
**Connecting a Computer
to the *Multi*IFAX
using the
IFAXComms Protocol**

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TECHNICAL MANUAL

**Connecting a Computer
to the *Multi*IFAX
using the
IFAXComms Protocol**

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The information contained in this document is confidential. It is supplied for the sole purpose of linking an external computer to an **IFAX** system.

As further enhancements are made to the **IFAX** system, the specification contained in this document may change without notice. It is important to make sure only the latest issue is in use. Wherever possible, any changes will be backwards compatible with earlier specifications. Changes made to this document, since the previous issue, are marked with a line in the left margin.

Unless otherwise specified, this document refers to **IFAX** Main Board firmware from version 10.11 onwards.

Issue	Date	Initials	Changes
1	August 2003	JMH	Draft issue.
2	November 2003	JMH	Extensive changes.
3	July 2004	JMH	Correct definitions of Inhibit Timed Procedure , Disable Timed Procedure , Enable Timed Procedure , Trigger Timed Procedure and Cancel Timed Procedure commands. Correct definition of Flag & Counter Status Response . Add Request Events in Range , Clear System Fault LED and Request Alarm Statistics commands. Add Alarm Statistics Response . Change terminology from “Alarm Circuits” to “Outputs”. <i>Alarm Silence</i> command renamed as Sounder Silence . Remove details of individual events in the chapter on <i>Meaning of Event Numbers</i> . These are now covered in the <i>OnSite</i> help file.
4	February 2006	JMH	Re-define bits 1 and 3 of byte 7 of Station Status Response . Extend definition of the Loop Status Response packet.
5	March 2006	JMH	Document layout changes only.

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Introduction

The **IFAX** system is a family of Fire Alarm Control Panels. The panels can provide a link to an external computer. This can be a Building Management System (B.M.S.), an Environmental Management System (E.M.S.) or simply a computer. This document will refer to all such systems as computers.

The **IFAXComms** protocol defined here allows for full two-way reporting from and control of an **IFAX**. Another simpler and less robust protocol (defined in a separate document) is also available for one-way reporting to a B.M.S. system.

A single link can be used for a network of **IFAX**'s, with all **IFAX**'s reporting to and being controlled by the one computer.

This document is designed to be read in conjunction with the online Help System supplied with the [OnSite](#) computer program. It can be accessed by selecting Contents from the Help menu of the *OnSite* program or by pressing the F1 key at any time during the program.

Conventions used in this manual

All numbers in this document are in decimal unless specified otherwise.

Blue underlined text is a hyperlink in the electronic versions of this document. Clicking on the hyperlink jumps to another point in the document, for example [Conventions](#). All hyperlinks stay within this document, unless stated otherwise, for example <http://www.multialarm.co.uk/>

On a networked **IFAX** system, station number 0 indicates the local station that is connected to the computer. On a non-networked **IFAX**, the station number should always be 0.

INTRODUCTION

Mechanical and Electrical Characteristics

Mechanical Characteristics

The connector is a 9-way 'D-type' connector, as specified in ISO 2110: 1989 (E). The connector has male (pin) contacts. The connector has two standard-threaded locking posts.

The connector is situated at the lower edge of the Main Board on the door of the **IFAX** system and is marked J11. It is possible to order special Repeater control units with a connector installed.

Electrical characteristics

The connections meet the electrical specifications of EIA-232-D and CCITT V.28. All connections are ground-referenced to the **IFAX** system and its mains supply.

Contact Assignments

Pin	Circuit	Function	Direction
1		No connection	
2	104/BB	Received Data	IFAX ← Computer
3	103/BA	Transmitted Data	IFAX → Computer
4	108.2/CD	DTE Ready	IFAX → Computer
5	102/AB	Signal Ground	IFAX — Computer
6		No connection	
7	105/CA	Request to Send	IFAX → Computer
8	106/CB	Clear to Send	IFAX ← Computer
9		No connection	

The circuit numbers are those specified by CCITT recommendation V.24, followed by the circuit numbers used by EIA-232-D.

The metal case of the connector is connected to an External Ground within the **IFAX** system and should be used as a shield for the interconnecting cable.

Received Data is received by the **IFAX** system (DTE) from the computer (Data Circuit-terminating Equipment, DCE). Data should be sent in bit serial format according to ISO 1177: 1985. There is one start bit, followed by eight data bits (least significant bit first), followed by at least one stop bit. Transmission proceeds at 4800 bits per second (bps).

Transmitted Data is sent from the **IFAX** system (DTE) to the computer (DCE). Data is transmitted from Transmitted Data contact when there is data available and when the Clear to Send is 'ON'. It is sent in bit serial format according to ISO 1177: 1985. There is one start bit, followed by eight data bits (least significant bit first), followed by two stop bits. Transmission proceeds at 4800 bits per second (bps).

DTE Ready, formerly called Data Terminal Ready (DTR), is sent from the **IFAX** system to the computer. It is permanently 'ON'. Absence of this signal may be used by the computer to detect either a power-off condition in the **IFAX** system or the disconnection of the interconnecting cable (see EIA-232-D, paragraph 2.1.5).

Signal Ground is the reference for the signals.

Request to Send (RTS) provides hardware flow control for the Received Data connection. It is sent from the **IFAX** system to the computer while the **IFAX** is ready to receive data from the computer.

Clear to Send (CTS), also known as Ready for Sending, provides hardware flow control for the Transmitted Data connection. It is sent from the computer to the **IFAX** system while the computer is ready to receive data from the **IFAX** system. When Clear To Send is 'OFF' the data code element currently being transmitted will be completed and no more codes will be transmitted until this signal is 'ON'. If it remains 'OFF' for more than twelve seconds, the **IFAX** system will assume that the computer is powered off or the interconnecting cable is disconnected.

Protocol of Message Packets

The serial connector is used as a general-purpose output port until the **IFAX** recognises a [Session Start Request](#) being input. The **IFAX** then uses the serial connector for the protocol until either the end of the session or a time-out occurs (both of these conditions are defined later); the serial port then reverts to being a general-purpose output port.

While the serial port is used as a general purpose output port, all codes that are transmitted by the **IFAX** system are 'printable' codes in the range <SPACE> (code 32) to '~' (code 126). The only exceptions to this are ASCII <CR> characters (carriage returns, code 13) and ASCII <LF> characters (line feeds, code 10). The external computer will be able to distinguish between the two uses of the serial port by recognising the start of a message packet in the **IFAXComms**. Specifically, the ASCII <STX> character (code 2) is never output while the serial port is used a general purpose output port.

In addition, the **IFAX** may transmit bytes in order to identify the presence of a modem. These bytes will not include the ASCII <STX> character.

Packet Structure

The general structure of packets sent to and from the **IFAX** is:

[STX code][packet number][data][ETX code][CRC]

where

- [STX code] is the ASCII <STX> character (code 2).
- [packet number] is a byte that is incremented modulo 256 for each new packet transmitted. There is a separate sequence for the computer-to-**IFAX** packets and for the **IFAX**-to-computer packets. The computer can use the packet number to detect packet re-transmission and missing packets.
- [data] is one or more bytes of data. The definition of the data is defined later in this chapter. The first byte of the data always determines the type of message packet. The data will not consist of more than 255 bytes.
- [ETX code] is the ASCII <ETX> character (code 3).
- [CRC] is two bytes (high byte followed by low byte) representing a 16-bit number. This is the ones-complement of the CRC-CCITT checksum of the [packet number] and [data] sections.

The [packet number], [data] and [CRC] sections of the packet all use *Data Link Escaping*. If a byte in these sections should be the same code as <STX>, <ETX>, <DLE>, <ACK>, <NAK>, <ENQ>, <XON> or <XOFF> then it is replaced with the ASCII <DLE> character (code 16) followed by the byte exclusive-or'ed with 32.

Acknowledgement

If the packet is validly formed and its CRC is correct, the receiver should send an ASCII <ACK> character (code 6). Otherwise, the receiver should send an ASCII <NAK> character (code 21).

If the **IFAX** receives a <NAK>, it re-transmits the most recent packet. It will not do this more than five times for a packet. After that the **IFAX** gives up for that packet.

If the **IFAX** does not receive an <ACK> or <NAK> within ten seconds, it re-transmits the most recent packet. It will not do this more than five times for a packet. After that the **IFAX** gives up and terminates the session by sending a [Session Stopped](#) packet. See the chapter on [Authorisation](#) for details.

The computer may send <ACK> or <NAK> codes in the middle of a packet transmission. The computer must be able to receive <ACK> and <NAK> codes in the middle of a packet reception.

The computer should not send a further packet until it has received either an <ACK> or <NAK> code for the current packet.

Software Handshaking

The **IFAX** may send ASCII <XON> and <XOFF> characters (codes 17 and 19) at any time, including within a packet. These are software handshaking commands.

The computer may send ASCII <XON> and ASCII <XOFF> characters at any time (including within a packet). The current firmware implementation at the **IFAX** ignores these. A future enhancement may treat these as software handshaking commands.

Summary of Packets

Some message packets are sent automatically from the **IFAX** to the computer. Other packets are only sent from the **IFAX** on request from the computer. The computer sends packets to the **IFAX** either to control the **IFAX** or to request information from it. However no packets are sent from the **IFAX** to the computer until the authorisation process has been completed¹ (except for authorisation packets themselves!).

Packet Type number	Name	Sent
0	Session Start Request	From Computer to IFAX
1	Real-time Event	Automatically from IFAX to Computer
2	Authorisation Challenge	Automatically from IFAX to Computer
3	Command	From Computer to IFAX
4	Command Response	From IFAX to Computer
5	Name Response	From IFAX to Computer
6	Device Status Response	From IFAX to Computer
7	Device Details Response	From IFAX to Computer
8	Loop Status Response	From IFAX to Computer
9	Loop Details Response	From IFAX to Computer
10	Event Response	From IFAX to Computer
11	Flag & Counter Status Response	From IFAX to Computer
12	Station Status Response	From IFAX to Computer
13	Session Stop Request	From Computer to IFAX
14	LCD	Automatically from IFAX to Computer
15	Authorisation Response	From Computer to IFAX
16	Session Started	From IFAX to Computer
17	Keypress	From Computer to IFAX
19	Printer	Automatically from IFAX to Computer
21	Condition Response	From IFAX to Computer
22	Output Status Response	From IFAX to Computer
23	Session Stopped	From IFAX to Computer
25	LED Status	Automatically from IFAX to Computer
26	Enable Status LCD	From Computer to IFAX
27	Alarm Statistics Response	From IFAX to Computer

If the computer receives a packet that has an undefined Packet Type number, an <ACK> or <NAK> should still be sent in the normal manner; otherwise the **IFAX** will re-send the packet.

