λ | CORTEX

Range of products

Supporting Information

PURETECH
SECURITY, FIRE & SMART HOME SPECIALISTS

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Contents:

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The aim of the λ|Cortex range is to provide a British designed and produced CCTV security solution; to meet the requirements for all installation types, from small domestic installations to high end secure facilities that require a graded product.

The λ|Cortex range consists of cameras and NVRs designed to work together reliably and enable installers and users an easy, straightforward experience.

λ|Cortex products are developed on behalf of Qvis, and our NVRs are produced in the UK.

λ|Cortex NVR software is proprietary.

λ|Cortex camera firmware is proprietary.

λ|Cortex servers are all based in the UK.

This allows Qvis to control all paths of communication to the NVR externally, and from the NVR to the cameras to ensure that all data is secure and complies with UK GDPR and BS EN 62676.

In developing the products, we selected the most suitable hardware to allow maximum performance while maintaining a cost-effective solution.

For example:

The Patriot and Admiral NVRs have a 906mbps bandwidth.

Our NVRs are 4K compatible and can display up to 32 channels of 4K video simultaneously.

Our NVRs will work with any ONVIF camera from version 2 onwards (video and audio only)

We have a range of AI capable functions that include (but are not limited to):

Intrusion detection.

Virtual tripwires.

ANPR solutions.

AI Deep learning and Smart analytics.

We also provide software for our products at no extra charge, and do not charge a licence fee for camera use.

We have a dedicated mobile app called λ|Cortex Go, available on iPhone and Android devices, and all the P2P servers are UK based.

We also undergo regular cyber security checks to unsure the safety of any data and to ensure the security of the system from unauthorised access. This is covered by the ETSI EN

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This document primarily covers the following products.

λ|Cortex Admiral NVR (all configurations)

λ|Cortex Patriot NVR (all configurations)

λ|Cortex Commander NVR (all configurations)

λ|Cortex 8mp IP turret camera (motorised and fixed lens)

λ|Cortex 8mp IP bullet camera (motorised and fixed lens)

λ|Cortex 8mp IP vandal dome (motorised and fixed lens)

λ|Cortex 5mp IP active deterrent camera

λ|Cortex 5mp IP turret camera (motorised and fixed lens)

λ|Cortex 5mp IP bullet camera (motorised and fixed lens)

λ|Cortex 5mp IP vandal dome (motorised and fixed lens)

λ|Cortex 4mp IP Full Colour turret camera

λ|Cortex 4mp IP PTZ

λ|Cortex 4mp IP active deterrent PTZ

λ|Cortex IP ANPR camera

λ|Cortex IP Fisheye cameras

λ|Cortex managed network switches.

λ|Cortex unmanaged network switches.

λ|Cortex CVMS software

λ|Cortex Go app.

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Configurations

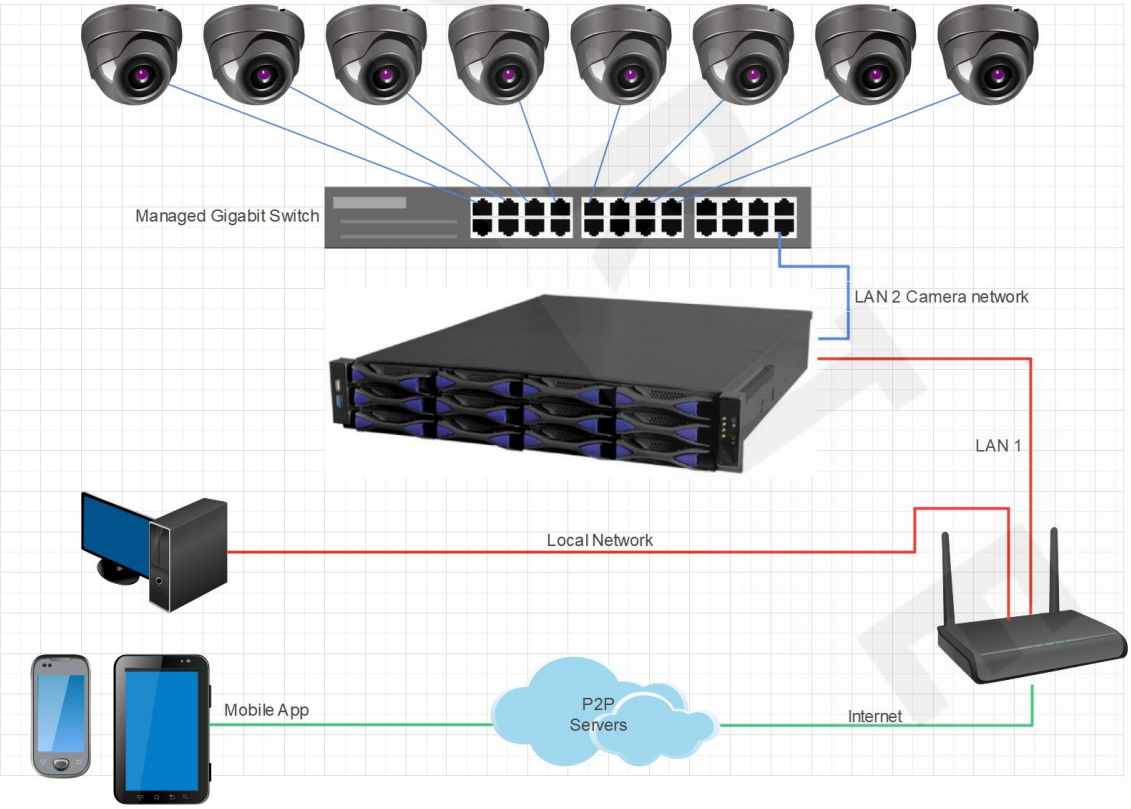
We provide a range of λ|Cortex products to allow multiple configurations for installation.

