



LVD/HVD Demo Unit Guide

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1 Safety and Regulatory Statements

1.1 CE Statement

The standards compliance label on the 10ZiG Q³ contain the CE mark which indicates that this system conforms to the provisions of the following European Council Directives, laws, and standards:

- Electro Magnetic Compatibility (EMC) Directive 89/336/EEC and the Complementary Directives 92/31/EEC and 93/68/EEC:
 - EN550022, Class A; Emissions Industrial Environment
 - EN 50082-2 Immunity Industrial Environment
 - EN61000-4-2 Electro Static Discharge
 - EN61000-4-3 Radiated RF
 - EN61000-4-4 Electrical Fast Transients
 - EN61000-4-5 Surge
 - EN61000-4-6 Conducted RF
 - EN61000-4-11 Line Interruption
- Low Voltage Directive (LVD) 73/23/EEC and the Complementary Directive 93/68/EEC:
 - EN 60950:92 A1:93 & A2:93 & A3:95 & A4:96 & A11:97
 - EN60825-1:199/A11, -2

1.2 Canadian Requirements

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la Classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

1.3 FCC Warning

This equipment has been tested and complies with the limits for a Class A computing device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operating this equipment in a residential area is likely to cause harmful interference in which case the user is responsible for repairs.

10ZiG's system tests were conducted with 10ZiG's shielded cables, such as those you receive with your computer.

Changes or modifications not expressly approved by 10ZiG could void the user's authority to operate the equipment.

Operation of this device is subject to the following conditions:

- ? This device may not cause harmful interference.
 - ? This device must accept interference received, including interference that may cause undesired operation.
 - ? Cables used with this device must be properly shielded to comply with the requirements of the FCC.
-

1.4 Emissions Regulations Compliance

Any third-party I/O devices installed in, or connected to, a BOSaNOVA system(s) must be in accordance with the requirements set forth in the preceding Emissions Regulations statements. In the event that a third-party noncompliant I/O device is installed, the customer assumes all responsibility and liability arising there from.

1.5 Electrostatic Discharge (ESD) Precautions

Electrostatic charges can damage the integrated circuits on printed circuit boards. To prevent such damage from occurring, observe the following precautions during board unpacking and installation:

- ? Stand on a static-free mat.
 - ? Wear a static strap to ensure that any accumulated electrostatic charge is discharged from your body to the ground.
 - ? Connect all equipment together: including the static-free mat, static straps and peripheral units.
 - ? Keep uninstalled printed circuit boards in their protective antistatic bags.
 - ? Handle printed circuit boards by their edges, once you have removed them from their protective antistatic bags.
-

1.6 End of Life Plan

This box is a purchased unit. Therefore, it is the sole responsibility of the purchaser to dispose of it in accordance with local laws and regulations at the time of disposal.

This unit contains recyclable materials. The materials should be recycled where facilities are available, and according to local regulations. In some areas 10ZiG may provide a product take-back program that ensures proper handling of the product.

For more information, contact your 10ZiG representative.

2 Introduction

2.1 10ZiG Q³

The Q³ is a high-speed in-line unit designed to allow data to and from a tape device to be encrypted / decrypted on the fly.

The product was developed as a direct result of banking customers expressing concern that all their company data was being put into the hands of a courier company in readable form, while in transit to secure off site storage. All companies, banks in particular, when dealing with customer records and numbered accounts, have to respect and provide absolute confidentiality. And, what is more, they have to prove to their customers that they can achieve this. Powerful security systems within the establishment can be utilized to provide security while the data is on site but, apart from password protection at an application level, the data can normally be easily read at a data level. This is where Q³ steps in.