¹ The computer should not assume that this is so. Future enhancements may allow the **IFAX** to send some packet types without authorisation.

Word Format

Several packets have a pair of bytes to represent a word. The format of these is:

Byte Number	Contents
x	Low byte (value modulo 256)
x + 1	High byte (value / 256)

Date & Time Format

Several packets have a group of five bytes to represent a date and time. The format of these is:

Byte Number	Contents
x	Year - 1980 (0 to 255)
x + 1	Bits 0 to 4: Hour (0 to 23) in bits 0 to 4. Bits 5 to 7: Day of year (1 to 366) modulo 8.
x + 2	Day of year (1 to 366) / 8.
x + 3	Minute (0 to 59).
x + 4	Second (0 to 59).

This format can handle dates up to 31st December 2235.

Duration Format

Several packets have a group of five bytes to represent a duration. The format of these is:

Byte Number	Contents
x	Years (0 to 255)
x + 1	Bits 0 to 4: Hours (0 to 23) in bits 0 to 4. Bits 5 to 7: Days (0 to 366) modulo 8.
x + 2	Days (0 to 366) / 8.
x + 3	Minutes (0 to 59).
x + 4	Seconds (0 to 59).

All bytes being zero equates to a zero length duration.

Set of Outputs Format

Several packets have a group of 32 bytes to represent a set of outputs. The format of these is:

Byte Number	Contents
x	Bit 7 = Output 1 ... Bit 0 = Output 8
x + 1	Bit 7 = Output 9 ... Bit 0 = Output 16
...	...
x + 30	Bit 7 = Output 241 ... Bit 0 = Output 248
x + 31	Bit 7 = Output 249 ... Bit 1 = Output 255, Bit 0 = 0

Message Packets sent from Computer to the *IFAX*

Packets should not be sent from the computer to the *IFAX* until the previous packet has been both acknowledged by the *IFAX* and a response received (and acknowledged by the computer).

Session Start Request

The data consists of:

Byte Number	Contents
1	0 = Session Start Request

This packet is sent by the computer to start a session. See the chapter on [Authorisation](#) for more details.

Session Stop Request

The data consists of:

Byte Number	Contents
1	13 = Session Stop Request

This packet is sent by the computer to end a session. See the chapter on [Authorisation](#) for more details.

Authorisation Response

The data consists of:

Byte Number	Contents
1	15 = Authorisation Response
2...3	Response codes 1 to 2 (0 to 255).

This packet is sent by the computer on receipt of an [Authorisation Challenge](#) packet. See the chapter on [Authorisation](#) for more details.

Command

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33). The user number corresponds to one of the <i>Users</i> defined in the configuration data by <i>OnSite</i> ¹ .
3	Station number (0 to 32) at which command is to be executed
4	Command number
5...x	Command parameters.

This packet is sent by the computer to execute a command at the **IFAX**. This packet is only accepted by the **IFAX** if a corresponding Session has been started. Only those commands and users that have been allowed in the *OnSite* configuration program are accepted. The **IFAX** sends a [Command Response](#) packet after most *Command* packets. The only exception is when the **IFAX** sends another *Response* packet instead. The **IFAX** sends *Not Accepted* in the *Command Response* packet for those *Command* packets that are not accepted.

See the [Commands](#) chapter for more details of command numbers and parameters.

Keypress

The data consists of:

Byte Number	Contents
1	17 = Keypress
2	Panel number (0 to 14)
3	ASCII code for key: 48...57 [0]...[9] digit keys 78 [No/Cancel] key (N) 80 [Panel Silence] key (P) 82 [Reset] key (R) 83 [Silence/Re-sound] key (S) 88 [Next/Menu] key (X) 89 [Yes/Enter] key (Y)

This packet is sent by the computer to simulate keys being pressed at a ‘virtual’ repeater panel. It is generally used in conjunction with [Panel LCD](#) packets.

Keypress packets are ignored if the panel has been set to Direct Connection in *OnSite*.

If *Keypress* packets are sent at too high a rate, some keypresses will be lost. There is some buffering; but this is designed for human input, not machine input!

¹ The current version of *OnSite* only allows the Anonymous User (33) to send *Command* packets from an External Computer.

Enable Status LCD

The data consists of:

Byte Number	Contents
1	25 = Enable Status LCD
2	0 = Do not send out LCD packets for the Status LCD 1 = Send out LCD packets for the Status LCD

When a new session starts, the IFAX does not send out any [LCD](#) packets for the Status LCD, until the *Enable Status LCD* packet is received with valid data.

MESSAGE PACKETS SENT FROM COMPUTER TO THE /FAX

Commands

The [Command](#) packets are described in this chapter. Many of these correspond to the commands available to Procedures defined by the *OnSite* configuration program. The *OnSite* help documentation describes the effect of each of these commands.

The external computer sends *Command* packets to the **IFAX**. Not all *Command* packets may be accepted by a particular **IFAX**. The *OnSite* configuration program may have disallowed some commands.

After each *Command* packet, the **IFAX** sends a [Command Response](#) packet. The *Command Response* packet is sent within a few seconds of receiving the *Command* packet, unless stated otherwise.

The following commands are defined:

Activate LED	Disable Zone	Request Condition
Activate Output	Disconnect from Network	Request Device Details
Add Status Message	Enable Auxiliaries	Request Device Status
Cancel Timed Procedure	Enable Beacons	Request Events
Change Mode	Enable Loop	Request Events in Range
Class Change Off	Enable Output	Request Flag & Counter
Class Change On	Enable Output Delays	Status
Clear System Fault LED	Enable Outputs	Request Loop Details
De-activate LED	Enable Remote Signal	Request Loop Status
De-activate Output	Enable Sensor	Request Name
Decrement Counter	Enable Sensor Set	Request Output Status
Disable Auxiliaries	Enable Sounders	Request Station Status
Disable Beacons	Enable Timed Procedure	Reset Flag
Disable Loop	Enable Zone	Reset Output Delays
Disable Output	Generate Event	Re-Sound
Disable Output Delays	Increment Counter	Set Counter
Disable Outputs	Inhibit Timed Procedure	Set Date & Time
Disable Remote Signal	Normalise Devices	Set Flag
Disable Sensor	Panel Silence	Sounder Silence
Disable Sensor Set	Re-connect to Network	System Reset
Disable Sounders	Remove Status Message	Trigger Timed Procedure
Disable Timed Procedure	Request Alarm Statistics	

COMMANDS

The data for each command consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33) ¹ .
3	Station number (0 to 32) at which command is to be executed
4	Command number
5...x	Command parameters.

The commands are shown in detail below in Command number order.

¹ The current version of *OnSite* only allows the Anonymous User (33) to send *Command* packets from an External Computer.

Disable Outputs

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	2 = Disable Outputs
5...36	Set of Outputs

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The outputs that correspond to the bits that are set have been disabled. No event is recorded in the IFAX 's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid
No Response from Remote Station	The station has not responded to the command.

Enable Outputs

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	3 = Enable Outputs
5...36	Set of Outputs

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The outputs that correspond to the bits that are set have been re-enabled. No event is recorded in the IFAX 's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid
No Response from Remote Station	The station has not responded to the command.

Disable Sensor

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	4 = Disable Sensor
5	Loop number (1 to 16)
6	0
7	Address (1 to 127)
8	0

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The sensor (device) has been disabled. A <i>Sensor Disabled</i> event 113 is recorded in the IFAX 's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The sensor is not present or the station is not present or has incompatible firmware.
Already Disabled	The sensor was already disabled.
Not allowed while configuring	The IFAX is configuring.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Enable Sensor

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	5 = Enable Sensor
5	Loop number (1 to 16)
6	0
7	Address (1 to 127)
8	0

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The sensor (device) has been re-enabled. A <i>Sensor Re-enabled</i> event 49 is recorded in the IFAX 's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The sensor is not present or the station is not present or has incompatible firmware.
Not Disabled	The sensor isn't disabled.
Not allowed while configuring	The IFAX is configuring.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Disable Loop

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	6 = Disable Loop
5	Loop number (1 to 16)
6	0

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The loop has been disabled. A <i>Loop Disabled</i> event 114 is recorded in the IFAX 's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The loop is not present or the station is not present or has incompatible firmware.
Already Disabled	The loop was already disabled.
Not allowed while configuring	The IFAX is configuring.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Enable Loop

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	7 = Enable Loop
5	Loop number (1 to 16)
6	0

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The loop has been re-enabled. A <i>Loop Re-enabled</i> event 50 is recorded in the IFAX 's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The loop is not present or the station is not present or has incompatible firmware.
Not Disabled	The loop isn't disabled.
Not allowed while configuring	The IFAX is configuring.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Disable Sensor Set

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	8 = Disable Sensor Set
5	Loop number (1 to 16)
6	0
7	Bit 7 = 0, Bit 6 = Address 1 ... Bit 0 = Address 7
8	Bit 7 = Address 8 ... Bit 0 = Address 15
...	...
22	Bit 7 = Address 120 ... Bit 1 = Address 126, Bit 0 = Whole Loop

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The sensors that correspond to the bits that are set have been disabled. No event is recorded in the IFAX 's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started or the IFAX is configuring.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Enable Sensor Set

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	9 = Enable Sensor Set
5	Loop number (1 to 16)
6	0
7	Bit 7 = 0, Bit 6 = Address 1 ... Bit 0 = Address 7
8	Bit 7 = Address 8 ... Bit 0 = Address 15
...	...
22	Bit 7 = Address 120 ... Bit 1 = Address 126, Bit 0 = Whole Loop

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The sensors that correspond to the bits that are set have been re-enabled. No event is recorded in the IFAX 's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started or the IFAX is configuring.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Disable Zone

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	10 = Disable Zone
5	Zone number (0 to 255)
6	0

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted ²	The zone has been disabled. A <i>Zone Disabled</i> event 112 is recorded in the IFAX 's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The zone is not present or the station is not present or has incompatible firmware.
Already Disabled	The zone was already disabled.
Not allowed while configuring	The IFAX is configuring.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

² There may be more than a few seconds before this response is sent.

