



Blast Control Unit Operation | UTM-00201 | Rev 4

SVN 31163 | 2019



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1 USERS OF THIS MANUAL

DetNet endeavours to upgrade BlastWeb software annually to comply with new challenges and needs faced by Centralized Blasting users in the market. As new software becomes available, the DetNet version control policy requires that all control equipment be upgraded to ensure support is provided on the latest software version installed on Surface Blast Controllers as deployed on customer sites.



This manual is only to be used for the BlastWeb System and the applicable software version as displayed.

1.1. End User

1.1.1. Requirements

- Only trained personnel, and personnel found competent, are allowed to operate the system.
- Users of the system shall be aware of the recommended procedures for using the BlastWeb BCU System as per manufacturer's recommendations.
- These recommendations do not supersede the method as required by local mine, explosives or statutory regulations/procedures/codes of practise regarding the use of detonators. In such cases, the MOST STRINGENT set of rules between the mine, explosives or local regulations/procedures/codes of practise and the manufacturer must be followed.

1.2. Training

Training and software upgrades shall only be performed by a DetNet SA subject matter expert. Contact the DetNet head office for additional information.



ALL USERS OPERATING THE BCU SYSTEM SHALL HAVE SUCCESSFULLY COMPLETED THE SPECIFIC TRAINING BEFORE PERFORMING ANY WORK WITH THE DEVICE(S).

1.3. Information

Refer to <http://www.detnet.com/> for additional detail and documentation.

2 BLASTWEB SYSTEM PRODUCT SAFETY



ELECTRONIC DETONATORS ARE TOTALLY DIFFERENT TO CONVENTIONAL ELECTRIC DETONATORS AND ABSOLUTELY NO CONNECTION WITH CONVENTIONAL ELECTRIC DETONATORS OR ANY OTHER ELECTRONIC DETONATORS IS POSSIBLE AS IT CAN LEAD TO UNINTENDED INITIATION. ALL USERS OPERATING THE ELECTRONIC INITIATION SYSTEM SHALL HAVE SUCCESSFULLY COMPLETED THE SPECIFIC TRAINING BEFORE PERFORMING ANY WORK WITH THE DEVICE(S). DO NOT USE ANY DEVICES OTHER THAN THOSE SPECIALLY DESIGNED FOR THIS TYPE OF ELECTRONIC DETONATOR.

2.1. DetNet Safety Philosophy

DetNet safety philosophy is to design, manufacture and provide control equipment, detonators and accessories to the highest safety standards.

- SmartKeys remains in possession of the accountable person, and should only be used to authorize the blast process at such a time as stipulated by the Mine after completion of the required Risk Assessment.
- All products must conform to local and international standards before it is sold for use.
- DetNet complies to ISO 9001, SANS 551:2009, CEN/TS 13763-27 which is acceptable to countries we operate in; in countries not subscribing to the above marks, we advise users to engage with DetNet to ensure that all equipment comply to local regulations.

2.2. User Safety

Safety is ensured when the user supplements the product's in-built safety systems through adequate training in the safe use of the product:

- Induction training
- Refresher training

DetNet continuously upgrades software to make our products more user friendly and to ensure that users stay abreast on latest developments, it is important that users get trained on the relevant changes before their equipment is updated.

2.3. Transportation, Storage and Handling

BlastWeb equipment must be transported, stored, handled and used in conformity with all federal, state, provincial and local laws and regulations. Control equipment and accessories should be handled with due care and not dropped, mishandled, subjected to excessive vibration or exposed to any chemical agents. Connectors should be kept clean and the equipment must be kept in a safe environment to avoid misappropriation or misuse.

2.4. Maintenance Schedule

All equipment in the field will need to be returned to DetNet, or its repair centres, for service at the following intervals:

- Handheld Equipment (Tagger, etc.) – 18 Months.
- Other equipment (Excluding accessories) – 24 Months.

2.5. Information in case of emergency

Refer to <http://www.detnet.com/> for additional detail and documentation.

2.6. Warning, Caution, and Note Statements

WARNING, **CAUTION**, and **NOTE** statements are used throughout this manual to emphasise important and critical information. Observe these statements to ensure safety and to prevent product damage. The statements are *defined as follows*:



A WARNING MEANS THAT INJURY OR DEATH IS POSSIBLE IF THE INSTRUCTIONS ARE NOT OBEYED.

