

Full IP Cell Call With Intercom Specification

Introduction

Cell Call systems are vitally important to the safe management of police custody units as requirements for fast efficient response to cell calls is becoming more of an issue. With society as a whole becoming more litigious the number of false accusations to respond has become a very real cost to any custodial centre.

The Cell Call System shall be fully monitored with embedded datalog and optional voice recording function which shall be integrated into the hardware components of the system. Access to the datalog and voice recording systems shall be by means of web browser.

Systems reliant on a PC Server/GUI or PC Server/Client arrangement shall not be acceptable.

Clear speech communications are required so the officer can assess requirements prior to attendance, saving making two visits to the cell. The quality of the audio is very important and each voice component on the system shall contain a wideband voice processor capable of sampling rates of up to 16KHz and operating acoustic echo cancellation with 128mS echo tail with a signal to echo ratio of up to 15db.

The Cell Call shall have a number of functionalities depending on the user requirements. These facilities include standard cell call which enables the cell occupant to press a button for assistance, the ability to call the cell and hold a duplex Audio conversation and to patch through external telephone calls from the public network.

There shall be a vandal resistant, ligature free audio cell call system to be installed within each cell. The construction of these is very important and no deviation shall be accepted, the contractor must be able to demonstrate a fully operational cell call system complying with this specification within a custody environment.

The Cell Call System shall consist of the following;

Cell Call Units

Each cell shall be equipped with a cell call audio unit, the cell unit shall have a single button – call. The panel faceplate shall be laser cut and manufactured from 2.0mm BS304 grade stainless steel with 2mm holes for the speaker grill and a separate 2mm hole for the microphone in line with Police Buildings Design Guide For Custody 2009. The microphone and speaker shall be further protected behind a stainless steel 1.5 mm offset hole plate and provided with liquid ingress prevention. The front plate shall be secured to a bezel edged flush galvanized steel back box using four 5mm stainless steel countersunk screws to DIN 7991 / ISO10642, this back box shall have a solid 20mm stainless steel bezel of the same specification as the front plate.

The buttons shall be vandal resistant stainless steel minimum 15mm in diameter with integral LED illumination. The Cell Call Button shall have background illumination to enable location in lower light levels. The rear of the plate shall contain a tamper switch circuit to alert staff to the removal of the plate from the backing box.

There shall be a microphone and speaker within the cell call panel to allow communication to the custody desk and allow for telephone calls to be transferred to the cell.

Accessible Cells shall be fitted with additional slave cell call points to allow access to the cell call system from more than one location in the cell as determined by the client.

Corridor Reset Units

Outside each cell a flush reset unit shall be installed and shall be of the same construction as the cell call unit. This shall contain a 20mm high impact resistance and high luminance red LED. In addition there shall be a green LED to the same specification which will illuminate when the cell call has been isolated at that particular cell. A stainless steel reset button shall be provided.

The Corridor Reset plate shall be laser etched with the lettering “RESET”, “ISOLATE” and “PUSH AND HOLD TO ISOLATE”

Officer Station Telephone

A officer station shall be located on the Charge Desk and in the Custody Office. The audio must be full digital, incorporating wideband voice processing techniques. Analogue systems are not acceptable. It shall be possible to answer cell calls and transfer telephone calls to the cells from the Officer Stations. Officer Stations must look like a standard telephone with an LCD display for ease of operator use and be common for cell call and intercoms so only one handset is required. It must be possible for the operator to answer the call either as hands free or by picking up the handset and enabling a discreet conversation. Officer Station are to have the facility to release doors or open barriers via relays on the intercom units.

Two Officer Stations are to be provided, one for the answering of cell calls and the other is for the transferring of telephone calls to the cells.

LED Mimic Panel

A LED mimic panel shall be provided showing the status of every cell with the use of a single multicolour LED representing each cell. The panel shall be of stainless steel construction 1.5mm gauge and shall be engraved to the clients requirements. The unit shall be fully configurable at commissioning stage using an integral embedded website.

Cell Call Operation

A detainee can press the call button which shall be displayed and ring on the Officer Station and visually on the LED Mimic Panel. The operator can open a speech channel to the cell and hold a two way conversation either hands free or by picking up the telephone handset at a officer station. The operator can mute the call, but this shall not reset the cell call system, the operator has to attend the cell and operate the reset button on the Corridor Reset Plate. The client may alter this requirement such that replacing the handset resets the call.

If the corridor reset button is pressed and held, this will have the effect of isolating the cell call for that cell for use when a large number of nuisance calls are received from a particular Detainee. The green LED on the corridor reset plate will illuminate constantly. The LED Mimic panel shall also show that the cell has been isolated.

The Cell Call system shall be connected to the PABX to allow the operators to make telephone calls at the officer station and transfer these calls to the cells.

Indications of Corridor Reset and Mimic Panel.

OFF Normal idle state officer not present

RED ON (SLOW FLASHING) Cell call

RED ON (STEADY) Officer speaking to call or telephone connection in use.

GREEN ON (STEADY) Cell Isolated.

The cell call system shall optionally integrate with a GUI to provide a floor plan display as required by the client.

Audio communication with a cell is provided by an Audio exchange at each cell. In addition to audio connections this equipment also allows Telephone calls to be connected to cells. Noting that calls to cells and the transfer of calls will be done via the cell call Officer Telephone keyboard. The system shall show the status information and allow control of cell functions with indicators for various cell conditions.

System Cabling

The Cell Call Plates, Intercom Plates, LED Mimic Panel and Officer Station Telephone shall be “Power over Ethernet” complying to the IEEE802.3af standard and shall be connected via a standard data infrastructure incorporating PoE switches and patch panels. All devices shall have embedded website allowing system configuration using a standard web browser. All cabling to be in Cat 6/5e to match the internal data cabling. Mount PoE switches within the server racks in the central Server Room. Each individual PoE switch is to support a maximum of 24 PoE devices.

Where the maximum cable length of 90m is exceeded at the external barriers for the intercom, allow provision for a dedicated PoE switch at the building exit points to enable a further 90m. All cabling external to the building will be in external grade Cat 6/5e to enable them to be pulled through the duct system. All external cabling is to be installed with lightning/surge protection or run in fibre.

Corridor reset plates will be connected directly to the cell plates via 12 core alarm cable.

The system shall be fitted with a Watchdog such that devices are continuously monitored and an alarm raised in the event of a connection failure to one or more of the system components.