Enable Zone

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	11 = Enable Zone
5	Zone number (0 to 255)
6	0

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted ³	The zone has been re-enabled. A <i>Zone Re-enabled</i> event 48 is recorded in the IFAX 's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The zone is not present or the station is not present or has incompatible firmware.
Not Disabled	The zone isn't disabled.
Not allowed while configuring	The IFAX is configuring.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

³ There may be more than a few seconds before this response is sent.

Activate LED

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	14 = Activate LED
5...6	LED number (1 to 999)

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The LED has been activated
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

LED numbers correspond to the zonal LEDs on the panel and any mimic diagrams. If there is at least one activation for the LED then it is on.

De-activate LED

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	15 = De-activate LED
5...6	LED number (1 to 999)

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The LED has been de-activated
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

LED numbers correspond to the zonal LEDs on the panel and any mimic diagrams. If the total number of activations for a LED is zero, then the LED is off.

Generate Event

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	17 = Generate event
5	Event number
6...7	Parameter 1
8	Parameter 2
9	0
10	Parameter 3
11	0

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The event has been recorded
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid
No Response from Remote Station	The station has not responded to the command.

The meaning of the event number and parameters 1 to 3 are as defined in the [Meaning of Event Numbers](#) chapter.

Set Flag

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	22 = Set Flag
5	Flag number (0 to 255)
6	0

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The flag has been set
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Reset Flag

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	23 = Reset Flag
5	Flag number (0 to 255)
6	0

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The flag has been reset
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Add Status Message

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	26 = Add Status Message
5	Event number
6...7	Parameter 1
8	Parameter 2
9	0
10	Parameter 3
11	0

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The message will be displayed
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

The meaning of the event number and parameters 1 to 3 are as defined in the [Meaning of Event Numbers](#) chapter.

Remove Status Message

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	27 = Remove Status Message
5	Event number
6...7	Parameter 1
8	Parameter 2
9	0
10	Parameter 3
11	0

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The message will be removed
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

The meaning of the event number and parameters 1 to 3 are as defined in the [Meaning of Event Numbers](#) chapter.

Disable Output Delays

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	28 = Disable Output Delays
5...36	Set of Outputs

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The outputs that correspond to the bits that are set have had their delays disabled (the outputs will operate immediately if activated). No event is recorded in the IFAX 's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Enable Output Delays

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	29 = Enable Output Delays
5...36	Set of Outputs

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The outputs that correspond to the bits that are set have had their delays enabled. No event is recorded in the IFAX 's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Reset Output Delays

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	32 = Reset Output Delays
5...36	Set of Outputs

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The outputs that correspond to the bits that are set have had their delays reset (any delay periods that are in progress are re-started). No event is recorded in the IFAX 's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Disable Output

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	38 = Disable Output
5	Output number (1 to 255)
6	0

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The output has been disabled. An <i>Output Disabled</i> event 115 is recorded in the IFAX 's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The output number is invalid or its type is <i>undefined</i> in the configuration data or the station is not present or has incompatible firmware.
Already Disabled	The output was already disabled.
Not allowed to disable	Configuration data has specified that this output must not be disabled.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Enable Output

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	39 = Enable Output
5	Output number (1 to 255)
6	0

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The output has been re-enabled. An <i>Output Re-enabled</i> event 51 is recorded in the IFAX 's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The output number is invalid or its type is <i>undefined</i> in the configuration data or the station is not present or has incompatible firmware.
Not Disabled	The output isn't disabled.
Not Allowed to Disable	Configuration data has specified that this output must not be disabled.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Disable Auxiliaries

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	40 = Disable Auxiliaries

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The auxiliary relays have been disabled. An <i>Output Group Disabled</i> event 116 is recorded in the IFAX 's event record with Output Group = 4 (Auxiliary Relays).
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Already Disabled	All auxiliary relays were already disabled.
Not Applicable	There are no auxiliary relays defined in the configuration data.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Enable Auxiliaries

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	41 = Enable Auxiliaries

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The auxiliary relays have been re-enabled. An <i>Output Group Re-enabled</i> event 52 is recorded in the IFAX 's event record with Output Group = 4 (Auxiliary Relays).
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Not Disabled	No auxiliary relays were disabled.
Not Applicable	There are no auxiliary relays defined in the configuration data.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Request Events

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	0 = Local station
4	46 = Request Events
5...9	Earliest date and time (Date & Time Format)

Either: An [Event Response](#) packet will be sent for each event in the **IFAX's** event record that is after the date specified in the command. The events will be sent in the order oldest to newest. Note that this request could generate a large number of response packets! After the newest event, a final *Event Response* packet is sent with event code 0; this informs the computer that no more *Event Response* packets will be sent.

If the date / time bytes in the *Request Events* packet are all 0 then all events are sent.

A [Missing Events](#) *Event Response* packet may be sent before any other *Event Response* packets if the first event in the Event Record is after the specified date / time and the first event is not [Event Record Started](#).

Or: One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Invalid	The data in the packet is invalid

On a networked system, the Event Record should be accessed from the local station only (byte 3 = 0). The other stations should have the same event record.

See also: [Request Events in Range](#) command.

Request Flag & Counter Status

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	47 = Request Flag & Counter Status
5	Flag/Counter number (0 to 255)
6	0

Either: A [Flag & Counter Status Response](#) packet will be sent.

Or: One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Request Station Status

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	48 = Request Station Status

Either: A [Station Status Response](#) packet will be sent.

Or: One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Request Events in Range⁴

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	0 = Local station
4	49 = Request Events in Range
5...9	Earliest date and time (Date & Time Format)
10...11	Maximum number of <i>Event Response</i> packets to be returned (1 to 65535)

Either: An [Event Response](#) packet will be sent for each event in the **IFAX's** Event Record that is after the date specified in the command, up to a maximum number of packets specified in bytes 10 and 11. The events will be sent in the order oldest to newest. After the final event, a final *Event Response* packet is sent with event code 0; this informs the computer that no more *Event Response* packets will be sent.

If the date / time bytes in the *Request Events* packet are all 0 then events are sent starting from the beginning of the Event Record.

A [Missing Events](#) *Event Response* packet may be sent before any other *Event Response* packets if the first event in the Event Record is after the specified date / time and the first event is not [Event Record Started](#).

The maximum number of *Event Response* packets should not be set to 1 because if a *Missing Events* *Event Response* packet is sent, no other *Event Response* packets will be sent. If the maximum number of *Event Response* packets is set to 0 it is treated as 1.

The final *Event Response* packet with event code 0 does not count towards the maximum number of *Event Response* packets.

Or: One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Invalid	The data in the packet is invalid

On a networked system, the Event Record should be accessed from the local station only (byte 3 = 0). The other stations should have the same event record.

See also: [Request Events](#) command.

⁴ This command was first implemented in **IFAX** Main Board firmware version 10.13.

Request Conditions

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	0 = Local station
4	50 = Request Conditions
5	Condition type 2 Alarms 4 Pre-Alarms 7 Faults 8 Warnings 10 Disablements 12 Messages

Either: [Condition Response](#) packets will be sent for each object in the requested condition type. Note that this request could generate a large number of response packets! After all objects, a final *Condition Response* packet is sent with event code 0; this informs the computer that no more *Condition Response* packets will be sent.

Or: One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Invalid	The data in the packet is invalid

On a networked system, Conditions should be accessed from the local station only (byte 3 = 0). Other stations should have the same conditions.

Request Output Status

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	51 = Request Output Status
5	Output number (1 to 255)
6	0

Either: An [Output Status Response](#) packet will be sent.

Or: One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Note that *Output Status Response* packets are sent for the requested output, even if that output is undefined.

Request Device Status

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	53 = Request Device Status
5	Loop number (1 to 16)
6	0
7	Device address (1 to 126)
8	0

Either: A [Device Status Response](#) packet will be sent.

Or: One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The requested device is not present or the station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Request Loop Status

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	54 = Request Loop Status
5	Loop number (1 to 16)
6	0

Either: A [Loop Status Response](#) packet will be sent.

Or: One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The requested loop is not present or the station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Increment Counter

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
3	55 = Increment Counter
4	Counter number (0 to 255)
5...6	0

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The counter has been incremented ⁵ .
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Decrement Counter

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	56 = Decrement Counter
5	Counter number (0 to 255)
6...7	0

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The counter has been decremented ⁶ .
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

⁵ Unless it was already at the maximum value of 65535.

⁶ Unless it was already at the minimum value of 0.

Set Counter

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	57 = Set Counter
5	Counter number (0 to 255)
6...7	Value (0 to 65535)

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The counter has been set to the value in bytes 6 and 7.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Set Date & Time

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	0 = Local station
4	62 = Set Date & Time
5	0
6...10	Current date and time (Date & Time Format)

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The IFAX's date and time are set. A Date Set event is recorded in the IFAX's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Invalid	The data in the packet is invalid

On a networked system, the Date and Time should be set at the local station only (byte 3 = 0). The other stations will automatically set their own date and times.

Sounder Silence

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	63 = Sounder Silence

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The sounders have been silenced. <i>OnSite</i> configuration data determines whether local sounders or network-wide sounders are silenced. A <i>Sounders Silenced</i> event 14 or <i>Network Silence</i> event 166 is recorded in the IFAX 's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started or no sounders are activated or sounders are already silenced.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Disconnect from Network

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	0 = Local station
4	64 = Disconnect from Network

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The IFAX has been disconnected from the IFAX -Network. A <i>Station Disconnected</i> event 117 is recorded in the IFAX 's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Already Disabled	The IFAX is already disconnected.
Not Allowed	Not on an IFAX -Network.
Invalid	The data in the packet is invalid

Only Disconnect the local station (byte 3 = 0), attempting to Disconnect a remote station will cause it to not report the disconnection back to the originating station.

