LT0711

QE20
EMERGENCY WARNING SYSTEM

OPERATOR'S MANUAL

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The Vigilant QE20 EWS is a product of:

Johnson Controls
17 Mary Muller Drive
Christchurch
NEW ZEALAND

Tel : +64-3-389-5096

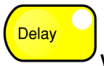
RESPONDING TO ALARM ACTIVATIONS – QUICK GUIDE

When the QE20 detects an alarm condition the buzzer beeps and the Alarm LED turns on for the zones that are in alarm.

If the QE20 is in AUTO it should be left to automatically carry out the evacuation so that all occupants are evacuated from the building.

Press the **Silence Buzzer** button 

to silence the panel buzzer.

If the QE20 has Delayed Alarm Operation running, the **Delay** LED 

will flash for the duration of the delay. The delay can be cancelled by pressing the **Delay** button so that the evacuation commences immediately.

If the QE20 is in MANUAL when the alarm is detected, no automatic evacuation is triggered. It will be necessary to manually evacuate the required zones - press the **Evac** button 

for each zone to be evacuated, or the **All Evac** button 

to evacuate all zones. Alternatively, the automatic evacuation can be initiated by pressing the **Auto** button 

.

Once the emergency situation is over and the occupants are allowed to return to the building, press 

to take manual control, press 

to silence all the warning outputs and then press 

to clear all alarm conditions and alert / evacuate activations. Press 

to re-enable the outputs.

A Speech announcement could be made to all occupants to advise them that the incident is over and that a return to the building is possible. Press 

, then pick up the microphone, hold down the Press-To-Talk (PTT) button and once the green Talk LED is on make the announcement. When finished, release the PTT button and press **All Speech** 

to clear the selection.

When all alarms have been cleared and reset the QE20 can be returned to automatic operation. Press 

RESPONDING TO FAULTS – QUICK GUIDE

When a fault is detected the QE20 will sound the buzzer continuously and indicate the presence of the fault – via the individual zone Fault LEDs if the fault relates to a specific zone, and the common fault LEDs on the master keyboard module.

Press 

to turn off the fault buzzer. It will resound if a new fault is detected.

To determine the details of the fault(s) touch the LCD touchscreen to display the Main Menu and touch the **STATUS** button then the **FAULTS** button. This will show all the faults present in the QE20. The **EVENTS** button in the Status menu can be pressed to display the time-ordered list of events – with the most recent at the top. This can be used to identify a transient fault that might have cleared already. Details on using FAULTS and EVENTS commands are given in Section 7.4.1 and 7.4.3 respectively.

The cause of the fault condition will need to be investigated – usually by the service company.

Once the fault is repaired the QE20 will automatically clear the fault indication.

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AMENDMENT LOG

24 May 2023	Issue 1.0	First release.

CHAPTER 1
INTRODUCTION

1.1 ARRANGEMENT OF THIS MANUAL

This manual describes the front panel operator functions and indications for the Vigilant QE20 Emergency Warning System (EWS).

Chapter 1 provides introductory information about this and the other manuals that are available for the QE20.

Chapter 2 describes the basic functionality of an Emergency Warning System (EWS), the grades of an EWS as defined in Australian Standard AS 4428.16:2020, and some of the features of the QE20.

Chapter 3 defines the two main operating modes of an EWS – AUTO and MANUAL, plus how Test Mode allows an operator to observe the specific evacuation phasing programmed into the QE20 and how to gain experience using the QE20 without activating warning signals to the occupants of the building.

Chapter 4 provides guidance on how to respond to alarm and fault conditions.

Detailed operation and use of the QE20 is covered in the following chapters.

Chapter 5 describes the controls and indications on the master module of the QE20 user interface.

Chapter 6 describes the functions available on the zone modules of the QE20 user interface.

Chapter 7 describes using the LCD touchscreen to review system information, detailed fault status and history, plus change some site properties like time & date, amplifier volume, etc.

1.2 QE20 DOCUMENTATION

1.2.1 PRODUCT RELATED

The following QE20 product manuals are available:

LT0712 **QE20 Installation and Commissioning Manual**, provides details for installing, commissioning and placing into operation the QE20 system.

LT0709 **QE20 Service Manual**, provides basic information for maintaining and servicing the QE20 system.

Individual installation guides for each module are also available.

LT0694 LIT,QE20 PSE 27A,INSTALLATION GUIDE
LT0695 LIT,QE20 EXTDR MODULE BLANK INSTALL INSTRUCTS
LT0696 LIT,QE20 CONTRL MODULE INSTALL INSTRUCTIONS
LT0697 LIT,QE20 RELAY MODULE INSTALL INSTRUCTIONS
LT0698 LIT,QE20 BASIC WIP MODULE INSTALL INSTRUCTS
LT0700 LIT,QE20 RS485 NETWORK MODULE, INSTALL INSTRUCTS
LT0701 LIT,QE20 AMP MODULE,INSTALL INSTRUCTIONS
LT0702 LIT,QE20 FP1187/89 QE20 HINGE KIT INSTALL GUIDE
LT0703 LIT,QE20 FP1186 QE20 MODULE MOUNTING FRAME INSTALL GUIDE
LT0705 LIT,QE20 SPLITTER MODULE,INSTALL INSTRUCTIONS
LT0706 LIT,QE20 USER INTERFACE MODULE,INSTALL INSTRUCTS
LT0707 LIT,QE20 8Z/8WIP 16Z EXTDR MODULE INSTALL INSTRUCTS
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LT0728 LIT,QE20 AIR FILTER INSTALL INSTRUCTIONS
LT0738 LIT,QE20 FP2029 GP MOUNTING BRACKET INSTALL GUIDE

1.3 TERMINOLOGY

BGM	Background music
CRC	Cyclic Redundancy Check
ECP	QE20 Emergency Control Panel user interface (MECP or SECP)
EICIE	Emergency Intercom Control & Indicating Equipment (the QE20 WIP portion)
EVAC	Evacuate button or LED
EWCIE	Emergency Warning Control & Indicating Equipment (QE20 EVAC portion)
EWS	Emergency Warning System (the installed QE20 and speakers / VADs)
FIP	Fire Indicator Panel
LED	Light Emitting Diode (Visual indicator)
MCP	Manual Call Point
MECP	Master Emergency Control Panel (QE20 with highest control priority)
MUI	Master User Interface – QE20 Master keyboard module
NC	Normally Closed
NO	Normally Open
O/C	Open Circuit
PSE	Power Supply Equipment
PTT	Press-To-Talk – a button on the side of the microphone
SECP	Secondary Emergency Control Panel (QE20 repeating zone information)
S/C	Short Circuit
VAD	Visual Alarm Device (usually a bright flashing red/white LED on ceiling/wall)
WIP	Warden Intercommunication Point or Phone (special red phones for wardens)

CHAPTER 2
SYSTEM DESCRIPTION

2.1 GENERAL

The purpose of an emergency warning system (EWS) is to enable the orderly evacuation of a building in the event of an emergency. It consists of Emergency Warning Control and Indicating Equipment - the QE20 itself, plus field wiring to loudspeakers throughout the building and Visual Alarm Devices (VADs – flashing bright red/white LEDs on the ceiling/wall) located in specific areas where the background noise level may be high or hearing impaired people may be present.

The EWS is usually connected to the fire alarm system, so that when a fire is detected the EWS is automatically triggered and the building evacuated. Manual Call Points (MCP), usually white coloured, may be connected directly to the EWS to trigger non-fire emergencies (e.g., for gas leaks, tornados, lockdown, active shooter) so that other emergency signals and messages may be given to the occupants.

The QE20 achieves this by providing facilities in an integrated and flexible system, which complies with Australian Standards AS 4428.16:2020 and AS 4428.4:2016, and can be installed to comply with AS1670.4 or NZS 4512.

An example QE20 front panel layout is shown in Fig 2.1.

Figure 2.1 Example QE20 Front View

2.2 EMERGENCY WARNING SIGNALS

The Emergency Warning System generates audible warning signals through loudspeakers positioned throughout the premises, supplemented by visual alarm devices (VADs) in areas of high background noise or where hearing impaired people may be, to:

i) alert the building wardens and occupants of an emergency situation
ii) instruct the occupants to evacuate the building
iii) announce live speech to the occupants of the building.

The building is divided up into evacuation zones, with at least one zone per floor of the building.

Zones may be activated independently, or all together for each of three warning signals (and additional signals if provided).

The default emergency signals for systems to AS 1670.4 are, in increasing priority:

1) ALERT A half second pulse of 520Hz square wave followed by 3.5s of silence, repeating twice more (making a 12 second period), followed by the alert message. The default message is "Warning. The fire alarm system has operated, standby for further instructions". This alerts the floor wardens to take up their designated positions and prepare for the evacuation. It also alerts the occupants to the existence of an emergency situation and that they should be ready for evacuation.

For premises with no floor wardens, there will be **no** alert signal automatically generated in the event of an alarm; however it can be selected manually from the keyboard.

2) EVACUATE The evacuate signal is to tell the occupants to leave the building.

The default evacuate signal (defined by AS 4428.16) consists of:

- Three half second (0.5s) pulses of 520Hz square wave, each followed by 0.5s of silence, with a further 1s of silence to make a total period of 4 seconds (as per ISO 8201). This is repeated twice to make a 12 second period.
- A voice message occupying multiples of 4s periods up to a maximum of 16s, followed by 4s or 8s of silence.
  The default evacuate message is "Evacuate as directed" spoken twice.

The default emergency signals for systems to NZS 4512 are, in increasing priority:

1) ALERT A 420Hz square wave pulsed with equal duration on and off periods of 0.625 second, with the first 6 pulses ramping up in amplitude to full volume. After 15-24 seconds the default alert message "Warning. The fire alarm system has operated, standby for further instructions" is played. This alerts the floor wardens to take up their designated positions and prepare for the evacuation. It also alerts the occupants to the existence of an emergency situation and that they should be ready for evacuation.

2) EVACUATE The default evacuate signal consists of:

A 24 second cycle containing: 4 x 3.75 second periods of ramping frequency square wave (500 – 1200Hz) followed by 0.25s of silence, plus 8 seconds of message. The default evacuate message is "Evacuate the building using the nearest fire exit".