Warnings draw special attention to anything that could injure or kill the reader/user. *Warnings* are generally placed before the step in the procedure they relate to. Warning messages are repeated wherever they apply.



A CAUTION MEANS THAT DAMAGE TO EQUIPMENT IS POSSIBLE.

Cautions draw special attention to anything that could damage equipment or cause the loss of data and will normally describe what could happen if the caution is ignored. *Cautions* are generally placed before the step in the procedure they relate to.



Notes are added to provide additional information.

Notes are used to emphasise important information by visually distinguishing this from the rest of the text. Notes can contain any type of information except safety information, which is always placed in cautions or warnings.

Refer to <http://www.detnet.com/> for additional detail and documentation.

2.7. RF compliance - FCC (USA) and ICES (Canada)

2.7.1. Unauthorised Changes

DetNet South Africa has not approved any changes or modifications to this device by the user. Any changes or modifications could void the user's authority to operate the equipment.

DetNet South Africa *n'approuve aucune modification apportée à l'appareil par l'utilisateur, quelle qu'en soit la nature. Tout changement ou modification peuvent annuler le droit d'utilisation de l'appareil par l'utilisateur.*

2.7.2. Radio Interference

This device complies with Part 15 of the FCC Rules and Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

2.7.3. FCC Class A digital device notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

2.7.4. Labelling Requirements for the Host device

The host device shall be properly labelled to identify the modules within the host device. The certification label of the module shall be clearly visible at all times when installed in the host device, otherwise the host device must be labelled to display the FCC ID and IC of the module, preceded by the words "Contains transmitter module", or the word "Contains", or similar wording expressing the same meaning, as follows:

Contains FCC ID: 2ARNH-0743337A

L'appareil hôte doit être étiqueté comme il faut pour permettre l'identification des modules qui s'y trouvent. L'étiquette de certification du module donné doit être posée sur l'appareil hôte à un endroit bien en vue en tout temps. En l'absence d'étiquette, l'appareil hôte doit porter une étiquette donnant le FCC ID et le IC du module, précédé des mots « Contient un module d'émission », du mot « Contient » ou d'une formulation similaire exprimant le même sens, comme suit :

Contains IC: 24476-0743337A

2.7.5. CAN ICES-3 (A) / NMB-3 (A)

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de classe A est conforme à la norme canadienne ICES-003.