When using IP cameras, we always recommend a Gigabit backbone across the site to allow data to flow without bottlenecks in the network. To assist with this, all λ|Cortex switches have at least one gigabit uplink port.

Our managed switches are designed to allow the installer to configure individual ports, lock out unused ports, and allow management of the cameras from a central point.

The NVRs can locate, readdress, reconfigure and add cameras to an NVR using our proprietary plug and play protocol.

Example of recommended configuration:



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British Standard: BS EN 62676

The λ|Cortex Admiral and Cortex Patriot are suitable for use in a Grade 2 system* under the British standard BS EN 62676.

The λ|Cortex Admiral and Cortex Patriot are suitable for use in a Grade 3 system* under the British standard BS EN 62676.

Design of the product has taken into consideration the requirements under the British Standards requirements for:

Storage of data:

- Labelling of data and manipulation protection.
- Data authentication.
- Backup and restoration of data.
- Archiving and backup.

System requirements:

- System logs.
- Time synchronisation.
- Code requirements.
- Alarm related information.
- Notification handling.
- Image handling.

Other Hardware:

- Managed network switches can be programmed and have their own fault reporting.

*this product can be used as part of a graded system. The actual grading of the entire system depends on other installation factors and overall design of the installation. The advantage of purchasing a grade 2 or 3 compatible system is that the capability of the product is documented and will not need to be assessed further during the design phase.

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TECHNICAL GUIDE

bsia british security industry association

BS EN 62676 SERIES – GUIDANCE FOR CUSTOMERS ABOUT GRADING AND OTHER IMPORTANT MATTERS

Introduction

This guide is intended to help purchasers of CCTV systems understand the implications of the BS EN 62676 series of standards introduced for CCTV from 2014. This guide does not describe all of the requirements of a CCTV system. The introduction of the standards will not fundamentally alter how a CCTV system works but they do affect which features need to be considered in order for a claim of compliance to the standards to be allowed.

The BS EN 62676 series of standards are new to the industry and introduce some new concepts including, for the first time, encouragement to use security grading. It is important to understand that the majority of requirements given by the BS EN 62676 series of standards are not grade dependent but, as this is a new concept, this guide pays particular attention to the subject. It explains the benefits of grading and how it would be expected that an installer will describe this to the customer and document the grade or grades that have been chosen.

What are the Benefits of using the BS EN 62676 standards?

These standards were developed using best practice guidelines from a number of organisations including BSIA and the UK Government's Centre for Applied Science and Technology. These international standards also incorporate ideas from British Standards. So for the first time a single set of standards includes a wide range of best practice ideas to improve the quality of CCTV systems.

These standards have been embraced within the standards framework developed by the Surveillance Camera Commissioner's team.

In summary the new standards:

- Define best practice - The use of the standards will ensure:
  - that the needs of the customer are properly specified and understood
  - that the system is designed, installed, operated and maintained to meet the needs of the customer
- Enable comparison between suppliers' proposals
- Enable consistent application of features
- Give a simplified method of specifying a system.

What is an Operational Requirement?

In recent times there has been increasing use of a form of documentation called an Operational Requirement (OR). BS EN 62676 encourages this use.

The OR is intended to document the purpose of the CCTV system starting with the wishes of the system owner/operator. The OR should state what threats the system should address and how the system is to be used. This means it is clearer to all parties what is desired and to check whether the design will meet the needs of the owner.

