definitions

5.4 Power the camera

BC840 series cameras support 12 Vdc and 24 Vac via terminal block, and Power over Ethernet (802.3af PoE).

» To power the camera via terminal block

- 1 Connect the leads from a 12 Vdc or 24 Vac power supply (not included) to the supplied terminal block in accordance with the connection assignments on the back panel of the camera.
- 2 Insert the terminal block into the 12 Vdc / 24 Vac connector on the back panel
- 3 Plug the power supply into a power outlet.

Connection	24 Vac Assignment	12 Vdc Assignment
+	Power-1	Power
-	Power-2	GND

Powering over Ethernet requires that 802.3af PoE power sourcing equipment (PSE) is available on the network. The BC840 consumes 7 W of power.

» To power the camera over Ethernet

- 1 Connect one end of the Ethernet cable to the RJ-45 connector on the back panel of the camera.
- 2 Connect the other end of the cable to an IEEE 802.3af network switch.

5.5 Connect to network

Category 5 Ethernet cable is recommended for network connections. For the best transmission quality, do not exceed a cable length of 100 metres.

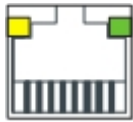
» To connect through a hub or switch

- Connect one end of a straight through Cat 5 cable to the RJ-45 connector of the IP camera and the other end of the cable to the hub or switch.

» To connect directly to a PC

- Connect one end of a crossover Cat 5 cable to the RJ-45 connector of the IP camera and the other end of the cable to the PC.

Refer to the following figure to determine whether you have established an Ethernet connection.



Ethernet socket LEDs green/yellow

Green on/off : 100/10 Mbit

Yellow on/blink : link OK, active

Yellow off/flash : link down, TX attempt

5.6 Use the analogue video output

With its analogue output, the hybrid BC840 solution can provide local video for a public view monitor.

» To connect a local monitor

- Connect the coaxial cable from your video monitor to the video output BNC connector on the back panel of the BC840.

6 Mount the lens and the camera

This chapter provides instructions for mounting a lens onto the camera. It also explains how to mount the camera on a wall or ceiling.

In This Chapter

6.1 Mount the lens.....18

6.2 Mount the camera.....19

6.3 PID Camera installation.....19

6.1 Mount the lens

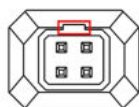
The BC840 supports C-mount and CS-mount lenses.



Mount a lens onto the BC840

►► To mount a lens onto the BC840 camera

- 1 Remove the CCD cover from the camera.
- 2 If you have a C-mount lens, attach the supplied C/CS mount adapter to the camera.
- 3 Screw the lens to the camera or to the adapter.
- 4 Check for proper back focus and adjust as necessary using the supplied back focus adjuster.
- 5 Connect the lens connector to the DC Iris socket.
Align the nub on the lens connector with the indent in the DC Iris socket as highlighted below.



DC Iris socket with indent

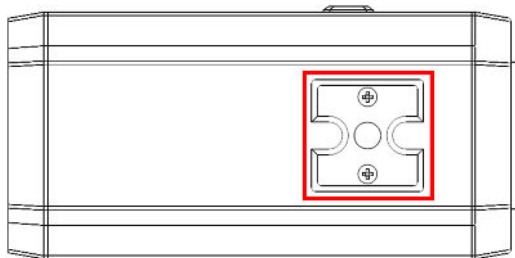
6.2 Mount the camera

The BC840 can be installed directly on a wall or ceiling, provided the surface has sufficient strength to support the camera. In addition, the BC840 is fitted with a mounting block which can be fixed to either the top or bottom of the camera.

The mounting bracket screws directly into the mounting block shown in the figure below. No tools are required. If applicable, also see the installation instructions provided with the various Siquira ceiling and wall mounts.

►► To mount the camera upside-down

- 1 Using a Phillips-head screwdriver, remove the mounting block (shown below) from the camera.
- 2 Affix the mounting block to the opposite side of the camera.
- 3 Mount the camera to the bracket.



BC840 with mounting block

6.3 PID Camera installation

Before the BC840-PID functionality can be set up through the PID webpage, it is imperative to make sure that the camera is properly installed for PID application.