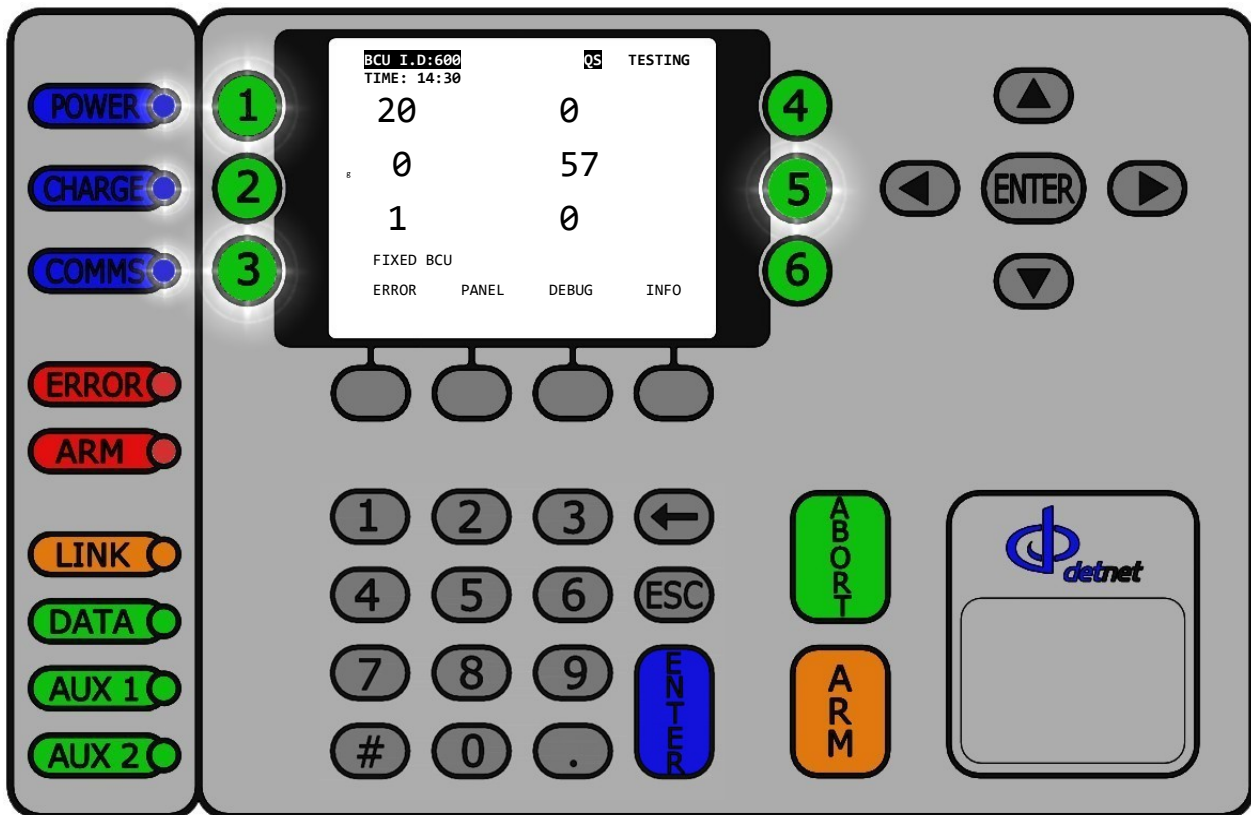
2.8. DISCLAIMER

This document forms part of the User Manual for the BlastWeb System and is considered to be confidential. This document contains restricted information for company and channel partners' application only.

Should any of the restricted information contained in this document be disclosed to any third party either intentionally or unintentionally, DetNet South Africa will not be held responsible, accountable or liable for any resulting event and or issue.