What are the Benefits of the Grading System?

It simplifies the specification process and helps to ensure consistency of design and proposals.

Grading – Key Points

A summary of the key points about grading are:

- There are four Grades. Grade 1 has the lowest requirements (and introduces very little above the common requirements, see table). *Note grading of CCTV systems is not the same as the EN 50131 series of standards for intruder alarms and confusion may arise if the differences are not understood.*
- The standards allow for flexibility but it is recommended that system designers should choose the simplest approach that will work. This could be one grade applied throughout the system.
- Grading will affect the protection level and restriction of access to the system and should be assigned according to the risks and their possible effect on the CCTV system.
- Grading of a system does not determine the quality of the images captured by the system. Elements such as image quality, screen occupation and similar are specified separately under BS EN 62676-4.
- The chosen grade(s) should be recorded in the Operational Requirement (OR), see above, or System Design Proposal (SDP).
- Rather than each component (e.g. camera, DVR) it is the functions of the CCTV system that are graded.
- Where use of a single grade for all system functions is not practical the standard permits the grading to be divided up by function. The standard describes 18 functions (see table).
- Additional flexibility can be obtained by documenting specific requirements in the Operational Requirements or System Design Proposal.
- Typically each function will have a consistent grade throughout the system. One exception to this is the Tamper Detection and Protection where different parts of the system may have different levels of exposure or vulnerability to attack.

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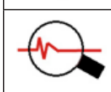
TECHNICAL GUIDE

bsia british security industry association

The following table shows the effect of choosing a different grade for each of the 18 separately graded functions.

FUNCTION	GRADE 1	GRADE 2	GRADE 3	GRADE 4
Shaded areas mean no extra requirement specific to this grade. Each Grade lists extra features compared to lower grade except where indicated.				
 **Common interconnections** *(e.g. sharing of several cameras to multiple operators)*			System design should show how the bandwidth will cope with multiple simultaneous streams of images	
 **Storage** *(i.e. short term - e.g. overwritten after 30 days)*		• Fast reaction time	• Data backup • Faster reaction time • Fast live replay	• Fastest reaction time • Faster live replay
 **Archiving and backup** *(i.e. long term - e.g. needed after 30 days)*			• Manual backup • Verification of backup	• Auto backup • Image authentication
 **Alarm related information**			Display of alarm information with origin, type, time and date	
 **System logs** – to include...		• Alarms • Power Loss • System Reset • Export & hardcopy • User log-in & out	• Tampers • Video Loss • Essential function failure • Authorization code changes • Search & replay of images • Changes to recording parameters • Alarm Acknowledge • System config change • Date & Time change	• Fault messages • Diagnostic actions • Control of functional cameras (PTZ)
 **Backup and restore of system data** *(i.e. configuration)*			Capable of backup and restore of all system configuration	
 **Repetitive failure notification**			Detection and handling of repetitive failures	
 **System power supply monitoring**				Monitoring and handling of power supply failures
 **Image buffer holding time** *(i.e. time before images are written to storage media)*			Images not held in buffer for > 5 seconds	
 **Essential function device failure notification time**			Indication of failure of an essential function within 100s	
 **Monitoring of interconnections** *(between equipment on site)*			• Verify Interconnection < 30s • Retries before notifying user: 5 • Max time before notifying user: 180s	• Verify Interconnection <10s • Retries before notifying user: 2 • Max time before notifying user: 180s
 **Authorisation code requirements** *(e.g. password)*		• Min 10,000 codes, or • Min 3,000 keys	• Min 100,000 codes, or • Min 15,000 keys	• Min 1,000,000 codes, or • Min 50,000 keys
 **Time synchronisation**			Time automatically corrected to UTC (GMT) (display time can show local time, e.g. BST)	

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FUNCTION		GRADE 1	GRADE 2	GRADE 3	GRADE 4
Shaded areas mean no extra requirement specific to this grade. Each Grade lists extra features compared to lower grade except where indicated.					
	**Data authentication** *(e.g. watermarking)*			Authentication of images and alterations to video stream reported to user	
	**Export/copy authentication** *(e.g. verifying watermarks)*			Method of verifying authenticity of exported images	
	**Data labelling** – to include...	• Date and time	• Location (Site) • Source (Camera)		• Labelled with UTC (GMT) + local time offset
	**Data (manipulation) protection** *(e.g. encryption)*				• Provide method to prevent unauthorized viewing and copying • Encryption
	**Tamper detection** *(can be applied according to risks associated with individual cameras or other system parts)*		• Video loss • Detection of loss: 8s	• Detection of loss: 4s • Check of field of view • Detect obscuring and blinding • Camera have tamper protection	• Detection of loss: 2s • Detect substitute video data • Detect significant Contrast reduction

Summary

Making use of the 62676 series of standards will be of great benefit to customers and enable a clear understanding of the requirements of a system to be developed by all interested parties. This is assisted by creation of the Operational Requirement. Customers should ensure they discuss the application of grading to simplify the documentation and comparison of systems but should note that a higher grade does not imply better video quality.