Re-connect to Network

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	0 = Local station
4	65 = Re-connect to Network

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The local IFAX has been re-connected from the IFAX -Network. A <i>Station Re-connected</i> event 53 is recorded in the IFAX 's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Not Disabled	The IFAX is not disconnected.
Not Allowed	Not on an IFAX -Network.
Invalid	The data in the packet is invalid

It is only possible to Re-connect the local station (byte 3 = 0) because the remote (disconnected) station is not accepting any commands—including the Re-connect command!

Inhibit Timed Procedure

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	66 = Inhibit Timed Procedure
5	Timed Procedure number - 1 (0 to 254)

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The next execution of the timed procedure has been inhibited. No event is recorded in the IFAX 's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Note: Byte 5 of the data is the Timed Procedure number *less 1*.

Request Name

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	67 = Request Name
5	Name type 1 = Zone name 2 = Device address name 3 = Panel name 4 = Output name 5 = Station name 7 = Zone name from device address 8 = User name
6	Station number (0 to 32). This should be identical to the value in byte 3.
7	Zone number (0 to 255) if Name type = 1 Loop number (1 to 16) if Name type = 2 or 7 Panel number (0 to 17) if Name type = 3 Output number (1 to 255) if Name type = 4 User number (1 to 32) if Name type = 8 0 otherwise
8	Device address (1 to 126) if Name type = 2 or 7 0 otherwise

Either: A [Name Response](#) packet will be sent⁸.

Or: One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

⁷ If byte 3 was 4 and byte 6 was 5 then this command would be asking Station 4 for the name of an object at Station 5. This will work, but it takes longer.

⁸ This may happen even if the parameters for the name are invalid.

Disable Timed Procedure

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	68 = Disable Timed Procedure
5	Timed Procedure number - 1 (0 to 254)

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The timed procedure has been disabled. No event is recorded in the IFAX 's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Note: Byte 5 of the data is the Timed Procedure number *less 1*.

Enable Timed Procedure

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	69 = Enable Timed Procedure
5	Timed Procedure number - 1 (0 to 254)

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The timed procedure has been re-enabled. No event is recorded in the IFAX 's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Note: Byte 5 of the data is the Timed Procedure number *less 1*.

Change Mode

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	70 = Change Mode
5	Zone number (0 to 255) or 0 (all zones)
6	0 (single zone) or 1 (all zones)
7	Device mode - 1 (0 to 4) or Initial Mode (16)
8	Device type number

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted ⁹	The devices of the type in the zone (or all zones) have been changed to the specified mode. No event is recorded in the IFAX 's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

⁹ There may be more than a few seconds before this response is sent.

System Reset

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	71 = System Reset

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	A System Reset has been started. A <i>System Reset</i> event 13 or <i>Network-wide System Reset</i> event 179 is recorded in the IFAX 's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started or the system is already resetting.
Not Allowed	Sounders have not been silenced or there is not an alarm or pre-alarm condition.
Not Allowed While Configuring	The system is re-configuring.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Clear System Fault LED¹⁰

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	73 = Clear System Fault LED

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The System Fault LED has been cleared. A System Fault LED Cleared event is recorded in the IFAX 's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started or the System Fault LED is not set.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

¹⁰ This command was first implemented in **IFAX** Main Board firmware version 10.13.

Normalise Devices

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	75 = Normalise Devices
5	Zone number (0 to 255) or 0 (all zones)
6	0 (single zone) or 1 (all zones)
7	0
8	0

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The devices in the zone (or all zones) have been normalised. A Devices Normalised event is recorded in the IFAX 's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Not Allowed While in Alarm	The system is in alarm
Not Allowed While Configuring	The system is configuring
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Trigger Timed Procedure

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	77 = Trigger Timed Procedure
5	Timed Procedure number - 1 (0 to 254)
6...10	Delay (Duration Format)

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The timed procedure will be executed after the delay specified. Set the delay to zero in order to execute the timed procedure as soon as possible. No event is recorded in the IFAX 's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Note: Byte 5 of the data is the Timed Procedure number *less 1*.

Cancel Timed Procedure

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	78 = Cancel Timed Procedure
5	Timed Procedure number - 1 (0 to 254)
6...10	0

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The timed procedure will not be executed after the delay period previously specified. No event is recorded in the IFAX 's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Note: Byte 5 of the data is the Timed Procedure number *less 1*.

Request Loop Details

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	79 = Request Loop Details
5	Loop number (1 to 16)
6	0

Either: A [Loop Details Response](#) packet will be sent.

Or: One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The requested loop is not present or the station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Request Device Details

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	81 = Request Device Details
5	Loop number (1 to 16)
6	0
7	Device address (1 to 126)
8	0

Either: A [Device Details Response](#) packet will be sent.

Or: One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The requested device is not present or the station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Disable Sounders

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	83 = Disable Sounders

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The sounders have been disabled. An <i>Output Group Disabled</i> event 116 is recorded in the IFAX 's event record with Output Group = 1 (Sounders).
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Already Disabled	All sounders were already disabled.
Not Applicable	There are no sounders defined in the configuration data.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Enable Sounders

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	84 = Enable Sounders

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The sounders have been re-enabled. An <i>Output Group Re-enabled</i> event 52 is recorded in the IFAX 's event record with Output Group = 1 (Sounders).
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Not Disabled	No sounders were disabled.
Not Applicable	There are no sounders defined in the configuration data.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Request Alarm Statistics¹¹

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	85 = Request Alarm Statistics
5	0
6	0
7	0
8	0

Either: An [Alarm Statistics Response](#) packet will be sent.

Or: One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

¹¹ This command was first implemented in **IFAX** Main Board firmware version 10.14.

Disable Beacons

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	86 = Disable Beacons

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The beacons have been disabled. An <i>Output Group Disabled</i> event 116 is recorded in the IFAX 's event record with Output Group = 2 (Beacons).
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Already Disabled	All beacons were already disabled.
Not Applicable	There are no beacons defined in the configuration data.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Enable Beacons

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	87 = Enable Beacons

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The beacons have been re-enabled. An <i>Output Group Re-enabled</i> 52 event is recorded in the IFAX 's event record with Output Group = 2 (Beacons).
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Not Disabled	No beacons were disabled.
Not Applicable	There are no beacons defined in the configuration data.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Disable Remote Signal

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	89 = Disable Remote Signal

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The remote signal output has been disabled. An <i>Output Group Disabled</i> event 116 is recorded in the IFAX 's event record with Output Group = 3 (Remote Signal).
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Already Disabled	The remote signal output was already disabled.
Not Applicable	There is no remote signal output defined in the configuration data.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Enable Remote Signal

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	90 = Enable Remote Signal

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The remote signal output has been re-enabled. An <i>Output Group Re-enabled</i> event 52 is recorded in the IFAX 's event record with Output Group = 3 (Remote Signal).
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Not Disabled	The remote signal output was disabled.
Not Applicable	There is no remote signal output defined in the configuration data.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Class Change On

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	94 = Class Change On

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	Class Change has been activated. A Manual Class Change event is recorded in the IFAX 's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started or Class Change is already activated.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Class Change Off

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	95 = Class Change Off

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	Class Change has been de-activated. No event is recorded in the IFAX 's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started or Class Change is not activated.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Activate Output

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	97 = Activate Output
5	Output number (1 to 255)
6	Activation type <ul style="list-style-type: none"> 1 Continuous 2 Pulsing 3 Continuous bypassing any delay 4 Output Sequence 1 5 Output Sequence 2 6 Output Sequence 3 7 Output Sequence 4

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The output has been activated. No event is recorded in the IFAX 's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

De-activate Output

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	98 = De-activate Output
5	Output number (1 to 255)
6	Activation type <ul style="list-style-type: none"> 1 Continuous 2 Pulsing 3 Continuous bypassing any delay 4 Output Sequence 1 5 Output Sequence 2 6 Output Sequence 3 7 Output Sequence 4

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The output has been de-activated. No event is recorded in the IFAX 's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Re-sound

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	99 = Re-sound

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The sounders have been re-sounded. A Sounders Re-sounded or Network-wide Sounders Re-sounded event is recorded in the IFAX 's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started or the sounders are not silenced.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Panel Silence

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32)
4	100 = Panel Silence

One of the following response codes will be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The internal buzzer has been silenced. <i>A Panel Sounder Silenced</i> event 15 or <i>Network-wide Panel Sounders Silenced</i> event 168 is recorded in the IFAX 's event record.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started or the panel sounder is not activated.
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

Undefined or undocumented Command

The data consists of:

Byte Number	Contents
1	3 = Command
2	User number (1 to 32) or Anonymous (33).
3	Station number (0 to 32) at which command is to be executed
4	Command number other than one defined above
5...	Remaining bytes in packet (may be none)

One of the following response code may be returned in a [Command Response](#) packet:

Response	Meaning
Accepted	The command is undocumented. It is probably an internal command that should not be used by an external computer.
Absent	The command is not defined. Future versions of IFAX firmware may define the command.
Not Accepted	<i>OnSite</i> has disallowed the command and/or user or a session has not been started. Future versions of IFAX firmware may define the command
Absent	The station is not present or has incompatible firmware.
Invalid	The data in the packet is invalid.
No Response from Remote Station	The station has not responded to the command.

The external computer should not send undefined or undocumented commands to the **IFAX**. These commands may have unforeseen consequences!

COMMANDS

Message Packets sent from the *IFAX* to the Computer on request

Session Started

The data consists of:

Byte Number	Contents
1	16 = Session Started

This packet is sent in response to a valid [Authorisation Response](#) packet when a [Session Start Request](#) is pending. See the [Authorisation](#) chapter for details of this packet.