Live speech is higher priority than both Alert and Evacuate signals.

The QE20 includes equipment to supervise the wiring to the loudspeakers, VADs, fire alarm panel, etc, for open circuit or short circuit wiring faults and will indicate a fault condition when these are detected.

2.3 INTERCOMMUNICATION SYSTEM

The Emergency Intercommunication System (EIS), or Warden Phone system, allows the Building Warden or the fire brigade to communicate verbally with Zone or Floor Wardens at specific locations on each floor or zone of the building via special red phones (WIPs). The system includes the master phone and WIP selection buttons / indications on the QE20, and the WIP handsets in each zone of the building.

Facilities are provided on the QE20 to activate, control and monitor the status of each call, as well as report faults on the cabling to the WIP handsets. LED indicators mounted on the QE20 display the call status of each WIP and, in conjunction with an internal fault sounder, are used to alert the operator to any abnormal conditions.

The QE20 can have a different number of WIPs per zone. The default keyboard/display arrangement has 3 WIP buttons and status indicators per zone allowing each to be called, answered and fault monitored on an individual basis. By grouping multiple rows of the keyboard together, more than 3 WIPs can be accommodated per evacuation zone.

- W A R N I N G -

Do not manually depress the hook switch of any WIP while holding the earpiece close to your ear. Always place the handset on the cradle to operate the hook switch. Some makes/models/configurations of WIP phones use the earpiece to generate the ring sound and this may be uncomfortably loud if it is close to your ear.

2.4 GRADES OF EWCIE

AS 4428.16 defines three grades of EWCIE:

Grade 1: A multi-zone EWCIE with individual controls for each zone, that latches alarm conditions from the fire alarm panel so it does not automatically silence the evacuation signals when the fire alarm panel is silenced or reset. Only a Grade 1 system may have a Delay before entering the alarm condition.

Grade 2: A multi-zone EWCIE that does not require individual controls for each zone, and may be silenced when the fire alarm panel is silenced or reset.

Grade 3: A single zone EWCIE that is controlled by the fire alarm panel.

The National Construction Code (NCC) and AS 1670.4 define which grade of EWCIE must be installed in each type of building.

QE20 is primarily a Grade 1 EWCIE, but may be configured as Grade 2. The optional functions for a Grade 1 EWCIE defined in AS 4428.16 may be configured on specific QE20s.

2.5 ARRANGEMENT OF QE20 EQUIPMENT

The QE20 may be provided in one or more cabinets, depending on the size and arrangement of the system.

The Master Emergency Control Panel (MECP) contains the user controls, status indicators, speech microphone and master WIP handset for the operation of the system. It is usually installed in a convenient, safe and quiet location to enable authorised personnel and the fire brigade to control the QE20 in the event of an emergency.

Secondary Emergency Control Panels (SECP) can be connected to the MECP for increased operational flexibility. These QE20s usually include the same controls and indications as the MECP, but are assigned a lower priority than the MECP, so that the MECP can always take manual control and override an SECP.

In this manual the term ECP is used to refer to QE20 user control panels, whether they be an MECP, SECP, or remote panels on a network.

Equipment racks house the electronic equipment necessary for the generation of the evacuation signals, controlling flashing lights, WIP intercommunications, alarm inputs, power supply and battery backup, plus the termination points for the field wiring associated with these functions.

In small systems the equipment rack will usually be housed in the same cabinet as the ECP. In larger systems the equipment racks could be installed remotely, usually to reduce the length of field wiring when the ECP needs to be located some distance from the zones it controls.

The QE20 is designed in a modular fashion, allowing flexible configuration and system sizes to be achieved. The primary variations between systems are the cabinet sizes, the number of modules fitted and the power supply capacity.

Multiple QE20s may be networked together using different cable types to achieve an overall site system.

2.6 ANCILLARY FUNCTIONS

The QE20 may include ancillary functions such as:

- Background music
- Paging from remote microphones or paging consoles
- Automatic test functions and signal generation
- User controlled signal generation from push buttons on an ECP (e.g., test announcements)
- Programmable control and operation based on input and output states.

Generally these are over-ridden on receipt of an alarm condition or mains power failure.

CHAPTER 3
AUTO / MANUAL / TEST MODES

3.1 OPERATING MODES

The QE20 can be operated in one of two modes: AUTO or MANUAL.

Usually the QE20 will be left in AUTO mode, so that on detection of a fire alarm or activation of a manual call point (MCP) the QE20 will automatically start generating the alert, evacuate or other warning signals to the occupants of the building. For a fire alarm, the QE20 will have been programmed with a predefined (phased) evacuation plan, to ensure that the building is evacuated in a safe and orderly manner. The QE20 will continue with the evacuation until it is reset. Manual control of the QE20 evacuation zones (other than making speech announcements) is not possible in AUTO mode.

Refer to section 3.4 for more information on the evacuation process.

In MANUAL mode automatic operation following an alarm is turned off and the operator of the QE20 must manually select the alert, evacuate or speech functions for each (or all) of the zones when an emergency situation occurs. Note, the QE20 can be switched to AUTO after the alarm condition has been received, so that an automatic evacuation then takes place.

The **Auto** and **Manual** buttons on the front of each ECP allow the operating mode to be set. The resulting mode is indicated on the LEDs located within the pushbuttons.

As the LEDs are under software control it is possible for the LEDs to not follow the button presses, especially on networked systems. For example, pressing **Manual** at an SECP may not result in Manual mode being obtained. This could be because the MECP or another higher priority ECP is already in MANUAL and thus has manual control of the system.

Generally, **Auto** and **Manual** are mutually exclusive – selecting one will clear the other. However, in a networked system a QE20 may be displaying zones from a number of QE20 panels – some of which could be in MANUAL and some in AUTO. Thus it's possible for the QE20 to indicate both **Auto** and **Manual** at the same time. In this case one of the LEDs will be flashing.

Refer to the following sections for using the buttons and LED indications.

3.2 AUTO MODE

AUTO is the standard operating mode, whereby the QE20 is ready to carry out its principal function, i.e., automatic evacuation of the building in the event of alarm. The way in which the QE20 carries out the evacuation is dependent on the location and type of alarm, plus the phased evacuation plan programmed into the QE20. The automatic cascade sequence is described in Section 3.4.

Note that after an alarm has occurred it is possible to switch a QE20 to Manual, select or de-select warning signals for various zones and then return to AUTO mode, whereupon the automatic evacuation will continue from the new setting if there is still an alarm condition present.

It is therefore important that all alarm conditions and zone Alert and Evacuate indications are cleared (Reset) before switching to AUTO unless the evacuation is to be continued.

3.3 MANUAL MODE

When the QE20 is in MANUAL, the automatic evacuation of the building in response to an alarm is turned off and the operator has manual control of the system.

Switching the MECP to Manual will always result in MANUAL mode being obtained. Switching an SECP or sub-panel to MANUAL will succeed only if all higher priority ECPs are in AUTO.

If an ECP is in MANUAL, then its **Manual** LED will be on (steady if all zones are in manual, continuous flashing if only some zones are in manual control). The **Manual** LEDs at any other ECPs that display or control any of the zones will flash with a flash-flash-pause cadence to indicate another ECP has manual control.

In MANUAL the zone **Alert** and **Evac** buttons (for those zones that are in manual) are enabled so that emergency signals can be manually activated for each or all of the zones as required.

Ensure all alarm conditions and all zone alert and evacuate functions have been cleared (e.g., **Reset**) before switching from MANUAL to AUTO, unless it is intended for the evacuation to be continued in AUTO.

3.4 AUTOMATIC PHASED EVACUATION

When an alarm occurs in AUTO, the QE20 begins to evacuate the building according to the location and type of alarm, and the predefined plan to ensure that the building is evacuated in a safe and orderly manner. Note that a time delay can be included after the alarm detection before the evacuation is started – refer to Section 3.6 Delayed Alarm Operation.

The evacuation of a system installed to AS 1670.4 usually starts with the Evacuate signal in the alarm zone. After a time delay the evacuate signal is generated in adjacent zones (usually the two above and one below for multi-storey buildings). Over time the Evacuate signal will spread through the rest of the building. Alert signals will be generated before the evacuation signal if the building evacuation plan includes trained floor wardens to respond to the Alert signals.

For QE20s installed to NZS 4512 typically the zone with the alarm and often some nearby zones receive the Evacuate signal, with the rest of the building receiving the Alert signal. Over time the Evacuate signal spreads through the rest of the building.

This phased "cascade" evacuation strategy is programmed into the QE20 to meet the particular building and regulatory requirements.

3.5 TEST MODE

Test Mode can be activated at a QE20 by pressing the **Test** button to test operation of the user controls or observe how the QE20 will react to alarm conditions without generating the warning signals to the occupants of the building. Note all zones must be normal (not in

alarm, Alert, Evac or Speech) and Silence Warning must be off to allow Test Mode to be activated.

When the QE20 is in AUTO and TEST, alarms can be generated on the fire alarm panel, on directly connected MCPs or simulated on the QE20 by pressing the **Alert** button for a zone. The QE20 will operate as usual, but no warning signals will be generated in the building zones. This allows the programmed automatic operation to be observed.

In MANUAL and TEST the **Alert, Evac**, **Speech**, **Manned** and **Cleared** functions can be selected for the zones without activating the warning signals in the zones or being sent to other QE20 panels on the network. This allows the operator to practice evacuation procedures, including the making of speech announcements.

Special care must be taken with Test Mode, especially with networked systems or those where not all zones are put into test. For example, the phased evacuation could progress from the zones under test to zones that are not being tested; testing one QE20 could cause activation of another QE20 where the alarm, alert or evacuate conditions are linked; or putting a main QE20 panel into test could stop the phasing or other QE20s that rely on the main QE20.

Also all alarms must be cleared from their physical sources (fire alarm panel or MCPs) before exiting Test Mode, otherwise they will be treated as real alarms and will activate the QE20 in AUTO.

For these reasons Test Mode may have been disabled during configuration of the QE20.

The Warden Phone buttons and indications can be used as usual during Test Mode.