Further Detail

The BSIA have published a guide giving more detailed information about the grading of CCTV systems. This has been written for CCTV installers, specifiers and specialists. It includes details about how to the document the grading applied to a system. This guide is **Form 218** – "Graded requirements under BS EN 62676 Standards for CCTV" and can be found on the BSIA website: **www.bsia.co.uk/publications**

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General Data Protection Regulation (GDPR)

All our hardware is suitable under UK and European GDPR for domestic and commercial installations.

All equipment has at least 1 layer of authentication required to access it.

Any other GDPR compliances are down to the installer and the on-site users.

UK Conformity assessed (UKCA) Conformité Européenne (CE)

The λ|Cortex Patriot and λ|Cortex Admiral are built in the UK at our Havant facility and have all documentation present and correct to conform with the UKCA criteria. They also meet the criteria for the European CE marking.

The λ|Cortex branded cameras incorporate some Chinese components in their construction but due to the nature of the firmware and the paths of communication, they can be considered as a UK controlled product and suitable for UK installations.

The Declarations of conformity for the Cortex Admiral and Cortex Patriot follow this page.

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UK CA | CE

CERTIFICATE

DECLARATION OF CONFORMITY

This certificate is to certify that both the:

λ|Cortex Patriot

and

λ|Cortex Admiral

Meet the requirements of the following directives and its associated harmonised standards:

Directive Name	Directive
EMC	2014/30/EU
ROHS	2011/65/EU
LV	2014/35/EU
UK S.I. ECR 2016	1091
UK S.I. EE(S)R 2016	1101
UK.S.I. RoHS	3032

Signed and original file location	36 New lane, Havant, Hampshire, PO9 2JL, UK
Date of Signature	29/01/2024
Signature	
Name	Mathew Brown
Position	Director

Company Registration No: 13258740

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36 New Lane, Havant
Hampshire. PO9 2JL

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UK CA | CE

CERTIFICATE

DECLARATION OF CONFORMITY

CTX-2MP-IP-ANPR-LR	CTX-8MP-IPC-TUR-MW
CTX-4MP-IP-PTZ-25	CTX-8MP-IPC-TUR3-FG
CTX-4MP-IP-PTZ-AD-25	CTX-8MP-IPC-TUR3-FW
CTX-5MP-IPC-BUL3-MG	CTX-8MP-IPC-VAN3-FW
CTX-5MP-IPC-BUL3-MW	CTX-8MP-IPC-VAN3-MW
CTX-5MP-IPC-BUL3MGAF	CTX4C-IP-TUR-FG
CTX-5MP-IPC-BUL3MWAF	CTX4C-IP-TUR-FW
CTX-5MP-IPC-BUL5-MW	CTX5C-IP-AD-TUR-S2FG
CTX-5MP-IPC-TUR-FG	CTX5C-IP-AD-TUR-S2FW
CTX-5MP-IPC-TUR-FGAF	CTX8C-IP-AD-TUR-S2FG
CTX-5MP-IPC-TUR-FW	CTX-POESWITCH-POE16-V3
CTX-5MP-IPC-TUR-MW	CTX-POESWITCH-POE16
CTX-5MP-IPC-TUR3-FG	CTX-POESWITCH-POE16G
CTX-5MP-IPC-TUR3-FW	CTX-POESWITCH-POE24-V3
CTX-5MP-IPC-VAN-FW	CTX-POESWITCH-POE24
CTX-5MP-IPC-VAN3-MW	CTX-POESWITCH-POE24G
CTX-5MP-IPC-VAN3MWAF	CTX-POESWITCH-POE4
CTX-8MP-IPC-BUL-FW	CTX-POESWITCH-POE8
CTX-8MP-IPC-BUL3-MG	CTX-POESWITCH-POE8GT
CTX-8MP-IPC-BUL3-MW	

Meets the requirements of the following directives and its associated harmonised standards:

Directive Name	Directive
EMC	2014/30/EU
ROHS	2011/65/EU
LV	2014/35/EU
UK S.I. ECR 2016	1091
UK S.I. EE(S)R 2016	1101
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UK PSTI 2023

(Product Security and Telecommunications Infrastructure)

This is a regulation brought into law by the UK Government on the 29th of April 2023.