Session Stopped

The data consists of:

Byte Number	Contents
1	23 = Session Stopped

This packet is sent in response to a valid [Session Stop Request](#) packet. This packet is also sent after five time-outs of acknowledgement to a previous packet. See the [Authorisation](#) chapter for details of this packet.

Command Response

The data consists of:

Byte Number	Contents																										
1	4 = Command Response																										
2	Packet number of Command packet																										
3	User number of Command packet																										
4	Response Code. Not all codes defined here are used by current IFAX firmware. <table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">1 Command accepted</td> <td style="width: 50%;">14 Not allowed while system is on test</td> </tr> <tr> <td>2 Command not accepted</td> <td>15 Not applicable</td> </tr> <tr> <td>3 Not implemented yet</td> <td>16 Not allowed to disable this</td> </tr> <tr> <td>4 Absent</td> <td>17 Not allowed</td> </tr> <tr> <td>5 Already disabled</td> <td>18 Invalid</td> </tr> <tr> <td>6 Not disabled</td> <td>19 Response not documented</td> </tr> <tr> <td>7 No faults to silence</td> <td>20 Processing over network¹</td> </tr> <tr> <td>8 Nothing to reset</td> <td>21 Response not documented</td> </tr> <tr> <td>9 Responded</td> <td>22 No devices on loop</td> </tr> <tr> <td>10 Not allowed until sounders are silenced</td> <td>23 Processing²</td> </tr> <tr> <td>11 Not allowed while system is resetting</td> <td>24 No response from remote station³</td> </tr> <tr> <td>12 Not allowed while system is configuring</td> <td>25 No zones found</td> </tr> <tr> <td>13 Not allowed while system is in alarm</td> <td>26 Disconnected</td> </tr> </table>	1 Command accepted	14 Not allowed while system is on test	2 Command not accepted	15 Not applicable	3 Not implemented yet	16 Not allowed to disable this	4 Absent	17 Not allowed	5 Already disabled	18 Invalid	6 Not disabled	19 Response not documented	7 No faults to silence	20 Processing over network ¹	8 Nothing to reset	21 Response not documented	9 Responded	22 No devices on loop	10 Not allowed until sounders are silenced	23 Processing ²	11 Not allowed while system is resetting	24 No response from remote station ³	12 Not allowed while system is configuring	25 No zones found	13 Not allowed while system is in alarm	26 Disconnected
1 Command accepted	14 Not allowed while system is on test																										
2 Command not accepted	15 Not applicable																										
3 Not implemented yet	16 Not allowed to disable this																										
4 Absent	17 Not allowed																										
5 Already disabled	18 Invalid																										
6 Not disabled	19 Response not documented																										
7 No faults to silence	20 Processing over network ¹																										
8 Nothing to reset	21 Response not documented																										
9 Responded	22 No devices on loop																										
10 Not allowed until sounders are silenced	23 Processing ²																										
11 Not allowed while system is resetting	24 No response from remote station ³																										
12 Not allowed while system is configuring	25 No zones found																										
13 Not allowed while system is in alarm	26 Disconnected																										

This packet is sent in response to a [Command](#) packet. The chapter on [Commands](#) describes each individual Command packet and states which *Command Responses* packets are possible and their meaning.

¹ This interim response may be sent by the **IFAX** if a delay is expected before a final response.

² This interim response may be sent by the **IFAX** if a delay is expected before a final response.

³ This response may be sent by the **IFAX** if the remote station never received the command or if the local station never received an acknowledgement from the remote station. In the latter case, the remote station *may* have taken action on the command.

Name Response

The data consists of:

Byte Number	Contents
1	5 = Name Response
2	Packet number of <i>Request Name</i> Command packet
3	User number of <i>Request Name</i> Command packet
4	Name type 1 = Zone name 2 = Device address name 3 = Panel name 4 = Output name 5 = Station name 7 = Zone name from device address 8 = User name
5	Station number (0 to 32)
6	Zone number (0 to 255) if Name type = 1 Loop number (1 to 16) if Name type = 2 or 7 Panel number (0 to 17) if Name type = 3 Output number (1 to 255) if Name type = 4 User number (1 to 32) if Name type = 8 0 otherwise
7	Device address (1 to 126) if Name type = 2 or 7 0 otherwise
8...45	Name (0 to 40 ASCII characters). If less than 40 characters then the name is padded with zero bytes.

This packet is sent on receipt of a [Request Name](#) command packet. No [Command Response](#) packet is sent. If the parameters of the *Request Name* command packet were invalid, then the Name Response packet may still returned with an empty name (all zeroes).

The computer is expected to cache some of these names, rather than repeatedly requesting them from the **IFAX**.

Device Status Response

The data consists of:

Byte Number	Contents
1	6 = Device Status Response
2	Packet number of <i>Request Device Status</i> Command packet
3	User number of <i>Request Device Status</i> Command packet
4	Station number (0 to 32)
5	Loop number (1 to 16)
6	Device address (1 to 126)
7	Zone number (0 to 255)
8	Sensor device type (0 to 255). Defined in IFXDEV.DAT file, supplied with <i>OnSite</i> program.
9	Bit 0 No data available (other bytes may be invalid) Bit 1 Device address or zone disabled Bits 2 to 7 Undocumented
10	Device condition (0 to 255). As defined in the chapter on Meaning of Event Numbers .

This packet is sent on receipt of a [Request Device Status](#) command packet. No [Command Response](#) packet is sent.

Device Details Response

The data consists of:

Byte Number	Contents
1	7 = Device Details Response
2	Packet number of <i>Request Device Details</i> Command packet
3	User number of <i>Request Device Details</i> Command packet
4	Station number (0 to 32)
5	Loop number (1 to 16)
6	Device address (1 to 126)
7	Zone number (0 to 255)
8	Sensor device type (0 to 255). Defined in IFXDEV.DAT file, supplied with <i>OnSite</i> program.
9	Bit 0 No data available (other bytes may be invalid) Bit 1 Drift data (byte 15) is valid Bit 2 Alarm count (byte 18) is valid Bits 3 to 7 Undocumented
10...11	Manufactured date (0 to 2856). 0 = n/a, 1 = Jan 1998, 2 = Feb 1998, ..., 2856 = Dec 2235
12	Device mode (0 to 5). 0 = n/a, 1...5 = Mode
13	Analogue value (0 to 127)
14	Input response bits. Bits 0 to 2.
15	Output command bits. Bits 0 to 2.
16	Drift value (-16 to +15).
17...18	Date of last alarm (0 to 2856). 0 = n/a, 1 = Jan 1998, 2 = Feb 1998, ..., 2856 = Dec 2235
19	Count of alarms (0 to 255).

This packet is sent on receipt of a [Request Device Details](#) command packet. No [Command Response](#) packet is sent. The meaning of these parameters is as described in Apollo documentation.

Loop Status Response

The data consists of:

Byte Number	Contents
1	8 = Loop Status Response
2	Packet number of <i>Request Loop Status</i> Command packet
3	User number of <i>Request Loop Status</i> Command packet
4	Station number (0 to 32)
5	Loop number (1 to 16)
6	Bit 0 No data available (other bytes may be invalid) Bit 1 Loop disabled Bit 2 Voltages and currents (bytes 10 to 17) are valid Bit 3 Device condition (bytes 18 & 19) is valid Bits 4 to 7 Undocumented
7	0 No Protocol 1 Apollo Protocol
8	0 No Topology 1 Loop Topology 2 Radial Topology
9	Loop condition (0 to 255). As defined in the chapter on Meaning of Event Numbers .
10...11	Voltage 1 (0 to 65535), in 1/10ths volt
12...13	Current 1 (0 to 65535), in mA
14...15	Voltage 2 (0 to 65535), in 1/10ths volt
16...17	Current 2 (0 to 65535), in mA
18	Device Condition type 2 Alarms 4 Pre-Alarms 5 Tests 7 Faults 8 Warnings 10 Disablements 13 Healthy
19	Device Quantity (0 to 126). Number of devices on loop that are in the Device Condition.

This packet is sent on receipt of a [Request Loop Status](#) command packet. No [Command Response](#) packet is sent.

Loop Details Response

The data consists of:

Byte Number	Contents
1	9 = Loop Details Response
2	Packet number of <i>Request Loop Details</i> Command packet
3	User number of <i>Request Loop Details</i> Command packet
4	Station number (0 to 32)
5	Loop number (1 to 16)
6	Bit 0 No data available (other bytes may be invalid) Bits 1 to 7 Undocumented
7	Total quantity of devices (0 to 126)
8...19	Quantity (0 to 126) of devices of index x, where x is 0 to 11.
20...31	Type (0 to 255) of device of index x. This is defined in IFXDEV.DAT, supplied with <i>OnSite</i> program.

This packet is sent on receipt of a [Request Loop Details](#) command packet. No [Command Response](#) packet is sent. The 12 most popular types are recorded in the Quantity and Type bytes. There may be other types included in the Total Quantity in byte 7.

Event Response

The data consists of:

Byte Number	Contents
1	10 = Event Response
2	Packet number of <i>Request Events</i> or <i>Request Events in Range</i> Command packet
3	User number of <i>Request Events</i> or <i>Request Events in Range</i> Command packet
4	Station number (0 to 32)
5	Event number
6...7	Parameter 1
8	Parameter 2
9	Parameter 3
10	Parameter 4
11	Parameter 5
12	Parameter 6
13	Parameter 7
14...18	Date and time of event (Date & Time Format)

This packet is sent in response to a [Request Events](#) or [Request Events in Range](#) command packet. No [Command Response](#) packet is sent. The event number and parameters are as described in the chapter on [Meaning of Event Numbers](#).

If the event number is zero then this packet indicates that no more *Event Response* packets follow and that the event in this packet should be ignored.

Event packets are distinguishable from [Real-time Event](#) packets by the packet type number in byte 1.

Flag & Counter Status Response

The data consists of:

Byte Number	Contents
1	11 = Flag & Counter Status Response
2	Packet number of <i>Request Flag & Counter Status</i> Command packet
3	User number of <i>Request Flag & Counter Status</i> Command packet
4	Station number (0 to 32)
5	Flag/Counter number (0 to 255)
6	0 = Flag is not set 1 = Flag is set
7..8	Counter value (0 to 65535)

This packet is sent on receipt of a [Request Flag & Counter Status](#) command packet. No [Command Response](#) packet is sent. It returns both a Flag and a Counter, even though the two are unrelated.