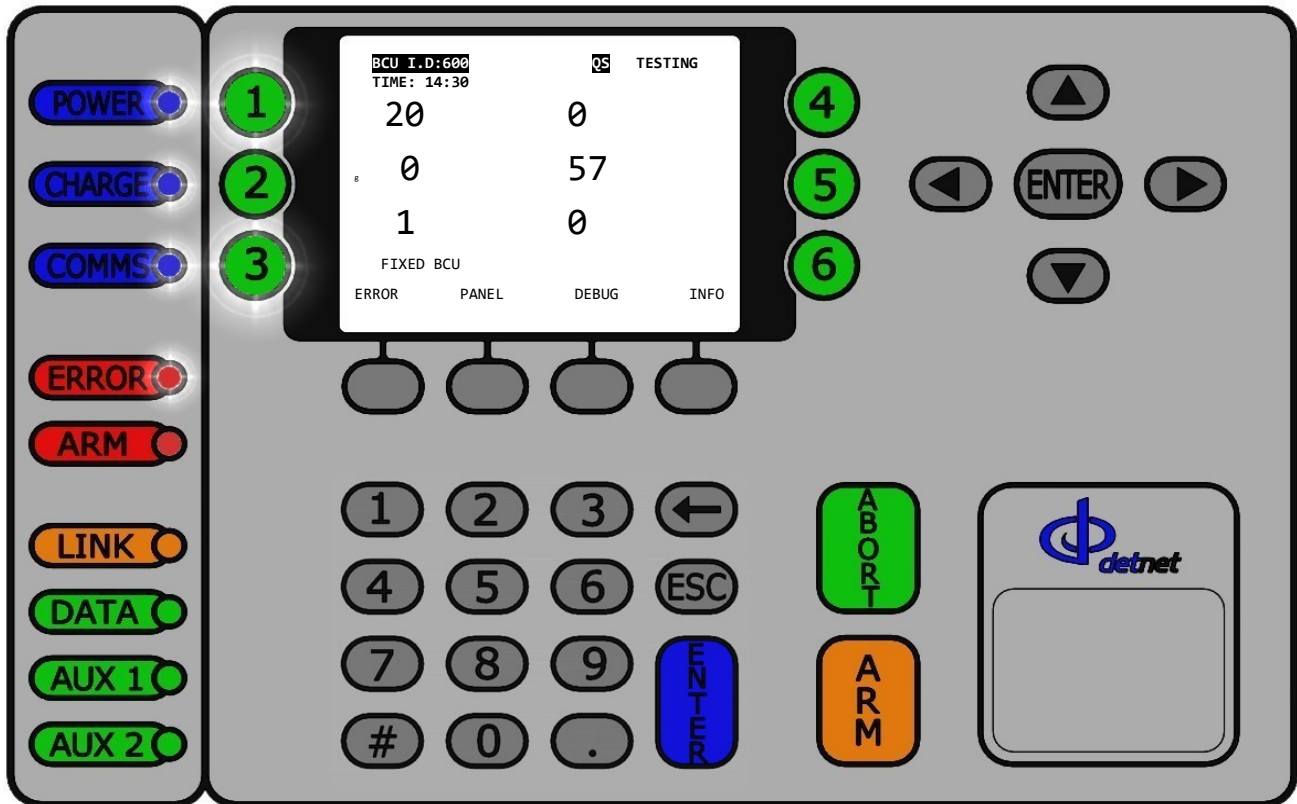
3 OPERATION

3.1. Good Panel



- Power LED – On
 - Charge LED – On
 - Comms LED – On/Off
 - Error – Off
 - Arm – Off
- Panel 1 LED On - 20 good devices connected
 - Panel 2 LED Off - not connected
 - Panel 3 LED On - 1 good device connected
 - Panel 4 LED Off - not connected
 - Panel 5 LED On - Carrick Electric Starters connected
 - Panel 6 LED Off - not connected
- Error Soft Key
 - Panel Soft Key
 - Debug Soft Key
 - Info Soft Key

3.2. Bad Panel



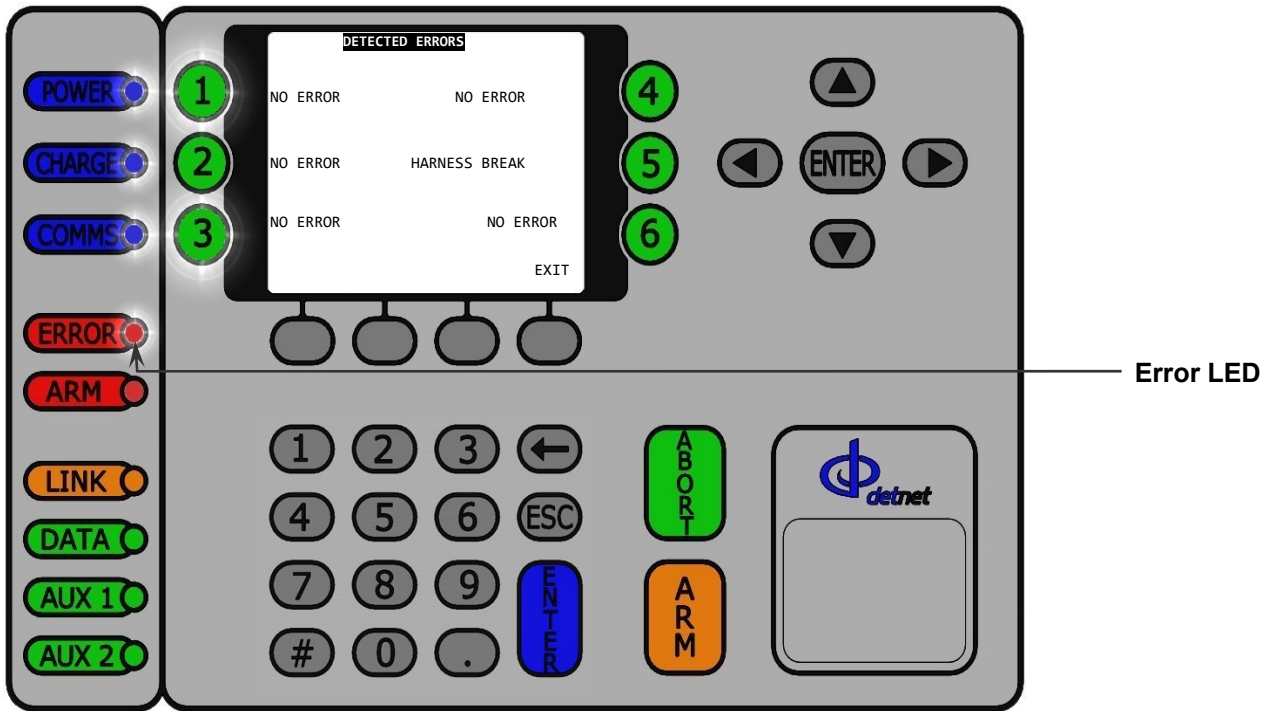
- Power LED – On
- Charge LED – On
- Comms LED – On/Off
- Error – On
- Arm – Off