It is used to ensure that any network connectable product adheres to minimum specifications to maintain cyber security.

The λ|Cortex range of products meet the regulations by following the below requirements.

Schedule 1 specifies security requirements that relate to manufacturers of relevant connectable products which includes the Puretech brand and its subsidiaries. This includes the following:

1. Password is unique per device or defined by the user of the device, and the password which is unique per device is generated by using a security mechanism that reduces the risk of automated attacks against a class or type of device.

2. Users can report vulnerabilities to Puretech at https://puretechsecurity.co.uk/security-centre-puretech and we will respond to any report within 2 business days.

3. Puretech will provide security updates for our products during the pre-defined minimum support period. The minimum support period is defined as:

3 years after the last sale, by Puretech of a particular series and model

This regulation is also supported by the qualification and certification under ETSI EN 303645

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Office for Product Safety & Standards

CERTIFICATE

DECLARATION OF CONFORMITY

This certificate is to certify that the:

λ|Cortex range of products

Comply with the following regulations

UK PSTI 2023

Schedule 1

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PSTI

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ETSI EN 303645

(European Telecommunications Standards Institute)

This is a European standard that covers the Cyber Security for IoT devices.

To meet these regulations, the following tests were carried out by an independent, qualified testing house.

Open-source intelligence gathering

Social engineering intelligence gathering

Blackbox external attacks

Blackbox internal attacks

Other processes are also required to be in place, and we have implemented the following:

Mandatory changes of the default admin password.

Keep personal data secure.

Maintain secure communication.

Ensure software integrity.

Keep software updated.

Minimize exposed attack points.

After extensive testing the λ|Cortex Patriot and λ|Cortex Admiral recording systems were unable to be breached by any hacking attempt both locally and externally, and as a result we can guarantee the software security and integrity of our hardware and software platforms.

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THE CYBER SCHEME

CERTIFICATE

DECLARATION OF CONFORMITY

This certificate is to certify that both the:

λ|Cortex Patriot

and

λ|Cortex Admiral

Meets and exceeds all the criteria laid out in the ETSI EN 303645 regulations for the Cyber Security of IoT devices

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ETSI

CYBER ESSENTIALS

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United Kingdom Procurement Act 2023

In October 2023 the UK parliament introduced a new bill that outlines how public contracts are to be awarded and managed.

One of the items introduced in this bill is the ability for the UK Government to add certain suppliers to a debarment list. This list would mean that certain suppliers would not be allowed to be used in certain public contracts. Examples of this are under the policies clear definition of 'sensitive sites'.

These included any building or complex that routinely holds secret material or above,

any location that hosts a significant proportion of officials holding developed vetting clearance,

any location which is routinely used by Ministers,

and any government location covered under the Serious Organised Crime and Police Act 2005.

Under this policy any λ|Cortex product is valid for use in any of the above condition.

Some λ|Cortex range cameras may have their hardware assembled in China but due to the nature of the UK Firmware and the means of communication with a λ|Cortex NVR they are deemed cyber secure and do not pose a threat to national security.

This has been further proved with the ETSI certification and penetration testing that the units have undergone.

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CERTIFICATE

DECLARATION OF CONFORMITY

This certificate is to certify that:

λ|Cortex NVR's

And

λ|Cortex Branded Products

Meet and comply with the standards and recommendations set out in the:

United Kingdom Procurement Act 2023

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Date of Signature	29/01/2024
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NDAA Compliance

What is NDAA

NDAA is the National Defence Administration Act of the United States of America

This means that any building or company that receives direct funding from the Federal Government of the United Sates of America must abide by Congresses decision to stop using certain manufacturers.

Here in the UK and Ireland we are not funded by the U.S Federal Government so NDAA doesn't apply to the UK, Ireland, or Europe.

Here in the UK, we must adhere to the British standards mentioned previously.

NDAA Approval

The λ|Cortex Patriot and λ|Cortex Admiral recording systems are suitable for use in an NDAA environment and meet the criteria set out by section 889 of the National Defence Administration Act of the United States of America

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CERTIFICATE

DECLARATION OF CONFORMITY

NDAA Compliance

This certificate is to certify that the:

λ|Cortex Patriot

and

λ|Cortex Admiral

Digital recording systems are suitable for use in an NDAA environment and meet the criteria set out by section 889 of the National Defence Administration Act of the United States of America

Signed and original file location	36 New lane, Havant, Hampshire, PO9 2JL, UK
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