Installing cameras and lighting for surveillance purposes requires specific professional skills. The requirements for camera images processed with automatic PID functionality differ significantly from the requirements for images monitored by human observers.

For example, in conventional surveillance camera setups, the camera is often aligned such that it provides a clear overview of the entire site, including a natural horizon showing some of the sky. For PID purposes, however, the only relevant part of that image is the detection zone. All other parts of the image are irrelevant and can decrease PID sensitivity, because they leave fewer pixels for the objects within the detection zone, thus potentially leading to degraded detection performance.

Also, for example, a bright sky or a bright street light in the image causes the Automatic Gain Control (AGC) of the camera to adjust, leaving a darker image in which objects are to be detected.



Warning: For optimal PID performance and a stable and reliable detection system, it is essential that installers meticulously follow the detailed installation instructions and lighting guidelines provided in Siquira's *PID Camera Installation* application note.

7 System

This chapter gives the system requirements for PCs used to access the BC840.

In This Chapter

7.1 System requirements.....	20
7.2 System compatibility.....	20

7.1 System requirements

The BC840 camera can be accessed and configured from a standard web browser supporting ActiveX controls. The browsing PC must meet the system requirements given in the table below.

Item	System requirement
Microprocessor	Intel Pentium M, 2.16 GHz or higher or Intel CoreTM2 Duo, 2.0 GHz or higher
Memory	At least 2GB RAM
Operating system	Windows 7
Web browser	Internet Explorer 8 or later, Firefox, Chrome, Safari
Network card	10Base-T (10 Mbps) or 100Base-TX (100 Mbps) operation
Viewer	ActiveX control plug-in for Microsoft IE

7.2 System compatibility

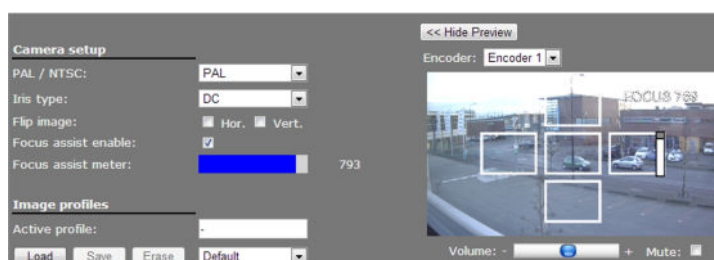
To ensure system compatibility, download the latest firmware from **Support > Software** at www.siqura.com.

Appendix: Use focus assist

BC840 includes Focus Assist functionality to achieve optimal image quality. Focus Assist can be used from the Video page but also from the back of the camera body. The latter may prove useful when setting the focus without a monitor.

» To use Focus Assist from the webpage

- 1 On the **Video** page, select the **Image** tab.
- 2 Under *Camera setup*, select **Focus assist enable**.
The focus level is indicated by the blue *Focus assist meter* bar. The meter is also overlaid over the image as a vertical white bar.
- 3 Aided by the feedback from the Focus assist meter, adjust the focus on the lens.
The greater the detail in the scene, the higher the number on the Focus assist meter.



Focus assist meter enabled

» To use Focus Assist from the camera body

- 1 To activate Focus Assist, turn the focus ring of the lens all the way in one direction, and then press the white button on the back of the camera housing.
The Focus LED - also on the back of the housing - shines orange, indicating that Focus Assist has not registered a maximum sharpness value yet.
- 2 Slowly turn the focus ring of the lens until the LED shines red.
- 3 Next, turn back the focus ring to find the point where the Focus LED shines green.
This is the point where the camera is properly focused.

LED state	Indicates	Action
Orange	Focus Assist has not registered a maximum focus value yet.	Turn the focus ring of the lens all the way from left to right until a maximum value is seen.
Red	Focus Assist has registered a maximum focus value, but is not properly focused yet.	Slowly turn the focus ring until the Focus LED shines green.
Green	The camera is properly focused.	None

Appendix: Adjust back focus

Back focus refers to the distance from the rear lens element to the camera focal plane. It is only necessary to adjust the back focus if the lens of the camera cannot hold focus throughout its zoom range.