3.6 DELAYED ALARM OPERATION

It is possible to include a delay between the detection of an alarm condition and the commencement of the automatic evacuation.

This could allow time for the operator to check if the alarm is false, and if so switch to MANUAL before the evacuation is started.

Alternatively, if the operator determines that the alarm condition is real, the delay can be cancelled and the evacuation started immediately by pressing the **Delay** key.

The system configuration determines if Delayed Alarm Operation is available. If Delayed Alarm Operation is not configured pressing the **Delay** key will have no effect.

Note even though the **Delay** indicator is on, the configuration may have a delay of 0 seconds programmed.

CHAPTER 4
RESPONDING TO ALARMS & FAULTS

4.1 RESPONDING TO ALARM ACTIVATIONS

When the QE20 detects an alarm condition, e.g., from the connected fire alarm panel or an MCP, the buzzer beeps and the **Alarm** LED turns on for the zones that are in alarm.

The **Silence Buzzer** button can be pressed to silence the buzzer.

If the QE20 is in AUTO it will automatically commence the pre-programmed evacuation depending on the alarm type and location. If the QE20 has Delayed Alarm Operation configured and enabled, the **Delay** LED will flash for the duration of the delay. The delay can be cancelled by pressing the **Delay** button so that the evacuation commences immediately, or **Manual** can be pressed so that the evacuation does not start.

Generally the QE20 should be left in AUTO to complete the evacuation so that all occupants are evacuated from the building.

However, should manual intervention be required, then the **Manual** button can be pressed and any changes made to the alert and evacuate states of the zones. For example, outside of normal working hours the evacuation could be sped up by placing a number of zones into the Evacuate state and then activating AUTO again. The automatic evacuation will then continue from the new state, for example, stepping up the building from those zones in evacuate.

If the QE20 is in MANUAL and an alarm is detected, the buzzer beeps and the **Alarm** indicator for the zones in alarm turn on. No automatic evacuation is triggered. It will be necessary to manually activate an evacuation of the required zones (press the **Evacuate** button for each zone to be evacuated, or the **All Evacuate** button to evacuate all zones). Alternatively, an automatic evacuation can be commenced by pressing the **Auto** button.

When the incident is over and the occupants can return to the building, the warning signals will need to be turned off and the alarm conditions reset. The simplest way of achieving this is to switch the QE20 to MANUAL (press the **Manual** button so the LED is on steady), press the **Silence Warning** button (so the LED is on) and then press the **Reset** button. This will clear all activated zones (in Alert or Evacuate) and reset the alarm conditions that have been removed.

As it's possible that the fire alarm panel or MCPs that were activated are still in the alarm condition, these alarms will remain indicating on the QE20 and it's not advisable to switch back to AUTO, as the evacuation will just start again. The fire alarm panel will need to be reset and any operated MCPs restored, and then the alarms **Reset** on the QE20 before the **Silence Warning** button is pressed (so the LED is off) and the **Auto** button pressed so the QE20 is ready for the next alarm.

A Speech announcement could be made to all occupants to advise that the incident is over and that a return to the building is possible. Press **All Speech**, then pick up the microphone and make the announcement while holding down the Press-To-Talk (PTT) button on the microphone. Release the PTT button and press **All Speech** to clear the indications, when finished.

4.2 RESPONDING TO FAULT INDICATIONS

The QE20 supervises the wiring to most of its connected devices and will generate a fault condition when an open circuit or short circuit is detected on the wiring. The QE20 also supervises the condition of the mains power, standby batteries and many of its internal functions.

When a fault is detected the QE20 will sound the buzzer (steady tone) and indicate the presence of the fault – via the individual zone Fault LEDs if the fault relates to a specific zone, or the Common Fault LEDs on the master keyboard module.

The **Silence Buzzer** button can be pressed to silence the buzzer.

The Zone LED Indications are described in Section 5.2 and the specific fault conditions can be recalled using the touchscreen. Refer Section 7.4.1.

The cause of the fault condition will need to be investigated and repaired – usually by a trained representative of the service company. Once the fault is repaired the QE20 will automatically clear that fault indication.

CHAPTER 5
MASTER USER INTERFACE FUNCTIONS

5.1 MASTER USER INTERFACE MODULE

The Master User Interface (MUI) Module of the QE20 is shown in Figure 5.1. The controls and indications are grouped into 5 functional areas.

- Evacuation Zones
- Warden Phones
- Controls
- Touchscreen LCD (on LHS of keyboard)
- User Buttons (8 buttons on RHS of keyboard).

These are covered in the following sections.

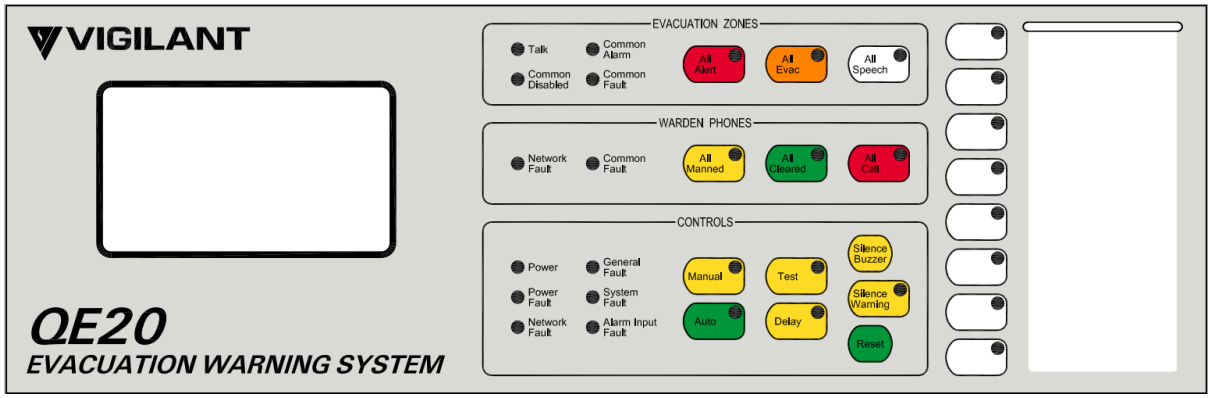


Figure 5.1 Master User Interface (MUI) Module

5.2 "CONTROLS" KEYS & INDICATIONS

The CONTROLS area of the MUI includes buttons and indications for the overall system.

Indicators

Text	*Colour*	*Description*
Power	Green	Off = Power Totally Off On = Power On
Power Fault	Yellow	Off = Power OK On = There is a fault with the power supplies – battery disconnected, low voltage or capacity test fail; Mains fail; PSE failed.
Network Fault	Yellow	On = Fault with a communications path to a remote QE20 panel or a fire panel connected via the network, or the remote panel has failed.
General Fault	Yellow	On = A fault is present – refer to the other Fault indicators, or use the touchscreen to recall the details – refer to Section 7.4.1
System Fault	Yellow	On = System Fault (e.g. Watchdog, CRC fault) is present or the connection to the internal Controller module of the QE20 has failed.
Alarm Input Fault	Yellow	On = Wiring fault (e.g., open circuit) for an input or connection to the fire alarm panel, or a fire panel is turned off / failed, or a fire zone is disabled.
Manual	Yellow	On = MANUAL at this ECP (all zones) Steady Flashing = MANUAL selected for some zones at this ECP Flash-Flash-pause = MANUAL selected for some (or all) zones of this QE20 at another QE20.
Auto	Green	On = AUTO (some or all zones are in AUTO mode)
Test	Yellow	On = Test Mode
Delay	Yellow	Off = No delay from alarm to start of evacuation (or has expired) On = Delayed Alarm Operation enabled. Flashing = Alarm Delay running
Silence Warning	Yellow	On = Warning system is silenced (all loudspeaker and VAD outputs are off, but will turn on again for a new alarm). Flashing = Warning Silenced for only some zones on this ECP.

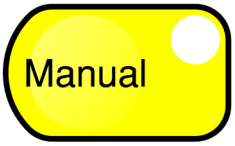
Buttons

Text	*Colour*	*Function*
Manual	Yellow	Requests MANUAL operation.
Auto	Green	Requests AUTO operation.
Test	Yellow	Turns Test Mode on/off
Delay	Yellow	Turns Delayed Alarm Operation On/Off, if configured. Cancels the delay if the delay is running (indicator is flashing).
Silence Buzzer	Yellow	Silences the local alarm/fault buzzer. Pressing and holding for more than 3 seconds activates a lamp test of all front panel LEDs for 5s.
Silence Warning	Yellow	Toggles the Silence Warning state. In the Silence Warning state the loudspeakers and VADs are silenced, but will turn on if a new alarm is detected.
Reset	Green	Resets latched alarms and faults. Clears all zone Alert, Evac and Speech selections. QE20 must be in MANUAL and Silence Warning on.

The **Auto** and **Manual** buttons select the operational mode of the QE20. Refer to Chapter 3 for a description of these modes and how they affect operation.

Note that in multi-ECP systems the ability to select MANUAL may depend on the configured priority of the ECP and the state of the other ECPs in the system.

Note the **Speech**, **Disable**, **Test, Manned, Cleared** and **WIP** buttons can be used regardless of the AUTO / MANUAL state.



If **Manual** is pressed MANUAL is requested for the ECP. If MANUAL is granted the associated **Manual** LED will turn on steady and **Auto** will be turned off. If only some zones are placed in MANUAL then the LED will flash (the AUTO LED will also remain on).

In a standalone system the request for MANUAL will always be granted and the ECP will be able to manually control the zones.

In a multi-ECP system, the request for manual control will depend on the system configuration and the Auto/Manual requests of the other ECPs. At the MECP a request for MANUAL will always be granted. At an SECP or sub-panel the MANUAL request will be granted if there is no higher priority ECP already in the MANUAL state.

If there is another QE20 already in MANUAL this will be indicated by a flash-flash pause indication on the **Manual** LED.

If **Auto** is pressed MANUAL control for the ECP is released and the QE20 will switch to AUTO if possible.

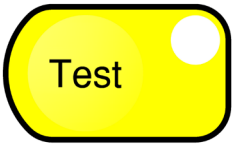
In a standalone system switching to AUTO is always possible. The **Auto** LED will turn on and **Manual** will turn off.