- Panel 1 LED Off - 20 device connected
- Panel 2 LED Off - not connected
- Panel 3 LED On - 1 good device connected
- Panel 4 LED Off - not connected
- Panel 5 LED Off - 57 bad devices connected
- Panel 6 LED Off - not connected

- Error Soft Key
- Panel Soft Key
- Debug Soft Key
- Info Soft Key

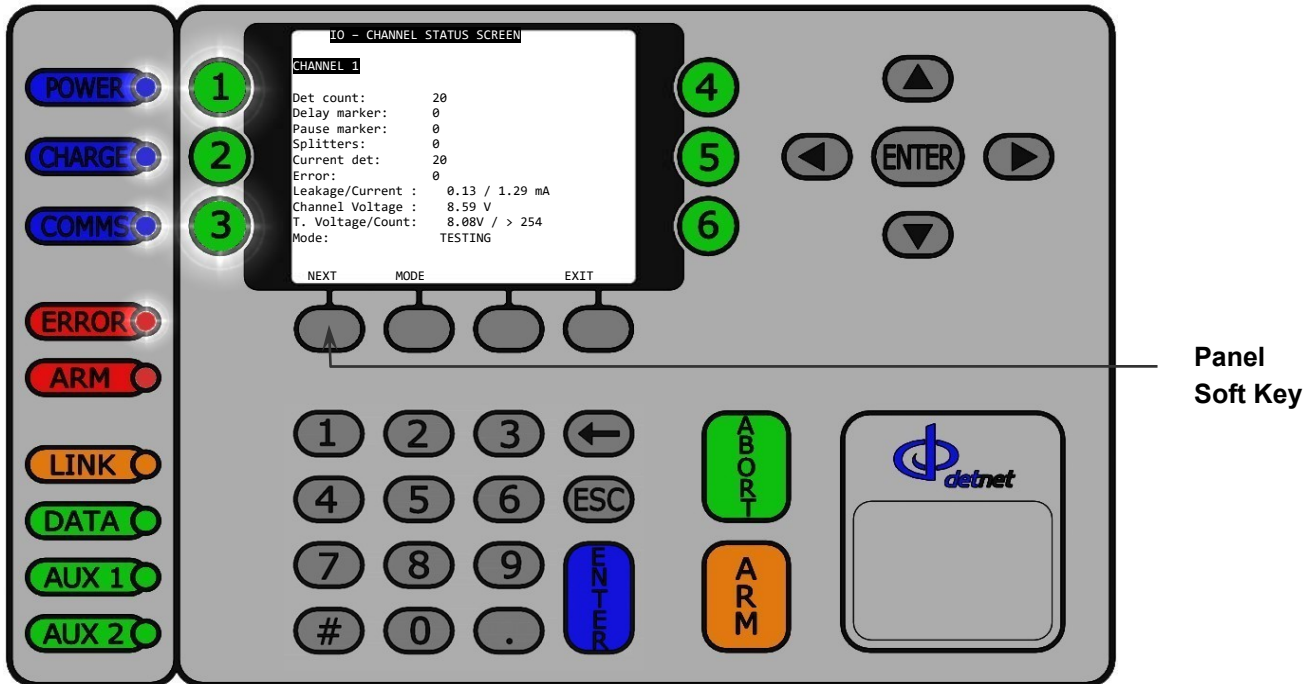
3.3. ERROR Soft Key

- Power LED – On
- Charge LED – On
- Comms LED – On/Off
- Error – On
- Arm – Off