2.2 Rackmount Unit



2.3 Specification

Interface	Low Voltage Differential (LVD) Units	<p>Host Low Voltage Differential (LVD) Multimode Ultra2Wide SCSI (Small Computer Systems Interface) with external termination</p> <p>Tape Low Voltage Differential (LVD) MultimodeUltra2 Wide SCSI (Small Computer Systems Interface) with internal termination</p>
	Differential (HVD) Units	<p>Host High Voltage Differential (HVD) Ultra Wide SCSI (Small Computer Systems Interface) with external termination</p> <p>Tape High Voltage Differential (HVD) Ultra Wide SCSI (Small Computer Systems Interface) with internal termination</p>
Electrical		90-260 vac auto sensing
MTBF		100,000 @ 100% duty cycle
Temperature		<p>Operating 0 to 50°C</p> <p>Non Operating -20 to 60°C</p>
Dimensions	Rack mount	430 mm wide, 45 mm high, 380 mm deep

3 Outline

3.1 How does Q³ provide a solution?

Q³ provides on the fly data encryption or decryption to the Extended DES standards. The key that provides the start point for the encryption or decryption is made up of two parts. One of these parts is a unique secure silicon chip installed when the unit is manufactured; the other part is a firmware key installed by the end user. The silicon chip is not readable by 10ZiG or the end user and the end user encryption key is not readable by 10ZiG, yet both parts must be in place for the encryption or decryption to work.

To provide protection against the end user encryption key being changed the Q³ is password protected. In the unlikely event of the password being compromised, the end user encryption key cannot be read out of the Q³. By using this system the chance of data security being compromised is minuscule. This, combined with the unique dual interlaced Extended DES mode of data encryption, gives near total protection (absolute protection is impossible).

3.2 How does it work?

The Q³ consists of two separate sections in one unit.

The main section, the encryption section, sits on the SCSI bus between the host computer and the backup tape device. When properly installed, it takes on the SCSI ID of the target tape drive and presents this ID to the host computer. Q³ passes through all inquiry information and therefore appears transparent to the host computer. At the heart of the encryption section lies a pair of dedicated hardware encryption and decryption engines.

The second section is a system monitor, it provides information relating to the climatic environment of the complete Q³ system, as well as monitoring the power supplies and other critical functions not involving the encryption section.

3.3 How is Q³ controlled?

The Q³ is controlled via an RS232 compatible serial. This port can be connected to an IBM PC compatible computer running Microsoft Windows XP and above, in which case the supplied Graphical User Interface may be used.

Alternatively all the commands the encryption unit or monitor unit can understand may be issued from a dumb terminal or a UNIX shell script.

3.4 Front Panel

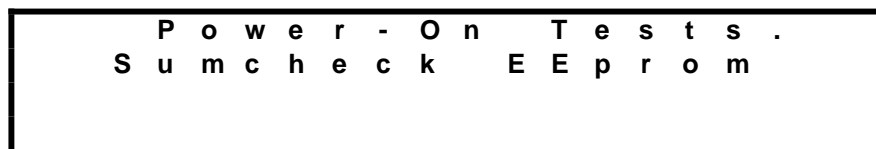
The front panel includes a 4 Line by 20-character LCD status display. On the desktop unit this is a large size whilst on the rack mount it is smaller. The output is the same on both types.

The display gives the user feedback of the operations being undertaken and the devices connected.

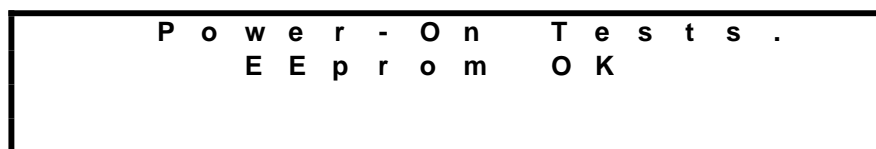
3.5 Display

The 4 Line by 20-character display presents a variety of information to the user including subsystem status, amount of data transferred and error conditions.

During power up the unit runs a series of tests and the display is as shown below.



```
P o w e r - O n   T e s t s .  
S u m c h e c k   E E p r o m
```



```
P o w e r - O n   T e s t s .  
E E p r o m   O K
```

P o w e r - O n T e s t s .
S r a m S t a c k T e s t s

P o w e r - O n T e s t s .
S t a c k A r e a O K

P o w e r - O n T e s t s .
S r a m O K

P o w e r - O n T e s t s .
H a r d w a r e T e s t s

P o w e r - O n T e s t s .
H a r d W a r e O K