In a multi-ECP system the resulting mode will depend on the system configuration and the state of the other ECPs. If another ECP is requesting MANUAL it will be granted MANUAL and the QE20 will not switch to AUTO. The **Manual** LED will show a flash-flash-pause indication.

If no other ECP is requesting MANUAL the QE20 will switch to AUTO.

Note: a networked QE20 could be in both AUTO and MANUAL at the same time – if displaying zones or being controlled by other QE20 panels.

Auto	Manual	Description
ON	OFF	All zones in AUTO
OFF	ON	All Zones in MANUAL
OFF	Flash-Flash-Pause	All zones in MANUAL elsewhere
ON	Flash-Flash-Pause	Some zones in MANUAL elsewhere
ON	Flashing	Some zones in MANUAL here

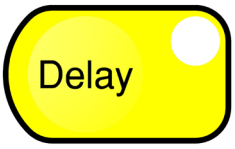


If **Test** is pressed the QE20 enters Test Mode and any warning signals activated will not be generated in their zones, but just indicated on the ECP. The associated **Test** indicator will turn on to show that TEST is active. Refer to Section 3.5 for more details about TEST. The QE20 must have no zones in Alert, Evac or Speech and Silence Warning must be off to enter Test Mode.

If **Test** is pressed while TEST is active, it will turn off TEST and perform a Reset so that any test alarms are reset and all zone's alert, evacuate, speech, manned and cleared states are cleared. Note that the QE20 will be in AUTO and any alarm conditions that cannot be reset (i.e., are still present - e.g., from the fire panel) will be treated as new alarms and automatic evacuation will be started using those alarm conditions. As the QE20 will not be in Test mode anymore all activated warning signals will sound in their zones.

Extreme care should be taken when enabling Test Mode, especially on a QE20 panel that is part of a network or where not all zones are put into test. Pressing the wrong button could activate warning signals in a zone that is not in test, or an alarm could be transferred to another QE20 on the network, or the phased evacuation move to zones that are not under test.

For these reasons the **Test** button is disabled by default and must be enabled for the site.



If **Delay** is pressed Delayed Alarm Operation will be selected, if configured (note it may be a delay of 0 seconds). The **Delay** LED will turn on.

Refer to Section 3.6 for a description of Delayed Alarm Operation.

If Delayed Alarm Operation is selected (LED on) pressing **Delay** will turn off Delayed Alarm Operation.

If an alarm is present and is being delayed, the **Delay** LED will be flashing. Pressing **Delay** will cancel the delay and the QE20 will immediately start the automatic evacuation.

When **Silence Buzzer** is pressed the buzzer is turned off. If a new alarm or fault condition is detected the buzzer will turn on again.

If the **Silence Buzzer** is held pressed for more than 3 seconds a Lamp Test will be started – whereby all front panel LEDs are turned on and the buzzer beeped. Release **Silence Buzzer** to stop the lamp test.

Pressing **Silence Warning** will turn all warning signals (loudspeakers and visual alarm outputs) off and keep them off while the **Silence Warning** LED is on.

A new alarm condition will automatically clear **Silence Warning** so that the speakers and VADs operate.

If **Silence Warning** is pressed while the associated LED is on, all warning signals are enabled again – they will operate if the zone is in Alert / Evacuate or Speech.

Flashing of **Silence Warning** indicates that some zones are in the Silence Warning state.

If **Reset** is pressed in MANUAL and when **Silence Warning** is on, all latched alarm and fault indications will be reset and cleared, plus all Zones in the Alert, Evacuate or Speech will be cleared. Any alarm or fault conditions that are still physically present (e.g., fire panel alarm or MCP activated) will remain. These will need to be cleared at their source and then **Reset** before pressing **Auto.**

Note: **Reset** is not operational in AUTO or if **Silence Warning** is not active.

5.3 "EVACUATION ZONES" BUTTONS & INDICATORS

See Section 6.3 for a description of using the All-Zone Evacuation buttons.

Indicators

Text	***Colour***	***Description***
Talk	Green	On = Emergency microphone speech channel open. On networked systems a further delay of ~2s may be required before speaking into the microphone so that all remote amplifiers are enabled.
Common Disabled	Yellow	On = 1 or more zones Disabled
Common Alarm	Red	On = 1 or more zones in Alarm
Common Fault	Yellow	On = 1 or more zones in Fault
All Alert	Red	On = All Zones Alert is active
All Evac	Red	On = All Zones Evac is active
All Speech	Red	On = All zones are selected for Speech

Buttons

Text	***Colour***	***Function***
All Alert	Red	Activates Alert signal to all zones (on some QE20 this may not be all zones).
All Evac	Orange	Activates Evac signal to all zones (on some QE20 this may not be all zones).
All Speech	White	Selects Speech (Emergency microphone) for all zones (on some QE20 this may not be all zones).

5.4 "WARDEN PHONES" BUTTONS & INDICATORS

See Section 6.4 for a description of using the **All-Manned**, **All-Cleared**, and **All-Call** pushbuttons.

Indicators

Text	***Colour***	***Description***
Network Fault	Yellow	On = Fault with communication paths to remote WIPs
Common Fault	Yellow	On = 1 or more WIPs in wiring fault
All Manned	Green	On = All **Zones Manned** is active (on some QE20 this may not be all zones).
All Cleared	Orange	On = All **Zones Cleared** is active (on some QE20 this may not be all zones.
All Call	Red	On = All WIPs are being called (on some QE20 this may not be all WIPs).

Buttons

Text	***Colour***	***Function***
All Manned	Green	Turns On/Off all Zone **Manned** indicators
All Cleared	Orange	Turns On/Off all **Zone Cleared** indicators
All Call	Red	Calls all WIP phones

5.5 USER BUTTONS & INDICATORS

Eight user configurable buttons are provided on the Master User Interface. The function of each button is programmable and will usually be described using the slide-in label adjacent to the buttons.

In general the operation will be:

- Pressing the button will activate the programmed function and turn the LED on.
- The LED will remain on while the function is in progress.
- The LED will turn off when the function completes.
- Pressing the button while the LED is on will terminate the function and turn the LED off.

5.6 TOUCHSCREEN AND LCD

Refer to Section 7 for details on using the touchscreen and LCD.

5.7 SPEECH MICROPHONE

To make live speech announcements it is necessary to first select **Speech** for the zone or zones that are to receive the announcements. Refer to Section 6.5 for selecting individual zones, or Section 6.3 for All-Zones.

Then pick up the microphone and, holding it about 10-20mm from your mouth, push in the Push-To-Talk (PTT) button on the side of the microphone and start making the

announcement when the green **Talk** LED located on the Master Keyboard turns on (on some networked systems a delay of ~2s after the **Talk** LED turns on should be added to allow for all remote amplifiers to be enabled).

Release the PTT button when you have finished making the announcement.

5.8 MASTER WIP HANDSET

The Master WIP must be removed from the cradle to enable voice communication with the warden phones (WIPs) currently in talk mode. It does not need to be lifted to start or answer calls.

CHAPTER 6
ZONE FUNCTION KEYS

6.1 ZONE ALERT / EVAC CONTROLS

The QE20 must be in MANUAL for the individual zone **Alert** and **Evac** buttons and the **All-Alert** and **All Evac** pushbuttons to work.

In general, each key acts with a toggle action. I.e., if the associated LED is off then pressing the button will select the function and turn the LED on. Similarly, if the LED is on, pressing the button will de-select the function and turn the LED off.

Each key press should result in a short audible beep being heard. If no beep is heard then this may be due to the zone not being in MANUAL.

The **Alert** and **Evac** buttons have equal priority and will cancel each other out when selected. For example, if **Evac** is active in a zone, pressing **Alert** for the zone will cancel **Evac** and select **Alert**.

The zone **Speech** buttons and the **All Speech** button work in both AUTO and MANUAL. Speech has a higher priority than alert and evac. If **Speech** is selected for a zone and the Microphone PTT switch is pressed, then live speech will override any alert and evacuate signal currently playing. The alert or evacuate signal will be restored when the PTT button is released or **Speech** is deselected for the zone.

6.2 ZONE MANNED / CLEARED & WIP CONTROLS

The **Zone Manned** / **Cleared** buttons and the WIP buttons are enabled in both AUTO and MANUAL.

The **Zone Manned** / **Cleared** functions apply to the corresponding evacuation zone, whereas the WIP buttons are not a zone function, but apply to the individual WIP phones in the zone.

6.3 ALL-ALERT, -EVAC, -SPEECH KEYS

The Master User Interface Module includes the **All Alert**, **All Evac** and **All Speech** keys in the CONTROLS area.

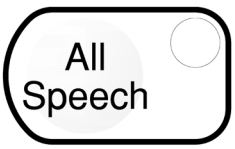
When **All Alert** or **All Evac** is pressed the QE20 remembers the alert and evacuate state of each zone. The All zone function is then activated – with every zone (unless the zone is deselected from the All functions during configuration) showing the new state. Individual zones can still be controlled – e.g. to turn the function off in a particular zone if not required. Note that selecting All-Alert when All-Evac is selected, will cancel the Evac function and select Alert on all zones, or vice versa. When the All zone function is no longer required, press the active button to turn it off. This will restore each zone to its Alert/Evacuate state prior to activation of the All zone functions (unless the zone Alert/Evac status was individually controlled while in the All-Alert or All-Evac mode – in which case it is restored to the state individually selected).

The **All Speech** button works similarly. When it is pressed the Speech state of each zone is remembered. Speech is then selected for every (configured) zone. The Speech state for a zone can be changed by pressing **Speech** for that zone. When **All Speech** is deselected the Speech state of each zone is restored to that prior to activating All-Speech, or to that individually selected during the All-Speech function.

Note: Which zones are controlled when an ALL-Zone function is selected is programmable. This means that not all zones will be controlled by the All-Zone functions on some systems.

When **All Alert** is pressed all configured zones are placed in the alert state and the **All Alert** LED is turned on. Each zone **Alert** LED will turn on to indicate it is in alert.
When **All Alert** is pressed with the **All Alert** LED already on, then alert is turned off in each zone and the starting Alert/Evacuate state of each zone is restored, unless individually changed during the All-Zone function.