Station Status Response

The data consists of:

Byte Number	Contents
1	12 = Station Status Response
2	Packet number of <i>Request Station Status</i> Command packet
3	User number of <i>Request Station Status</i> Command packet
4	Station number (0 to 32)
5	Bit 0 No data available (other bytes may be invalid) Bits 1 to 7 Undocumented
6	Bit 0 Devices disabled Bit 1 Outputs disabled Bit 2 In Alarm state Bit 3 In Pre-Alarm state Bit 4 In Supply Fault state Bit 5 In Configuration Fault state Bit 6 In Device Fault state Bit 7 In Output Fault state
7	Bit 0 In Network Fault state Bit 1 Internal sounder is silenced Bit 2 Sounders are silenced Bit 3 Undocumented Bit 4 In Test state Bit 5 Station is configuring Bit 6 Station is resetting Bit 7 Zones disabled
8	Bit 0 Another station is in a warning state Bit 1 In Network Warning state Bit 2 Sounders active Bit 3 In Repeater Fault state Bit 4 In Device Warning state Bit 5 In Warning state Bit 6 In Walk Test Alarm state Bit 7 Another station is in a fault state
9	Bit 0 Undocumented Bit 1 Undocumented Bit 2 Undocumented Bit 3 Undocumented Bit 4 Undocumented Bit 5 Undocumented Bit 6 In Remote Signal Fault State Bit 7 In Sounder Fault state
10	Undocumented
11	Highest Loop number (1 to 16). 0 = unknown number of loops.
12	IFAX Main Board firmware version number (9 to 99)
13	IFAX Main Board firmware amendment number (0 to 99)
14...15	Year (1980 to 2235) of Configuration data
16	Month of Configuration data.
17	Day of Configuration data
18...22	Current date and time of station (Date & Time Format)
23	Upstream Neighbour Station (1 to 32), 0 = Unknown or not on network.
24	Bits 0 to 7 Panels 0 to 7 are virtual
25	Bits 0 to 6 Panels 8 to 14 are virtual Bit 7 Undocumented

This packet is sent on receipt of a [Request Station Status](#) command packet. No [Command Response](#) packet is sent.

Condition Response

The data consists of:

Byte Number	Contents
1	21 = Condition Response
2	Packet number of <i>Request Conditions</i> Command packet
3	User number of <i>Request Conditions</i> Command packet
4	Station number (0 to 32)
5	1 = Newest condition of this type 2 = First ⁴ condition of this type 0 = Other condition of this type
6	Condition type 2 Alarms 4 Pre-Alarms 7 Faults 8 Warnings 10 Disablements 12 Messages
7	Event number
8...9	Parameter 1
10	Parameter 2
11	Parameter 3
12	Parameter 4
13	Parameter 5
14	Parameter 6
15	Parameter 7
16...20	Date and time when object entered condition (Date & Time Format)

This packet is sent on receipt of a [Request Conditions](#) command packet. No [Command Response](#) packet is sent. The event number and parameters are as described in the chapter on [Meaning of Event Numbers](#).

If the event number is zero then this packet indicates that no more *Condition Response* packets follow and that the condition in this packet should be ignored.

⁴ This means first condition of this type to occur, *not* first condition sent to External Computer.

Output Status Response

The data consists of:

Byte Number	Contents
1	22 = Output Status Response
2	Packet number of <i>Request Output Status</i> Command packet
3	User number of <i>Request Output Status</i> Command packet
4	Station number (0 to 32)
5	Output number (1 to 255)
6	Bit 0 No data available (other bytes may be invalid) Bit 1 Output is disabled Bit 2 Delay is disabled Bits 3 to 7 Undocumented
7	0 Undefined type 1 Sounder circuit 2 Beacon circuit 3 Monitored Auxiliary circuit 4 Un-monitored Auxiliary circuit 5 Remote Signal circuit 6 Internal Sounder circuit
8	Output condition (0 to 255). As defined in the chapter on Meaning of Event Numbers .
9	0 Output is not activated 1 Output is activated Continuously 2 Output is activated Pulsing
10...11	Number of sources of Continuous activation
12...13	Number of sources of Pulsing activation
14...15	Number of sources of Continuous, bypass delay, activation
16...17	Number of sources of Sequence 1 activation
18...19	Number of sources of Sequence 2 activation
20...21	Number of sources of Sequence 3 activation
22...23	Number of sources of Sequence 4 activation
24...25	Delay counter
26	Sequence 1 Position (0 to 15)
27	Sequence 1 Timer (0 to 255)
28	Sequence 2 Position (0 to 15)
29	Sequence 2 Timer (0 to 255)
30	Sequence 3 Position (0 to 15)
31	Sequence 3 Timer (0 to 255)
32	Sequence 4 Position (0 to 15)
33	Sequence 4 Timer (0 to 255)

This packet is sent on receipt of a [Request Output Status](#) command packet. No [Command Response](#) packet is sent.

Alarm Statistics Response

The data consists of:

Byte Number	Contents
1	27 = Alarm Statistics Response
2	Packet number of <i>Request Alarm Statistics</i> Command packet
3	User number of <i>Request Alarm Statistics</i> Command packet
4	Station number (0 to 32)
5...9	Date and time when Alarm Statistics records began (Date & Time Format)
10...11	Total number of automatic alarms (0 to 65535)
12...13	Total number of manual alarms (0...65535)
14...15	Total number of other alarms (0...65535)
16...17	Total number of unknown alarms (0...65535)
18...19	Number of automatic alarms in last few months (0 to 65535)
20...21	Number of manual alarms in last few months (0 to 65535)
22...23	Number of other alarms in last few months (0 to 65535)
24...25	Number of unknown alarms in last few months (0 to 65535)
26...27	Current month number (1 = Jan 1998, etc) ⁵
28	Number of months' worth of statistics ("last few months") (0 to 12)
29	0
30	Bit 0 Number of False Alarms known Bit 1 Number of Automatic Fire Detectors known Bit 2 Number of Test Alarms known Bit 3 Test Frequency known Bits 4 to 7 Undocumented
31...32	Number of False Alarms in last few months (0 to 65535)
33...34	Number of Automatic Fire Detectors (0 to 65535)
35...36	Frequency of Regular Testing (0 = no testing, 1 to 65535 days) ⁶
37...38	Number of Test Alarms in last few months (0 to 65535)

This packet is sent on receipt of a [Request Alarm Statistics](#) command packet. No [Command Response](#) packet is sent.

⁵ Statistics are for completed months and do not include the current month.

⁶ The normal frequency should be once every 7 days.

MESSAGE PACKETS SENT TO THE COMPUTER ON REQUEST

Message Packets sent automatically from the *IFAX* to the Computer

Real-time Event

The data consists of:

Byte Number	Contents
1	1 = Real-time Event
2	Event number
3...4	Parameter 1
5	Parameter 2
6	Parameter 3
7	Parameter 4
8	Parameter 5
9	Parameter 6
10	Parameter 7
11...15	Date and time of event (Date & Time Format)

This packet is sent whenever a new event is recorded in the **IFAX** Event Record and a session has been started. The event number and parameters are as described in the chapter on [Meaning of Event Numbers](#).

Real-time Event packets are distinguishable from [Event Response](#) packets by the packet type number in byte 1.

Authorisation Challenge

The data consists of:

Byte Number	Contents
1	2 = Authorisation Challenge
2...7	Challenge codes 1 to 6 (0 to 255).

This packet is sent on receipt of a [Session Start Request](#) packet from the computer and at regular intervals until a [Session Stop Request](#) packet is received from the computer. See the [Authorisation](#) chapter for details of this packet.

LCD

The data consists of:

Byte Number	Contents
1	14 = LCD
2	0...14 Sent to LCD at panel number 0 to 14 16 Sent to Status LCD
3	Length x (1 to 200)
4...x+3	ASCII characters to send to an LCD. Each character is system either a 'printable' code in the range <SPACE> (code 32) to '~' (code 126) or one of the special codes in the range 0 to 31 defined in the <i>OnSite</i> documentation. These special codes are used for centring, right-justification etc.

This packet is sent whenever the Status or Panel LCD of the **IFAX** changes or requires refreshing. It is intended to be used to implement a 'virtual' repeater panel. The packet does not include a complete image of the LCD, only a section. The Panel LCD normally changes as a response to a [Keypress](#) packet. Multiple *LCD* packets are sent for one LCD screen.

Note that no *LCD* packets are sent for the Status LCD until an [Enable Status LCD](#) packet has been received.

Note that no *LCD* packets are sent for a panel unless that panel has been specified to not have a direct connection in *OnSite*.

Printer

The data consists of:

Byte Number	Contents
1	19 = Printer
2	0...14 Sent to Printer at panel number 0 to 14
3	Length x (1 to 200)
4...x+3	ASCII characters to send to a Printer. Each character is system either a 'printable' code in the range <SPACE> (code 32) to '~' (code 126) or one of the special codes in the range 0 to 31 defined in the <i>OnSite</i> documentation. These special codes are used for centring, right-justification etc.

This packet is sent whenever a Panel Printer of the **IFAX** prints. It is intended to be used to implement a 'virtual' repeater panel. The packet does not include a complete printout, only a section. Multiple *Printer* packets are sent for one printout.

LED Status

The data consists of:

Byte Number	Contents
1	25 = LED Status
2	Supply LED
3	Fault LED
4	Disable LED
5	Warning LED
6	System Fault LED
7	Internal Fault Sounder
8	Internal Disable Sounder
9	Network Fault LED
10	Internal Alarm Sounder
11	Remote Signal Active LED
12	Remote Signal Disable / Fault LED
13	Sounders Active LED
14	Sounder Disable / Fault LED
15	Sounders Silenced LED
16	Fire LED
17	Test LED
18	Delays Enabled LED
19	LCD Backlight
20	Network Warning LED
21	Internal Warning Sounder

The values for each LED are:

- 0 = Off
- 1 = On
- 2 = Flashing (1 second on, 1 second off)
- 3 = Intermittent Flashing (0.25 second on, 59.75 seconds off)

This packet is transmitted whenever a valid session is in progress and the statuses of LEDs have changed. It is also sent immediately after a new session is started.