Required tools

- Back focus adjuster (in the BC840 camera package)
- Test chart / contrasting object

►► To adjust back focus

- 1 Set the camera on a stable mount at least 75 feet (23 metres) away (or as far as possible) from the test chart or object.
- 2 Make sure the iris is wide open and keep the lighting as low as possible.
- 3 Adjust the focus to infinity, indicated on the camera by the ∞ symbol.
- 4 Turn the zoom to the extreme telephoto position, and then focus on the subject.
- 5 Set the zoom to the wide-angle position.
- 6 Loosen the retaining screw of the back focus ring with the supplied back focus adjuster, and then adjust the back focus ring to sharpen the picture.
- 7 Repeat steps 3 ~ 6 until the focus remains consistent throughout the zoom range.
- 8 Tighten the retaining screw of the back focus ring to fasten the ring.

Appendix: Technical specifications

This appendix provides the technical specifications of the BC840 series cameras. Note that the sections describing embedded AID and embedded PID apply to the related model only.

Camera	
Image sensor	1/2.8" Progressive scan CMOS
Electronic shutter	1/25~1/10000 s
Minimum scene illumination	0.1 lux colour; 0.01 lux (b/w)
Video standards	NTSC/PAL (selectable via menu)
Output modes	Progressive scan
Video output	1 Vpp, 75 Ω, BNC
Lens mount	CS/C
Lens type	DC iris, manual
Auto iris drive	DC or manual
Composite video	BNC
Wide dynamic range	On/off
WDR value	>60 dB

Video	
Number of video streams	2x H.264/MJPEG
Frame rate	1 to 30 fps
Compression algorithm(s)	H.264 MP or HP (ISO/IEC 14496-10), MJPEG
Supported resolutions	1080p (1920x1080), 720p (1280x720), 960H, D1, VGA, 2CIF, CIF
Types of streaming	UDP/IP (multicast and/or unicast)
Number of output streams	Up to 20
Encoding latency	<130 ms typ
GOP structure	I, IP (selectable / user profiles)
Output data rate	Up to 20 Mb/s (CBR or VBR selectable/user profiles)

Functions	
Privacy masks	10
On-screen display	3x text lines (configurable: position, colour, border/ outline colour, font size) 1x image in BMP, GIF, or JPEG format (configurable: position, scaling)
Video settings	User profiles, contrast, brightness, colour saturation, hue, sharpness

Audio	
Two-way audio	Line out, line in/mic in (jack Ø3.5 mm)

VMD and camera health	
Video motion detection	Yes (free-drawn ROI)
Image quality monitor	Focus, contrast, SNR, exposure
Tamper detection	Partially blocked view, cloaked, changed position

Embedded AID	
Stopped vehicle	16 stop zones
Inverse direction	8 zones
Speed drop	8 zones
Levels of service	Normal, dense, delayed, congested, stop and go (8 zones)
Pedestrian	16 zones
Debris/fallen object	16 zones
Smoke	Only for tunnel applications

Embedded PID	
Intrusion detection (PID)	2x Detection zones, 2x detection lines
Minimum illumination	4 Lux
Detection zone	Entering, exiting, touch
Detection line	Directional crossing, touch
Additional features	Ignore line, minimum object size, perspective
Services	Parameter optimisation

Contact closures	
Inputs	2
Outputs	2

Storage

Storage options	Micro SD card, 64 GB
-----------------	----------------------

Network

Interface(s)	RJ-45 or SFP (modules not included)
Protocols	H.264 (BP, MP, HP), RTP, UDP, IP, DHCP, IGMPv2, RTSP, (S)NTP, MX/IP, HTTP, SNMP v2, DiffServ, SAP, UPnP, ONVIF

Powering

Power consumption	7 W
Power	20 - 30 Vac, 11 - 30 Vdc; 802.3af PoE
Power adapter (not included)	110 - 230 Vac to 12 Vdc, 1.5 A 50/60 Hz

Environmental

Operating temperature	Continuous -30 °C to +50 °C (-22 °F to +122 °F)
-----------------------	---

Mechanical

Dimensions (h x w x d)	63.8 x 64 x 150 mm (2.51 x 2.52 x 5.90 in)
Weight	164 g (6.09 oz)
Mounting interface	¼ inch 20-thread top or bottom (removable block)
Colour	Black/Grey
Connector type	RJ-45, BNC