When **All Evac** is pressed all zones are placed in the evacuate state and the **All Evac** LED is turned on. Each zone **Evacuate** LED will also turn on to indicate it is in evacuate.
If this key is pressed when the **All Evac** LED is already on, then Evacuate will be turned off in all zones and the starting Alert/Evacuate state of each zone is restored, unless individually changed during the All-Zone function.



When **All Speech** is pressed all zones will be selected for speech and the **All Speech** LED will be turned on. When the microphone PTT button is pressed and the **Talk** LED has turned on live speech will be broadcast to all the (selected) zones and any alert or evacuate signals will be overridden.
If this key is pressed when the **All Speech** LED is on, then speech will be turned off for all zones, unless the Speech state for a zone was changed while the All-Speech was active.

6.4 ALL-MANNED, -CLEARED & -CALL KEYS

The Master User Interface Module includes the **All Manned, All Cleared** and **All Call** keys.

These keys can be used in both AUTO and MANUAL.

When **All Manned** is pressed the **All Manned** LED and the **Manned** LED for all configured zones will be turned on. If the **All Manned** LED is already on pressing **All Manned** will turn this LED and all configured zone **Manned** LEDs off. This is basically a log indicator and has no effect on system operation. It provides helpful information to the operator. Note the **Manned** LED for a zone can also be turned on by the floor warden pressing a pushbutton associated with the warden phone in their area. This could be used to indicate the floor warden has taken their position and is ready to conduct the evacuation of the zone.

When **All Cleared** is pressed the **All Cleared** LED and the **Zone Cleared** LED for all configured zones will be turned on. If the **All Cleared** LED is already on pressing **All Cleared** will turn this LED and all configured zone **Cleared** LEDs off. This is basically a log indicator and has no effect on system operation. It provides helpful information to the operator. It could be used to indicate each floor has been evacuated.

When the **All Call** key is pressed, all configured WIP phones will ring and their WIP LED will start flashing. As each WIP is answered the corresponding red WIP LED will change to steady, indicating the WIP is in the voice connection. The operator can use the WIP handset on the QE20 to talk to all answered WIP phones, but will hear nothing back. It is a one-way voice announcement to all answered field WIPs. Pressing an individual WIP button while All Call is in progress will cancel the ringing if the WIP is not answered, or place that WIP on-hold if the WIP is off-hook. Hanging up the field WIP will remove that WIP from the All Call. Pressing the **All Call** button again will cancel **All Call**. If any WIP phones are off-hook their red WIP LED will start flashing as they are calling the QE20, but will turn off as the WIP is placed on-hook.

Note the All Manned and All Cleared key presses are transmitted to the other QE20 panels on the network as individual key presses for each enabled zone.

6.5 INDIVIDUAL ZONE KEYS

The 8 Zone Keyboard contains the controls and indications for 8 emergency zones. The layout is shown in Fig 6.1.

The **Disabled** and **Speech** buttons can be used in both AUTO and MANUAL, whereas the **Alert** and **Evac** pushbuttons are active in only MANUAL. Additionally, the **Alert** button has a special function in AUTO TEST.

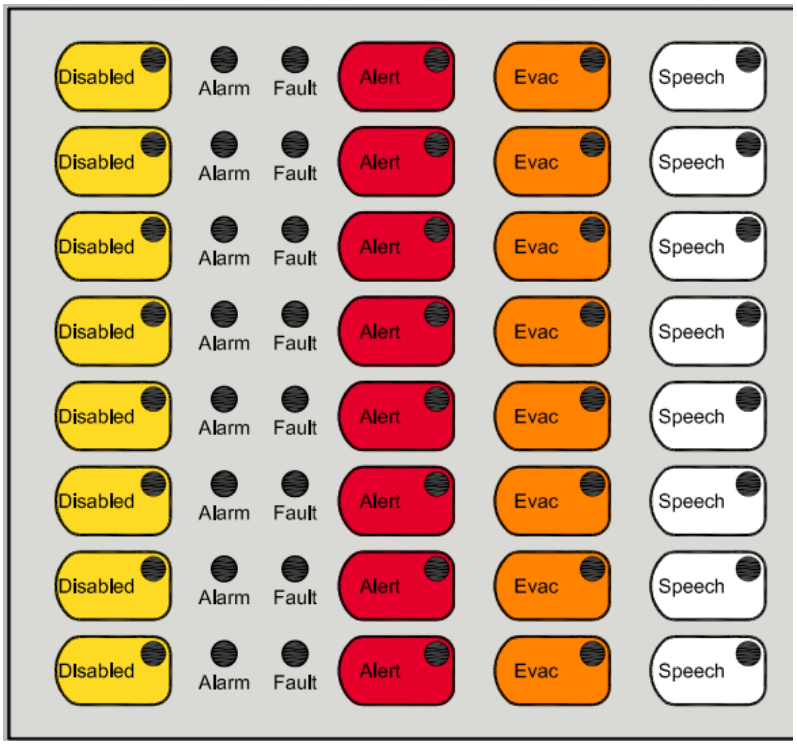
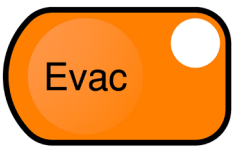


FIG 6.1
8 ZONE KEYBOARD DISPLAY

In MANUAL when **Alert** is pressed the alert signal will be generated in the particular zone. Pressing the key again will turn off the alert signal. Note that if **Evac** was active for the zone pressing **Alert** will clear the Evac signal.

In AUTO TEST pressing the zone **Alert** button will simulate an alarm condition in the zone so that the programmed operation can be observed without activating signals to the zones.



In MANUAL when **Evac** is pressed the evacuate signal will be generated in the particular zone. Pressing the **Evac** key again will turn off the evacuate signal. Note that if Alert was active for the zone pressing **Evac** will clear the Alert state.

When **Speech** is pressed live speech will be selected for the particular zone (**Speech** LED will turn on) so that when the press-to-talk (PTT) button is held down on the front panel microphone the speech announcement will be made to the zone. Pressing the **Speech** key again will turn off **Speech**.

When **Disabled** is pressed the zone will be disabled. Pressing the button when the zone is disabled will enable the zone. When a zone is disabled the **Alert**, **Evac** and **Speech** functions are cancelled and cannot be selected. The loudspeaker and VAD outputs in the zone are turned off and will not turn on. Alarms can still be detected and the evacuation will be triggered in AUTO, but no signals will be generated to the zone's loudspeakers or warning lights. Also no faults will be shown on a disabled zone.

The 8 WIP Keyboard layout is shown in Fig 6.2.

FIG 6.2
8 WIP KEYBOARD DISPLAY

The red WIP buttons are used to ring a warden phone, or answer a call from a warden phone, in the associated zone. On networked systems a button may be associated with the master WIP at another QE20.

To Ring A WIP: Press the **WIP** button for the relevant warden position. The associated red LED will flash with a flash-flash-pause cadence and the remote WIP phone will ring until the WIP is answered - taken off-hook. The **WIP** red LED will then go steady and voice communication is automatically established. Pick up the master WIP handset and converse with the warden. If the **WIP** button is pressed while the voice connection is active (LED on), then that call will be placed on-hold and the LED will flash continuously. To take the WIP off hold and talk with the warden again press the **WIP** button (LED goes steady on). If the warden hangs up their WIP handset (places it on-hook), the connection is broken and the LED indicator will turn off (automatic cancellation). Pressing the **WIP** button while the WIP is ringing will cancel the call.

To Answer a Call: When the remote WIP is lifted off-hook a call tone is heard in its earpiece. The QE20 is signalled and it indicates the WIP is calling by flashing the appropriate **WIP** red LED and ringing the Master phone (if it is not already in use). When the **WIP** button is pressed a voice connection with the remote WIP is established and the **WIP** red LED changes to steady. If the button is pressed again then the remote WIP will be placed on-hold and the LED will flash. The warden will hear the on-hold tone. To take the WIP off hold press the **WIP** button again (LED turns on steady). If the warden hangs up their WIP handset then the call is disconnected and the LED will turn off (automatic cancellation).

Notes

1. It is possible to call and talk to a number of WIPs at the same time. Simply press the corresponding WIP buttons to bring them into the conversation or place them on hold. A steady **WIP** red LED shows that WIP is in the voice conversation, a flashing LED means that WIP is on-hold.

2. Calls between master WIPs at QE20s do not have an on-hold function. Pressing either WIP button when a QE20-QE20 call is in progress will cancel that call.

3. On networked systems each QE20 can have calls with its locally wired WIPs separate from other QE20s. If the call involves a network connection to a WIP at another QE20, then picking up the master WIP at that QE20 will join into the voice call.

4. On fibre networked systems it is not possible to have conversations with WIPs on multiple QE20 panels or with both the master WIP and any field WIPs at that QE20.

5. It is not possible to call or answer a WIP while the **WIP Fault** LED is flashing or on. The fault must be rectified and cleared before a call can be made or answered.

6. WIP flash indications and cadences:
   Ring / call: Flash (beep), Flash (beep), pause.
   On-hold: Flash (beep) continuously.
   Talk: Steady on

WARNING Do not depress the hook switch of any WIP handset while holding the earpiece close to your ear. Always replace the handset onto the cradle to operate the hook switch. Some makes/models/ configurations of WIP phones use the earpiece to generate the ring sound and this may be painfully loud if it is close to your ear.

When **Zone Cleared** is pressed it will cycle through turning on just the **Manned** LED, turning on both the **Manned** and **Zone Cleared** LEDs, turning on just the **Zone Cleared** LED, and then turning off both LEDs. This is a log indicator and has no effect on system operation. The operator can use it to record the state of the evacuation in each zone (going through Manned – zone warden at their position, Manned and Cleared – zone has been evacuated except the warden, Cleared – warden and all other people have evacuated, and Off states).

The **Manned** LED can also be turned on from a pushbutton at a corresponding WIP, so that the floor warden can indicate their readiness for the evacuation.