Note that there is no System On LED; this is assumed to be permanently on if the system is operating.

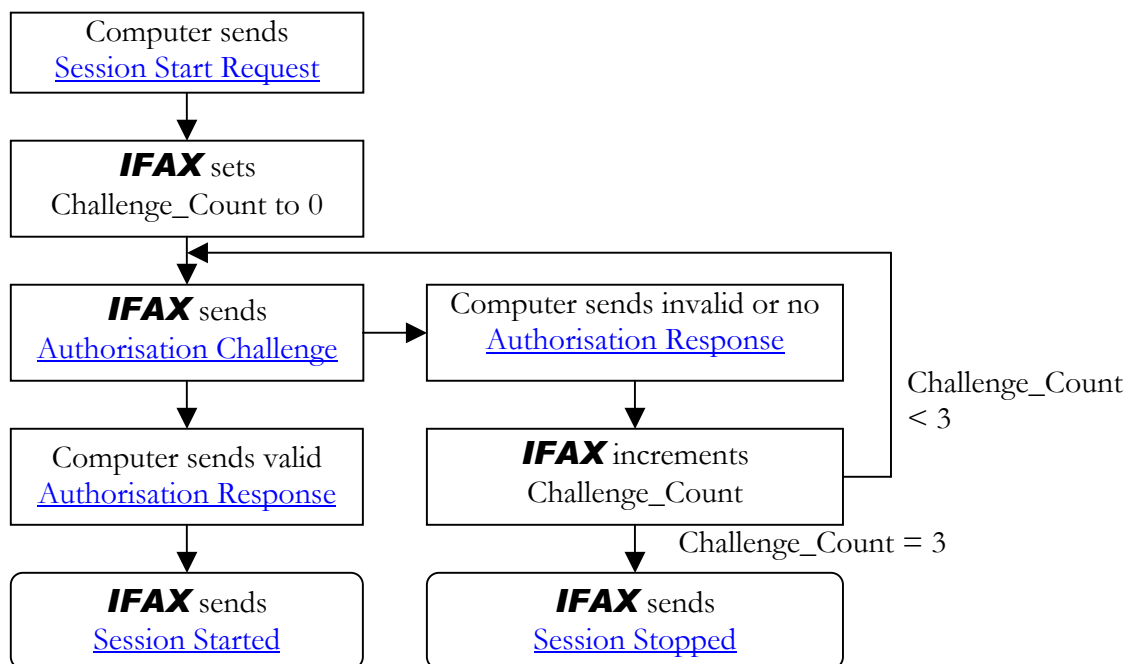
MESSAGE PACKETS SENT AUTOMATICALLY TO THE COMPUTER

Sessions and Authorisation

The IFAX authorises sessions, but does not authenticate users. It is the external computer's responsibility to do this, if necessary.

Starting a Session

The computer initiates a session of communication between the **IFAX** and the computer by sending a [Session Start Request](#) packet. The **IFAX** then authorises this session by using a challenge-response protocol¹.

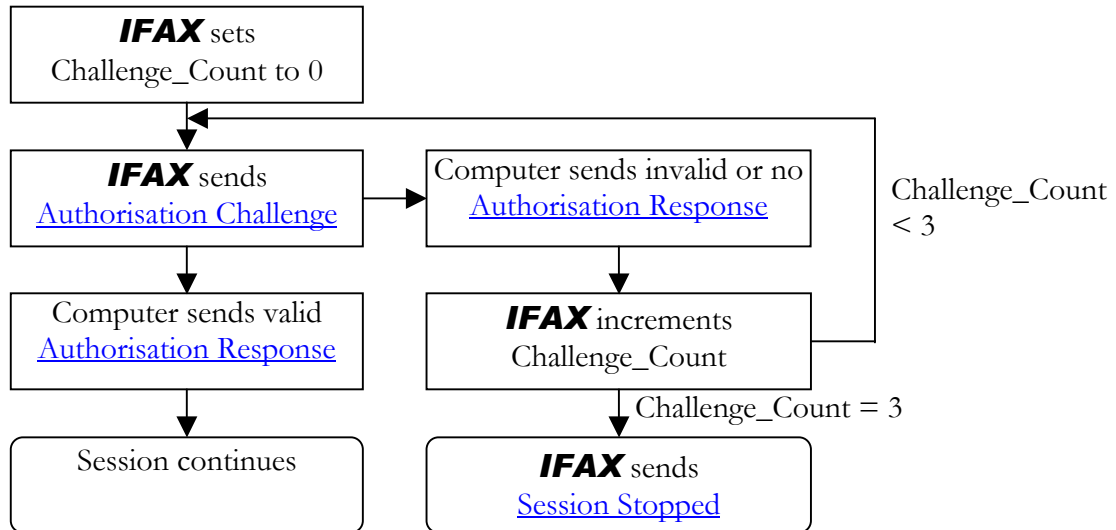


If the session is aborted then no further [Session Start Request](#) packets are accepted for two minutes.

¹ The details of the challenge-response protocol are described in a separate document.

During a Session

At regular intervals during the session, the **IFAX** confirms authorisation of the session by using the challenge-response protocol. During this confirmation process, all other packets from the computer are ignored.



If the session is aborted then no further [Session Start Request](#) packets are accepted for two minutes. The **IFAX** generates a [No Signal from External Computer](#) fault event.

Stopping a Session

A session ends when the computer sends a [Session Stop Request](#) packet.

The **IFAX** responds by sending a [Session Stopped](#) packet.

Meaning of Event Numbers

This section should be read in conjunction with the online Help system supplied with the *OnSite* program. Selecting **IFAX** *Events and Messages* from the *Contents* page of the Help system will access a detailed description of each event, how it is displayed on the **IFAX** and the parameters for the event.

Most event numbers have pre-determined meanings, but some event numbers are reserved for 'site-specific' events.

Some event numbers are used internally by the **IFAX** system and will never be transmitted as an event.

Some event numbers are currently undefined; these may be used at a later date, but they will conform to the same style.

Special 'procedures' may be configured to generate any of these events. This use of events is outside the scope of this document and should be documented as site-specific alterations to the standard Technical Manual by the person who writes the special 'procedures'.

In a networked system, the event record at each station records all events from all stations, except for network faults and fault recoveries (these are generated independently at each station). For more details, see the **IFAX** document *System Networking*.

Each event is initiated by a source. The initiator may be a device, loop, zone, panel, output or a 'user'. The user for an event may be:

- an operator at the main control panel (user number 1 to 32 and panel number 0)
- an operator at a repeater control unit (user number 1 to 32 and panel number 1 to 14)
- [panel number 15 is not used]
- an internal operation, such as sensor initiated (user number 33 and panel number 16)
- an external operation, from a program using **IFAXComms** on an external computer (user number 1 to 33 and panel number 17).
- an external operation, from *OnSite* running on an external computer (user number 33 and panel number 17).

The Device's Type (parameter 4) is that allocated by the *OnSite* program through definitions in the `IFXDEV.DAT` file.

MEANING OF EVENT NUMBERS

The Output's type or output group (parameter 1) is from the following table:

0	Undefined Output
1	Sounder
2	Beacon
3	Remote Signal
4	Auxiliary Relay (monitored)
5	Auxiliary relay (unmonitored)
6	Internal Sounder

Event Messages and *IFAX* States

In order to mirror the state of the *IFAX* system the computer should implement a set of state machines.

This chapter describes recommended state machines for devices, loops and outputs. It is possible to construct state machines for other *IFAX* objects.

It is not feasible to implement a zone state machine for *IFAX* systems as some devices in a zone may be in a **Device Alarm State**, while others are in a **Device Disabled State**, for example.

Each state machine is described below in some detail. Each state machine moves from one state to another on receipt of an appropriate event message¹. Note that some events affect several state machines.

These state machines do not include any transitions generated by 'site specific' events.

Device State Machine

The computer will need to implement a state machine for each device address (1 to 126), if it wishes to follow events at the device level. This includes all 126 addresses for each loop that is implemented, even if there is no device at a particular address (the address could generate an *Extra Sensor* event).

States: **Device Healthy**, **Device Fault**, **Device Alarm**, **Device Disabled**, **Device Test.**, **Device Warning**

Unless otherwise stated, the events only affect a particular device state machine if both the loop number (parameter 2) and the device address (parameter 3) match those for the state machine.

The loop-based events only affect a particular device state machine if the loop number (parameter 2) matches that of the state machine.

¹ These are usually [Real-time Event](#) packets, but the computer may use [Condition Response](#) packets to initialise the state machines.

EVENT MESSAGES AND IFAX STATES

The zone-based events only affect a particular device state machine if the zone number (parameter 1) matches the zone number of the device. This implies that the computer must contain a table showing the zone number for each device. The computer can obtain this information from the **IFAX** system by using the [Request Device Status](#) command for each device.

The state machine is mostly 'history-independent', in that any particular event will always cause a transition to a fixed state, regardless of the previous state. The exceptions to this are **Event 16: Configured with Sensors** and the **Re-enabled** events. The state machine starts in the **Device Healthy State**.