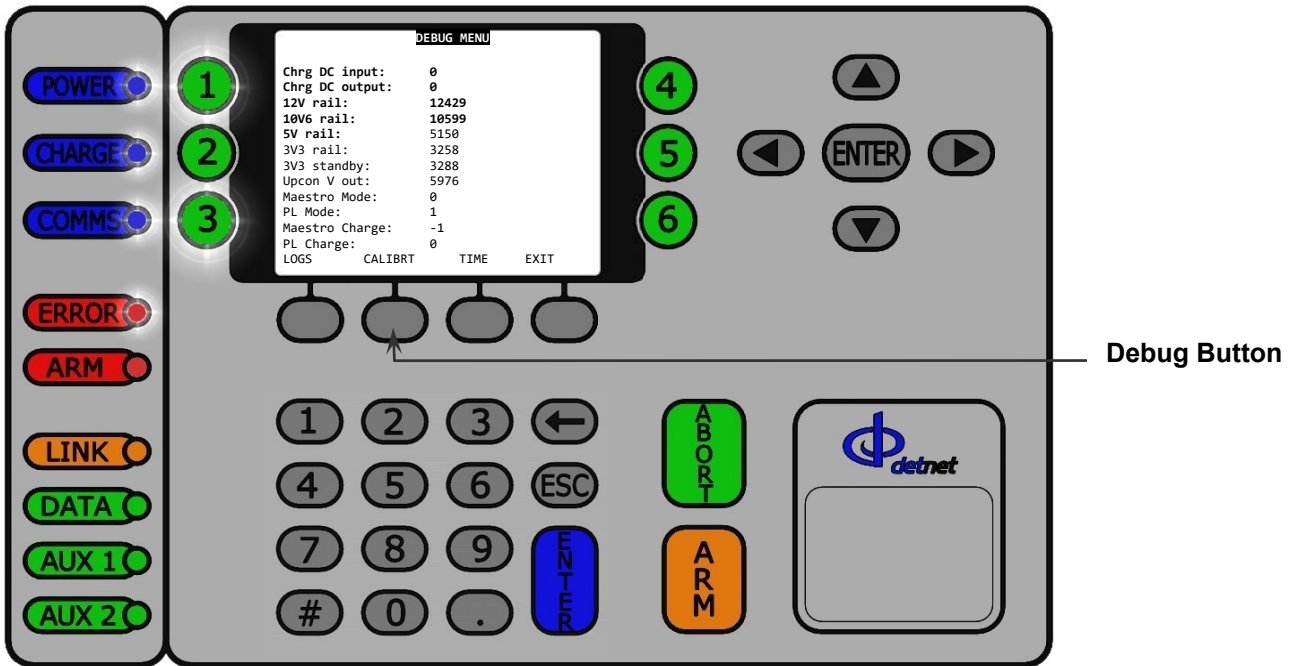
- Panel 1 LED On – No Error
- Panel 2 LED Off – not connected
- Panel 3 LED Off – No Error
- Panel 4 LED Off - not connected
- Panel 5 LED Off - Harness Break
- Panel 6 LED Off - not connected
- Exit

3.4. PANEL Soft Key



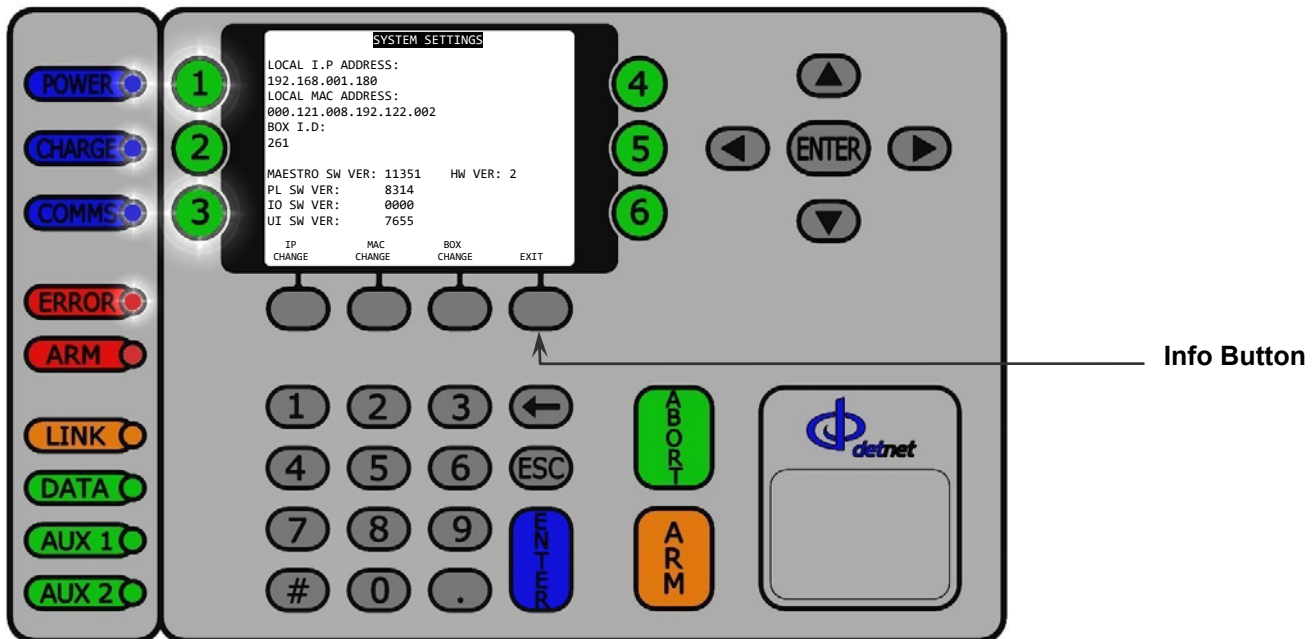
- Det Count
- Delay Markers
- Pause Markers
- Splitters
- Current det
- Error
- Leakage
- Current
- Voltage and blast count
- Mode
- Next Soft Key
- Exit Soft Key