There is a delay of 5s after pressing any Zone Manned or Zone Cleared button before updates are sent to other QE20 panels on the network (button presses are grouped together to avoid sending each button press individually).

CHAPTER 7
USING THE LCD & TOUCHSCREEN

7.1 GENERAL

The QE20 provides an LCD and touchscreen for display of additional and detailed information and the setting of some site-specific properties, such as time and date, and amplifier volume.

On startup, or if the LCD has not been used for approximately 10 minutes it displays the home screen, overlaid with the System Status and the current time and date. Refer to Section 7.2. The QE20 also displays important status information on this screen during power up.

Figure 7.1 Home Screen

Touching the screen will display the Main menu. Refer to Section 7.3.

The LCD screen layouts consist of two general types:

- A whole screen with menu options shown as buttons. See Figure 7.2A.
- A table view with rows and columns of data and a button bar down the right hand side. See Figure 7.2B. Pressing the >> button at the top of the button bar will cycle the buttons through the available choices.

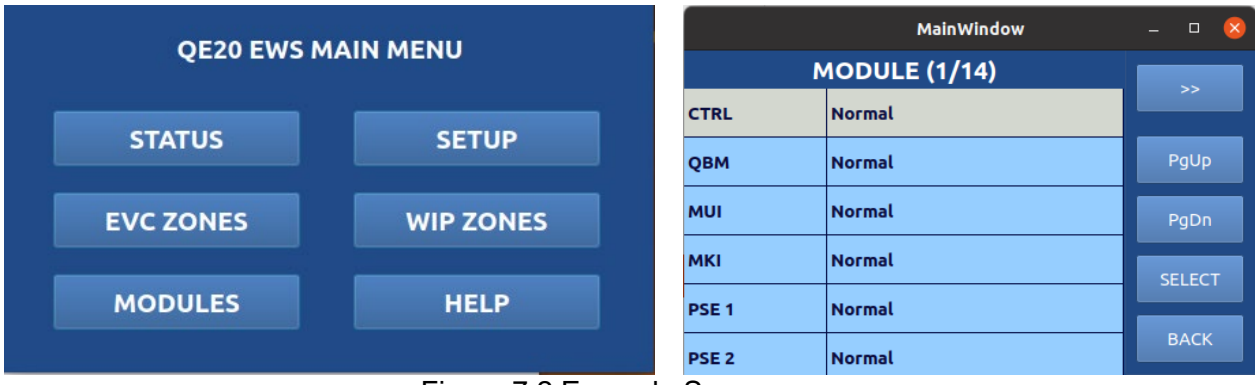


Figure 7.2 Example Screens

Hint: When touching a button or row use the tip of your finger (keep the touch area small and inside the button/row and don't move your finger off the button/row on release).

In data entry screens (such as SET TIME, SET DATE, LOG IN) the light-blue fields capture and display the numeric keys pressed. To delete an incorrect entry touch the appropriate field and it will be cleared. Enter the correct number.

Most commands are available without a log on code. However, some commands (such as recalling detailed module information, Set amplifier volume) require switching to Access Level 3 by entering a site specific access code. Refer to Log In command in Section 7.8.2.

7.2 HOME SCREEN

The QE20 displays the home screen (Figure 7.1) on startup and after 10 minutes of inactivity on the touchscreen.

The System Status is shown as:

Text Displayed	Interpretation
System Status: Normal	The QE20 is operating correctly and no faults or alarms are present.
System Status: Fault	The QE20 is operating correctly, but there are one or more faults present.
System Status: Alarm	The QE20 is operating correctly, and one or more alarms are present.
System Status: Load Configuration	The QE20 is loading its configuration. Shown on startup or after a new configuration is downloaded.
Communication Fail: Controller	The QE20 is not operating. The User Interface cannot communicate with the Controller.
Communication Fail: MKI Board	The QE20 is not operating. The User Interface cannot communicate with the MKI Board.
Menu Data Base Error	The QE20 is not operating. Internal Fault with the User Interface.
Load Configuration Fail	The QE20 is not operating. The configuration could not be loaded or is faulty.
Decode Configuration Fail	The QE20 is not operating. The configuration could not be loaded or is faulty.

During start up the QE20 will display information on the LCD screen to indicate progress. This is shown as a black pop up screen with a text message. These messages are:

Text Message	Interpretation
Cold Start	The QE20 has been powered up.
Restart (System Fault)	The Master User Interface has restarted due to a system fault.
QBM Initializing	The QE20 is initializing all the internal modules. This may be shown multiple times, as firmware updates, signal definition file updates, audio file updates, etc are done.
Wait remote panel up	The QE20 is waiting for the network to become operational.
Initialisation finished (abnormal)	This is displayed at the completion of start up, if it was not successful. Reasons could be - amplifier not updated as missing or not communicating, firmware update failed. Check the other fault conditions shown for indications of why this may have failed.
Initialisation finished	This is displayed at the completion of start up, if it was successful.

During startup, the following fault will be present :

QBM Initializing.

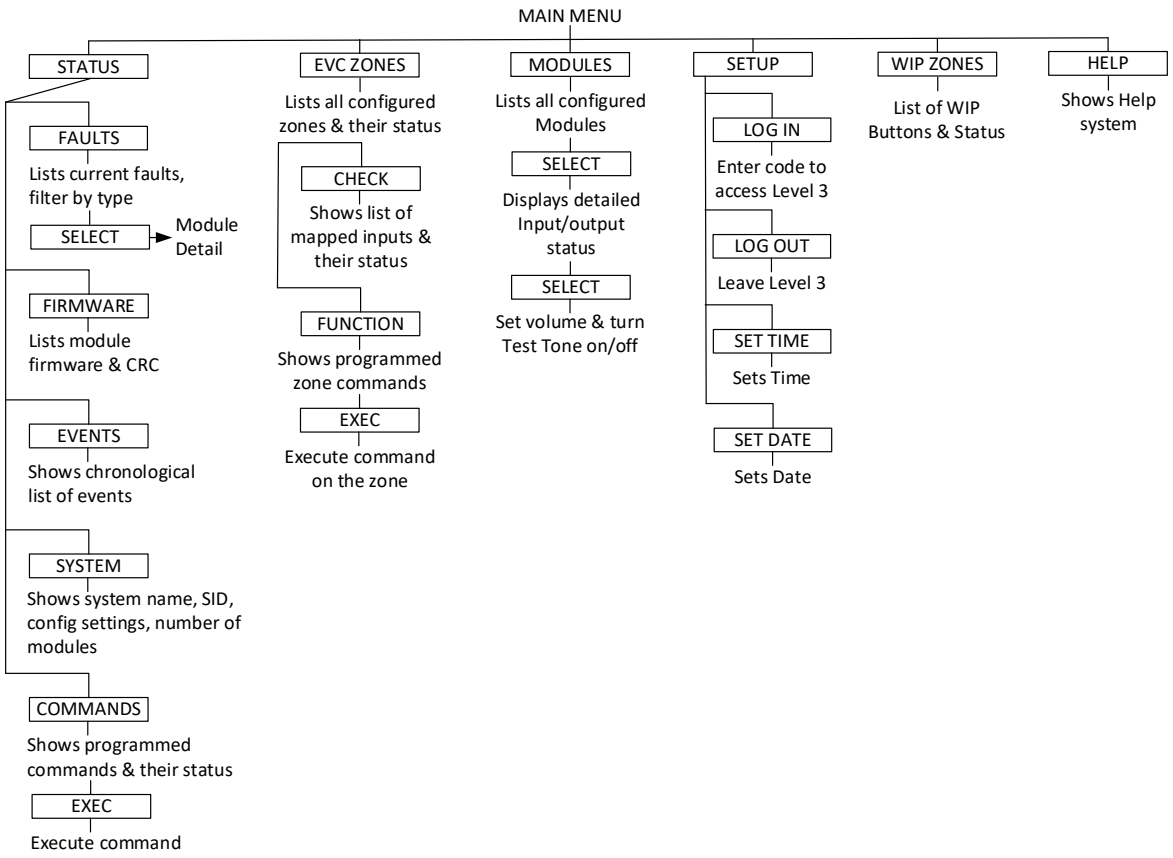
Until this fault clears the QE20 is not operational.

7.3 MENU STRUCTURE

Touching the touchscreen at the home screen displays the main menu.

Each button can be pressed to show a further menu or display / control specific information.

The menu structure is.



7.4 STATUS MENU COMMANDS

Touching the **STATUS** button in the Main menu will show the System Status commands.

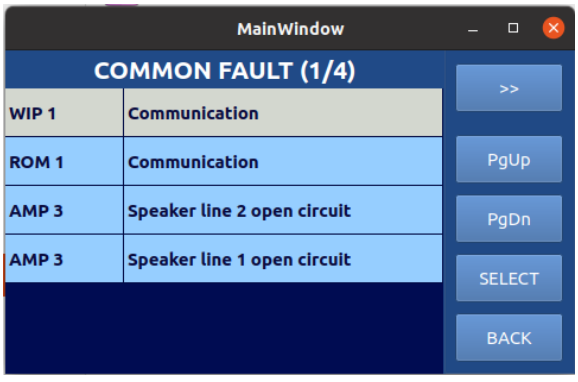
The **SYSTEM STATUS** menu and commands allow recall of the following information or activating pre-programmed command scripts:

- Faults – lists all the current faults.
- Events (History) – displays the most recent events that have occurred.
- Firmware – displays the firmware information for each configured module.
- System - displays information about the QE20 site configuration.
- Commands – allows activation of pre-programmed command scripts for playing messages, controlling outputs, etc.
- Home – returns to the main menu.

These are described in the following sections.

7.4.1 FAULTS RECALL

The **FAULTS** recall displays the current faults that are present in the QE20, if any. These are listed in chronological order, with the first occurring at the top. The button bar provides buttons for paging up and down, stepping up and down, filtering the list by module type if there are many faults present, and selecting a fault.