3.5. DEBUG Soft Key



- Charge DC input
- Charge DC output
- 12V rail
- 10V.6 rail
- 5V rail
- 3V.3 rail
- 3V.3 standby
- Up-converter Volts
- Maestro Mode
- PL Mode
- Maestro Charge
- PL Charge
- Exit Soft Key

3.6. INFO Soft Key



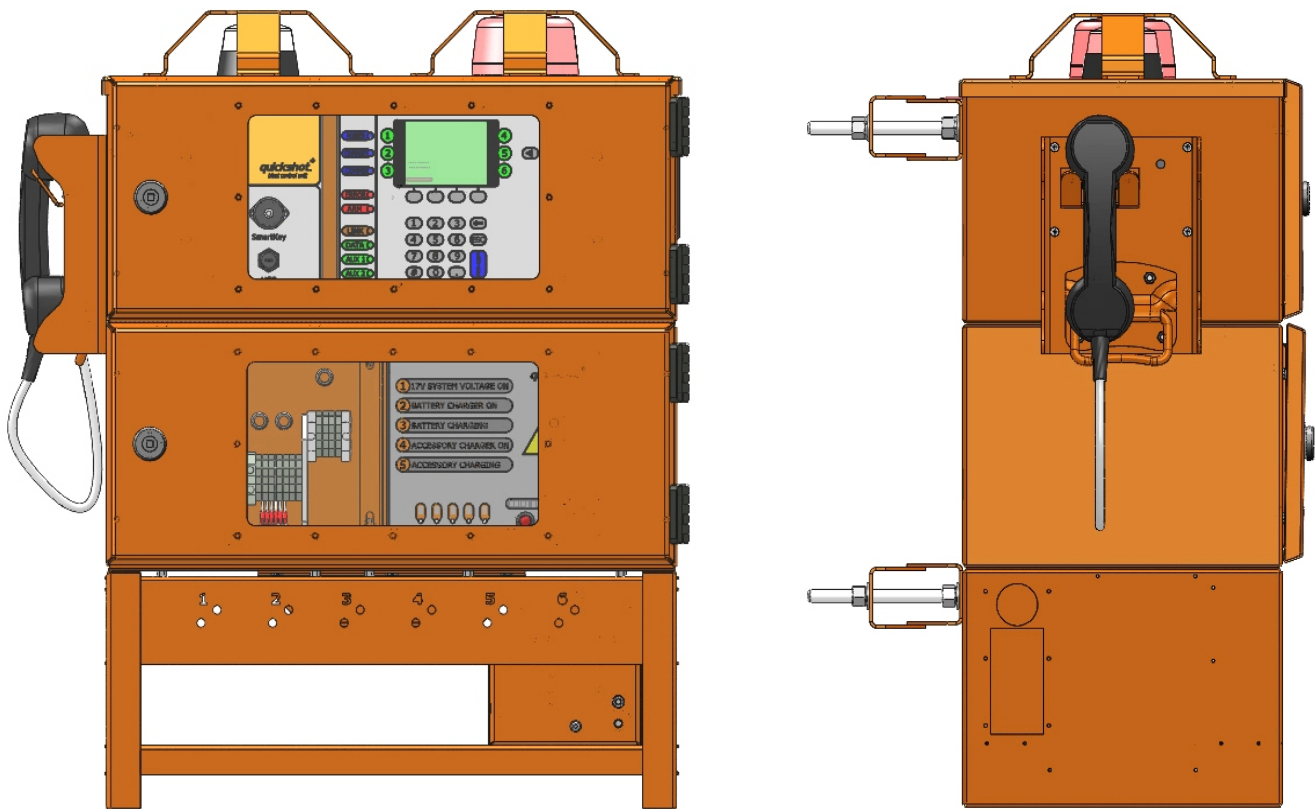
- IP Change Soft Key
 - MAC Change Soft Key
 - Box Change Soft Key
-
- Maestro Software version: 9807 Hardware version: 3
 - Powerlock Software version: 8314
 - IO Card Software version: 8787
 - UI Card Software version: 7655
-
- IP Change Soft Key
 - Mac Change Soft Key
 - Box Change Soft Key
 - Exit Soft Key