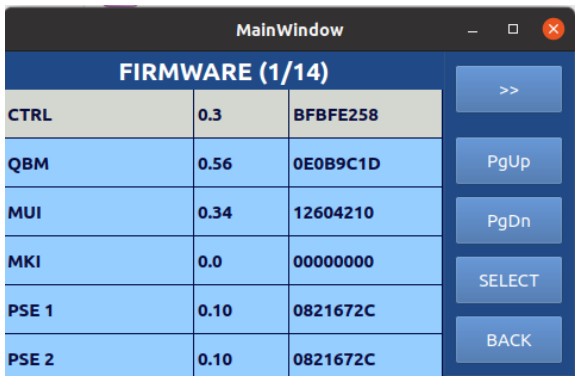
The display is updated as faults clear and new faults are detected, so it is a live list of the faults currently present. The **EVENTS** recall (see Section 7.4.3) can be used to see the historical list of all events – filter by Faults to see just the fault and fault clear events.

Touching a module fault (so it is highlighted) and pressing **SELECT** on the button bar shows the Module Detail screen with the particular Input/output in fault already selected (refer to Section 7.7.1).

Faults from other QE20 panels on the network are usually shown as General Fault, Network Fault, or PSE Fault for the SID number of the QE20. It will be necessary to recall the detailed fault information at that QE20 to determine exactly what is causing the fault.

7.4.2 FIRMWARE

The **FIRMWARE** screen displays all the configured modules, together with their current firmware version and CRC. The button bar provides buttons for paging up and down, stepping up and down, and filtering the list by module type.



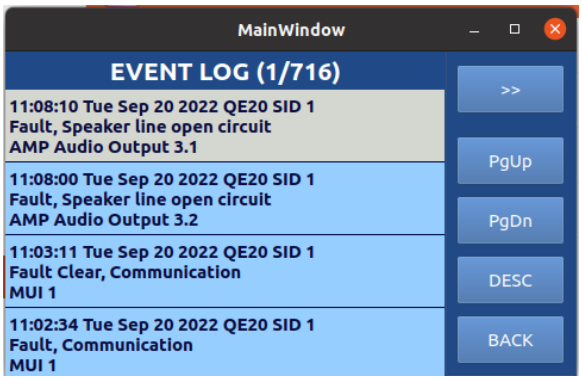
If a particular module is highlighted and the **SELECT** button is pressed, then the Module Detail screen is shown for that module – refer Section 7.7.1

A version and CRC of 0 indicates that the module is not working or has not reported its firmware version.

7.4.3 EVENTS

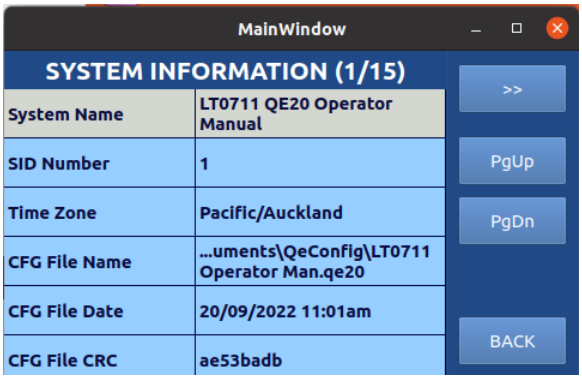
The **EVENTS** screen displays the history of events that have occurred in the QE20. The most recent 10000 events are kept. These are listed in chronological order, with the most recent event at the top of the list. The button bar provides buttons for paging up and down, stepping up and down, filtering the list by event type – Alert activations, Evac activations, Faults, FIP Alarms, Zone Alarms, and Others (system & operator events). The order can also be reversed by pressing the **DESC** button for descending (oldest event at the top, progressing downwards to the newest event) and **ASC** for ascending (newest event at the top).

New events are automatically added to the display as they occur.



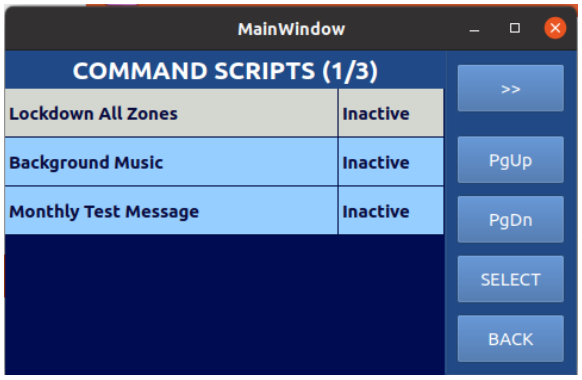
7.4.4 SYSTEM

The **SYSTEM INFORMATION** screen details the site configuration – including the System Name, SID, time zone, file details, time and date of creation, CRC, and the quantity of each type of module present. Additionally a field called **CFG Site Changes** indicates if site volume changes have been made, but these have not been captured by an extraction of the site configuration.



7.4.5 COMMANDS

The **COMMANDS** screen displays the list of pre-programmed command scripts and their status, and allows each script to be selected for execution. The button bar provides buttons for paging up and down, stepping up and down, and executing a script.



When the site configuration is prepared these command scripts will be created and the functionality for each command determined. Commands could be created for:

- Turning background music on / off
- Enabling Lockdown or similar emergency messages
- Activating outputs
- Playing one or more messages to a zone or group of zones
- Sending a signal to a connected colour graphics or building management system.

The current status of each command is shown as "Active" or "Inactive". The "Active" status could indicate the function has been turned on (e.g., for background music or an output, or that the command is currently executing (e.g., for a command that plays a message or sequence of messages to some zones).

To execute a command, highlight it (touch the row or use the cursor buttons to step the highlight bar up or down to the required command), then press the **SELECT** button. A confirmation screen will be shown. Press the **EXEC** button to execute the command, or the **CANCEL** button to cancel.

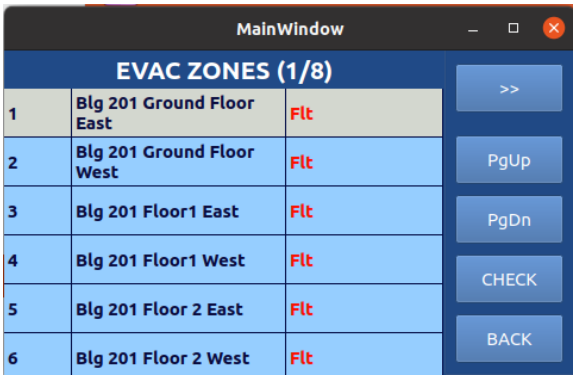
The LCD will return to the list of available commands, and the status will update to show the command is Active (though it may return to Inactive once the command completes or even immediately if the command executes very quickly).

Executing a command that is Active (e.g., playing a sequence of messages) will generally cancel the command (depends on the programming of the command script).

7.5 EVAC ZONES

7.5.1 EVAC ZONES

The **EVAC ZONES** screen displays the list of configured emergency zones in the QE20, along with their names and current status.



The button bar provides buttons for paging up and down, stepping up and down, a button to **CHECK** a zone, and a **FUNCTION** button to apply programmed functions to the zone. Options are also presented to filter the zone list by status – Alert, Evac, PA (Speech), Disabled, Alarm, and Fault, so that only those zones in the particular condition are displayed.

The **CHECK** function will display the list of input and outputs that are mapped to the selected zone, so that the alarm and fault status of each of the contributing inputs and outputs can be seen. Touch or highlight the required zone with the cursor keys, and press the **CHECK** button. Refer to Section 7.5.2.

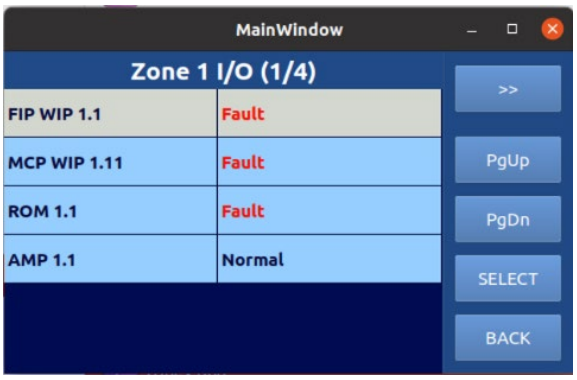
The **FUNCTION** button will display the list of programmed functions (scripts) that have been created for zones in the QE20. Refer to Section 7.5.3.

The zone status is shown as a combination of:

Idle	Nothing is active or present
Flt	A Fault is present
Alarm	An alarm is present
M	Background music is active
Pg	Paging is active
Alert	Alert is active
Evac	Evacuate is active
PA	Speech is active
Man	Zone is Manned
Clr	Zone is Cleared
Dis	Zone is disabled.

7.5.2 ZONE I/O

The **Zone I/O** screen will list the local inputs and outputs that are mapped to a specific zone and the alarm and fault status of those inputs/outputs.



If the zone is in alarm or fault, but no local inputs or outputs are listed, or there are none in the condition that the zone is in, then the condition is caused by faults or alarms on inputs or outputs at other QE20 panels on the network, or from high-level connections to the fire panels. It will be necessary to view the Zone I/O details at the other QE20 panels that share the zone (or the fire alarm panels) to determine the exact input or output that is causing an alarm or fault condition.

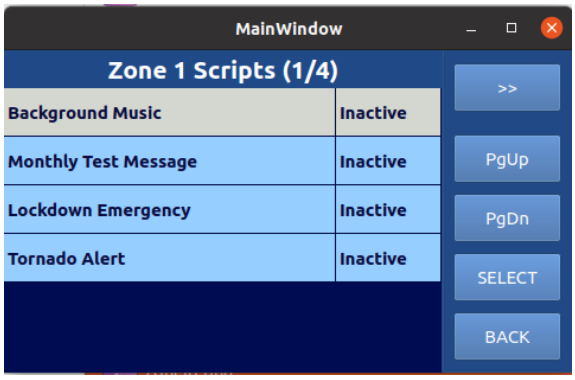
In the Zone I/O screen if a particular input or output is highlighted and the **SELECT** button is pressed, then the Module Detail screen will be displayed for the particular module that contains that input or output. The input or output will be highlighted in the Module Detail screen. Refer to Section 7.7.1 for details on the Module Detail screen.

7.5.3 FUNCTIONS (ZONE COMMAND SCRIPTS)

During configuration of the QE20 zone commands (scripts) may have been created so that common tasks can be applied to a specific zone. Commands could have been created for:

- Turning background music on / off
- Selecting the background music source
- Enabling paging
- Playing one or more messages
- Playing pre-recorded music.