4 CONNECTING VOICE COMMS

The BCU Voice Comms Card is an add-on that slots in an already available slot in the UI enabling the BCU to provide voice communication between BCUs and the Surface Blast Controller.

A mechanical module is attached to the body over the right-hand carry handle slot completing the system with voice communication for customers requiring this function.

The BCU can send a command to the card to turn the white strobe light on or off. The cards can check the status of the handset to determine if it is on or off the hook. This can be used to signal Surface Blast Controller that a BCU handset is lifted.



5 BLASTING

5.1. Timed blast

- Insert the Red Smart Key into the Smart Key socket on the UI. The Blast Control Unit will attempt to blast all connected channels. If the user wishes not to blast the specific Blast Control Unit, he can abort the blast by removing the Smart Key from the Blast Control Unit.
- The Blast Control Unit's siren will sound, the RED strobe on top of the Blast Control Unit will flash, and the delay time will be displayed on the Blast Control Unit.
- The minimum time delay will be two minutes as default but can be programmed according to user requirements by the manufacturer.

5.2. Centralised Blast

- Insert the Yellow Smart Key into the Smart Key socket on the Blast Control Unit.
- The Blast Control Unit will attempt to blast all connected channels. If user wishes to abort the specific Blast Control Unit, he will be able to do so by de-selecting the specific Blast Control Unit from the Blast Controller on surface.
- When a Blast Adapter is inserted into a Blast Control Unit and it detects an illegal condition, it will display an error code.
- The Blast Control Unit's siren will sound; the RED strobe on top of the Blast Control Unit will flash. After a predetermined grace period as specified by the user has elapsed, the delay time will be displayed on the Blast Control Unit and it will be ready to accept the blast command.



- **ENSURE THAT THE ARMoured CABLES ARE PROPERLY EARTHED.**
- **ENSURE ALL LIGHTS AND SIRENS ON THE BLAST CONTROL UNIT ARE IN WORKING CONDITION, AS THIS IS PART OF THE BLAST WARNING SYSTEM.**
- **ENSURE ALL LED'S ARE IN WORKING CONDITION.**
- **CONNECT THE SUPPLIED VOLTAGE CORRECTLY.**
- **ENSURE THAT BACK-UP BATTERY IS KEPT IN GOOD CONDITION AND MAINTAINED REGULARLY.**
- **REGULAR TESTING IS REQUIRED BY SWITCHING OFF THE MAINS FOR 10 MINUTES AND OBSERVING WHETHER THE BATTERY DRIVES THE SYSTEM NORMALLY FOR THAT PERIOD. IF IT DOES NOT POWER THE SYSTEM FOR LONGER THAN TEN MINUTES, REPLACE THE BATTERY.**
- **ENSURE ALL ERROR CODES ARE ATTENDED TO BEFORE LEAVING THE BLAST CONTROL UNIT.**
- **DO NOT PRESS THE "ABORT" BUTTON ON THE UI DURING ARMING AS THIS WILL CAUSE THE BCU TO ABORT THE BLAST SEQUENCE.**