The zone commands will be listed by name along with their current status - shown as "Active" or "Inactive". The Active status could indicate the function has been turned on (e.g., for background music or an output, or that the script is currently executing (e.g., for a script that plays a message or sequence of messages to the zone).



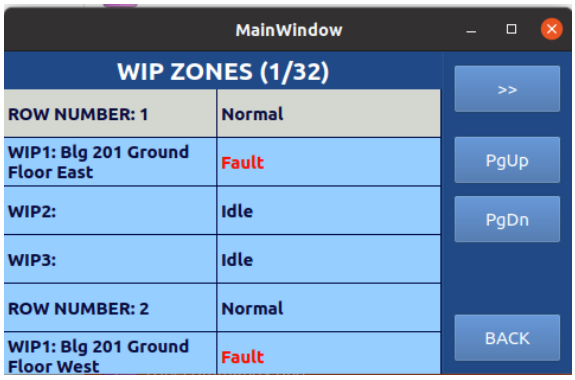
To execute a zone command, highlight the required command (touch the row or use the cursor buttons to step up or down to the required command), then press the **SELECT** button. A confirmation screen will be shown with **EXEC** and **CANCEL** options. Press the **EXEC** button to execute the script, or **CANCEL** to cancel.

The display will return to the list of available zone commands, and the status will update to show the command is Active (though it may return to Inactive once the command completes or even immediately if the command executes very quickly).

Executing a command that is already Active (e.g., playing a sequence of messages) will generally cancel the command execution or turn off the function (depends on programming).

7.6 WIP ZONES

The **WIP ZONES** screen displays the list of configured WIP buttons in the QE20, along with their names and current status.



The button bar provides buttons for paging up and down, stepping up and down, and a button to **SELECT** a WIP button.

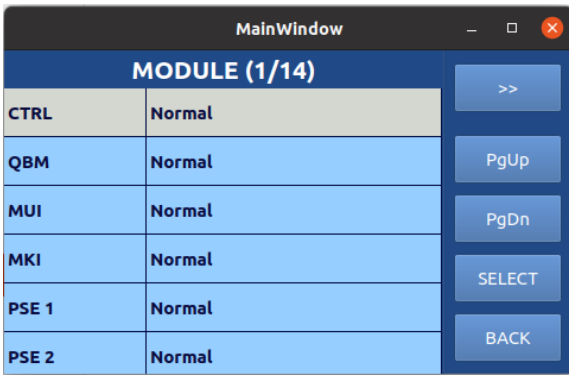
When a WIP button row (WIP 1, WIP 2, or WIP 3) is highlighted the **SELECT** button will be shown in the button bar if that WIP button maps to local hardware. Pressing **SELECT** will display the Module Detail screen for the particular WIP module that has that WIP circuit and the input will be highlighted. The **SELECT** button will not be shown for WIP buttons that have no local WIP circuit (e.g., map to only circuits at other QE20 panels). Refer to Section 7.7.1 for details on the Module Detail screen.

The status for each WIP button is shown as a combination of the following:

Idle	Nothing is active or present
Fault	A Fault is present on the WIP circuit
Calling	WIP is off-hook and calling ECP
Ringing	ECP is ringing the WIP
Talk	In conversation with the WIP
On hold	WIP is on-hold (off-hook and taken out of talk).

7.7 MODULES

The **MODULES** button displays a list of the configured modules in the QE20 along with the module status.

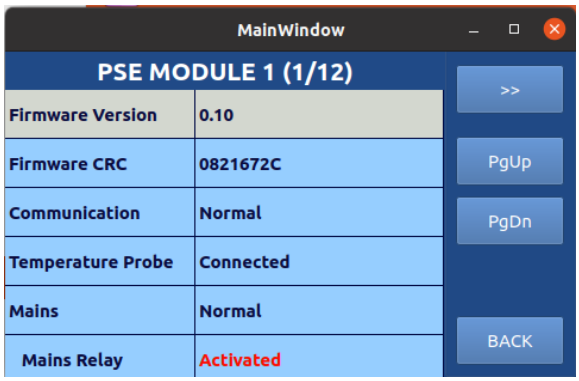


The button bar provides buttons for paging up and down, stepping up and down, a button to **SELECT** a module, and options to filter the list by module type.

If a particular module is highlighted and the **SELECT** button is pressed, then the Module Detail screen will be displayed for that module. Refer to Section 7.7.1 for details on the Module Detail screen.

7.7.1 MODULE DETAIL SCREEN

The Module Detail screen displays the firmware information and communication status of the module and the current status of each of the inputs and outputs for that module. This allows the status of all the inputs and outputs and other conditions that can be generated by the module to be seen.



The Module Detail screen requires Level 3 access, so will prompt for an access code if Level 3 is not already enabled (refer Section 7.8.2). Enter the correct code, and once Level 3 access is confirmed press the **SELECT** button again to show the details.

The button bar provides buttons for paging up and down, stepping up and down, and for particular outputs a button to **SELECT** the output.

If the Module Detail screen is entered by **SELECT**ing an input or output in the previous screen, then that input or output will be displayed and highlighted (rather than the first row of the table).

For an amplifier module, if one of the AMP 100V Outputs is highlighted, then the **SELECT** button will be shown in the button bar. Pressing the **SELECT** button will display the Set Volume / Test Tone screen for that amplifier 100V output. Refer to Section 7.7.2.

7.7.2 AMPLIFIER SET VOLUME / TEST TONE

The Amplifier Set Volume / Test Tone screen requires Level 3 Access, so if this is not already active a prompt will be given to enter the Level 3 Code. If this is successfully entered the Set Volume / Test Tone screen is displayed.

On this screen the volume for the amplifier can be adjusted from 0 to 100% by rotating the rotary control to the required setting and pressing the **SET VOL** button. This will change the volume for that amplifier for all audio functions and the setting will be saved in non-volatile memory so it is not lost.

It is recommended that these site adjustments to amplifier volumes be a temporary action, as these will not be included in the site configuration, until it is read from the QE20. If permanent changes are required, these should be incorporated into the site configuration and reloaded into the QE20, that way the backup copy of the site configuration matches what's in the QE20.

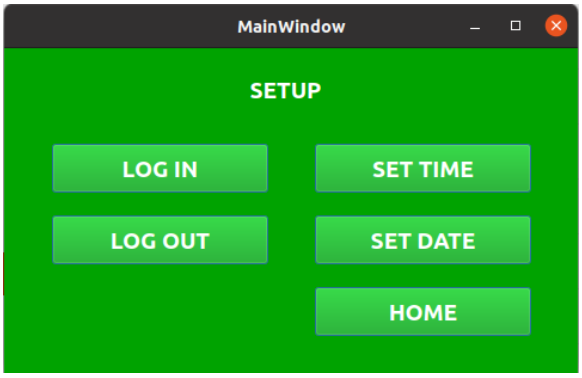
If the **TONE ON** button is pressed then a 1kHz sine wave test tone is activated on the amplifier output so that speaker tests or Sound Pressure Level (SPL) measurements can be taken in the area covered by the amplifier output. This test tone is at the same volume as Alert and Evacuate signals, so will be quite loud. Note the volume setting can be changed after activating the test tone so that the SPL can be adjusted. The test tone has an audio priority below emergency signals, paging and background music, so these will all need to be turned off to allow the test tone to be heard.

The Test Tone needs to be turned off before exiting the Amplifier Set Volume / Test Tone screen, otherwise it will remain on.

7.8 SETUP MENU

7.8.1 SETUP MENU

The **SETUP** screen provides buttons to **LOG IN** and **LOG OUT** of Level 3, and buttons to set the time and date.



7.8.2 LOG IN

The **LOG IN** Command allows access to level 3 commands – such as Set Amplifier Volume. The screen prompts for the code to be entered using the numeric keypad. Enter the code then press the **SET** button. This will confirm that Access Level 3 has been activated if the code is correct, otherwise it will indicate the code was invalid.

In Access Level 3 those commands requiring Level 3 will operate without prompting for the code. If Level 3 is not active, attempting to access these commands will display the screen allowing entry of the code. Once entered the command key needs to be pressed again.

Level 3 access remains until the **LOG OUT** command is used or the screen times out and automatically returns to the Home screen.

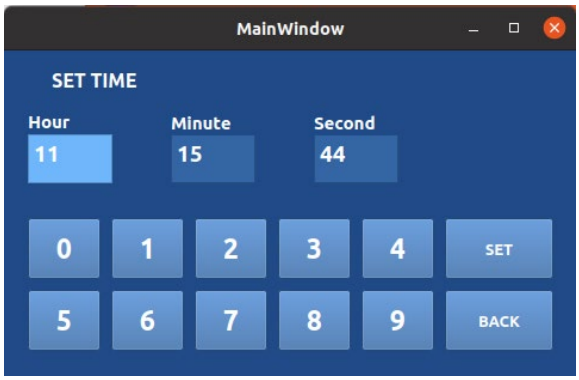
If an incorrect key is pressed touch the light-blue entry field. This will clear what has been entered, allowing incorrect entries to be deleted and a new value to be entered.

7.8.3 LOG OUT

The **LOG OUT** command can be used to cancel Level 3 access and return to Level 1.

7.8.4 SET TIME

The **SET TIME** command allows the time to be entered into the QE20. Enter the Hours, Minutes and Seconds values and touch the **SET** button. Each time a field is touched it will be cleared, allowing incorrect entries to be deleted and a new value to be entered.
If the time is valid, it will be stored and the current date and time transmitted to all other panels on the network.



Hint – enter the time slightly ahead of the real time and at the real time press **SET** to set the time accurately.

7.8.5 SET DATE

The **SET DATE** command allows the date to be entered in to the QE20. Enter the Day, Month and Year values and touch the **SET** button. Each time a field is touched it will be cleared, allowing incorrect entries to be deleted and a new value to be entered.
If the date is valid, it will be stored and the current date and time transmitted to the other panels on the network.

7.9 HELP

The help system displays useful information about how to use the QE20 and the LCD display. Most of the information is contained in this manual, just in a different format.