The following events will cause the Device state machine to enter the **Device Fault State** (if the parameters match those for the particular device):

- Event 67: Missing Sensor
- Event 68: Incorrect Sensor Type
- Event 69: Failed Sensor
- Event 70: Extra Sensor
- Event 82: Multiple Sensor Address
- Event 85: Sub-Circuit Fault at Sensor
- Event 86: Output Fault at Sensor
- Event 194: Device at Reserved Address
- Event 195: Incorrect Group Address

The following events will cause the Device state machine to enter the **Device Warning State** (if the parameters match those for the particular device):

- Event 71: Pre-Alarm
- Event 89: Device Test Failed
- Event 90: FIRE Warning
- Event 138: Sensor Class Change
- Event 191: Compensation Exceeded
- Event 192: Working Life Exceeded

The following events will cause the Device state machine to enter the **Device Alarm State** (if the parameters match those for the particular device):

- Event 128: Sensor Fire
- Event 131: Sensor Alarm
- Event 133: Sensor Room Alarm
- Event 134: Sensor Intruder
- Event 136: Sensor Bomb Alert
- Event 137: Sensor Evacuate
- Event 141: Sensor Alert

The following events will cause the Device state machine to enter the **Device Healthy State** (if the parameters match those for the particular device):

- Event 9: Sensor Healthy
- Event 11: Event Record Started
- Event 16: Configured with Sensors (*All device state machines that are not in **Device Disabled State***)

The following events will cause the Device state machine to enter the **Device Healthy State** (if the parameters match those for the particular device and the Device state machine is in the **Device Disabled State**):

- Event 48: Zone Re-enabled (*Parameter 1 must match zone of device*)
- Event 49: Sensor Re-enabled
- Event 50: Loop Re-enabled (*Parameter 2 must match loop number of device*)

The following event will cause the Device state machine of all devices to enter the **Device Healthy State**:

Event 0: System is Healthy

The following events will cause the Device state machine to enter the **Device Disabled State** (if the parameters match those for the particular device):

Event 112: Zone Disabled (*Parameter 1 must match zone of device*)

Event 113: Sensor Disabled

Event 114: Loop Disabled (*Parameter 2 must match loop number of device*)

The following event will cause the Device state machine to enter the **Device Test State** (if the parameters match those for the particular device):

Event 139: Sensor Test

Not all transitions between states will occur with the current **IFAX** implementation, but it is simpler to implement the state machine as if they will occur.

Loop State Machine

The computer will need to implement a state machine for each loop that is implemented (1 to 16 or less), if it wishes to follow events at the loop level.

States: **Loop Healthy**, **Loop Fault**, **Loop Disabled**.

The **Loop Fault** State does not indicate that devices on the loop are in the **Device Fault** State. The **Loop Disabled** State indicates that *all* devices on the loop are in the **Devices Disabled** State and that loop faults are disabled.

Unless otherwise stated, the events only affect a particular loop state machine if the loop number (parameter 2) matches that for the state machine.

The state machine is mostly 'history-independent', in that any particular event will always cause a transition to a fixed state, regardless of the previous state. The exceptions to this are **Event 16: Configured with Sensors** and **Event 50: Loop Re-enabled**. The state machine starts in the **Loop Healthy** State.

The following events will cause the Loop state machine to enter the **Loop Fault** State (if the parameters match those for the particular loop):

- Event 24: Interference Level**
- Event 72: Loop Short Circuit**
- Event 74: Loop Open Circuit**
- Event 77: Loop Driver Module Incompatible Firmware**
- Events 78 and 79: Loop Driver Module Hardware Failure**
- Event 81: Loop Driver Module Hardware Failure**
- Event 84: Communication Failure between Main Board and Loop Driver Module**
- Event 188: Loop Earth Fault**

The following events will cause the Loop state machine to enter the **Loop Healthy** State (if the parameters match those for the particular loop):

- Event 4: Loop Healthy**
- Event 11: Event Record Started**
- Event 16: Configured with Sensors (*All Loop state machines that are not in Loop Disabled State*)**

The following event will cause the Loop state machine to enter the **Loop Healthy** State (if the parameters match those for the particular loop and the Loop state machine is in the **Loop Disabled** State):

- Event 50: Loop Re-enabled**

The following event will cause the Loop state machine of all loops to enter the **Loop Healthy** State:

- Event 0: System is Healthy**

The following events will cause the Loop state machine to enter the **Loop Disabled** State (if the parameters match those for the particular loop):

- Event 114: Loop Disabled**

Output State Machine

The computer will need to implement a state machine for each output that is implemented (1 to 255), if it wishes to follow events at the output level.

Only outputs that are local to the control panel are able to generate fault events.

States: **Output Healthy**, **Output Fault**, **Output Disabled**.

Unless otherwise stated, the events only affect a particular output state machine if the output number (parameter 2) matches that for the state machine.

The state machine is mostly 'history-independent', in that any particular event will always cause a transition to a fixed state, regardless of the previous state. The exceptions to this are **Event 17: Powered Up**, **Event 99: Control System Fault** and the **Re-enabled** events. The state machine starts in the **Output Healthy State**.

The following events will cause the Output state machine to enter the **Output Fault State** (if the parameters match those for the particular output):

- Event 73: Output Short Circuit**
- Event 75: Output Open Circuit**
- Event 189: Output Earth Fault**

The following events will cause the Output state machine to enter the **Output Healthy State** (if the parameters match those for the particular output):

- Event 5: Output Healthy**
- Event 11: Event Record Started**
- Event 17: Powered Up (*Not in Output Disabled State*)**
- Event 99: Control System Fault (*Not in Output Disabled State*)**

The following events will cause the Output state machine to enter the **Output Healthy State** (if the parameters match those for the particular output and the Output state machine is in the **Output Disabled State**):

- Event 51: Output Re-enabled**
- Event 52: Output Group Re-enabled (*Output type is defined as in the group*)**

The following event will cause the Output state machine of all outputs to enter the **Output Healthy State**:

- Event 0: System is Healthy**

The following events will cause the Output state machine to enter the **Output Disabled State** (if the parameters match those for the particular output):

- Event 115: Output Disabled**
- Event 116: Output Group Disabled (*Output type is defined as in the group*)**

EVENT MESSAGES AND IFAX STATES

OnSite Program

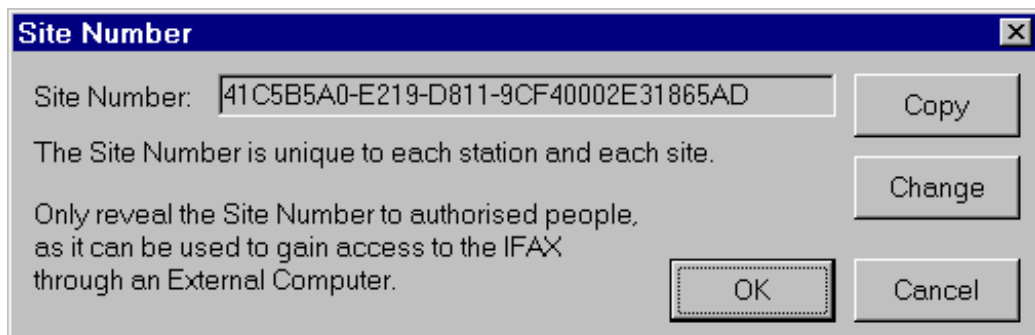
Each **IFAX** system has site-specific configuration data that is specified using the *OnSite* computer program. Some of this configuration data affects the **IFAXComms** protocol; this is described below.

Help

This document is designed to be read in conjunction with the online Help System supplied with the *OnSite* computer program. It can be accessed by selecting Contents from the Help menu of the *OnSite* program or by pressing the F1 key at any time during the program.

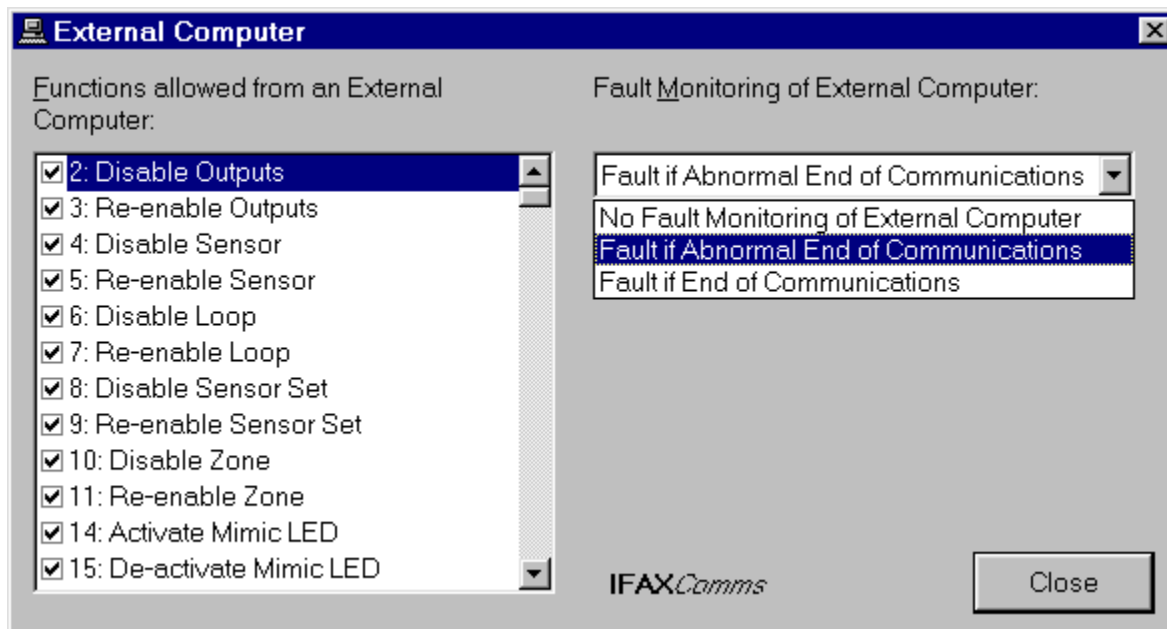
Site Number

The Site Number that is required to [authorise](#) a session can be obtained from the Site Number dialogue box. This is displayed when the *Site Number* command button is clicked in the *General* configuration window.



How the IFAX can Limit the External Computer

By default, *OnSite* allows all [commands](#) from an External Computer. However, it may be required to limit what the External Computer can do. In this case, the *External Computer* configuration window is used.



How the IFAX can Monitor the External Computer

The IFAX can monitor the connection between itself and the External Computer in one of several ways:

- No Fault Monitoring
- Fault if Abnormal End of Communications

- Fault if End of Communications

The IFAX does not monitor the link.
 The IFAX reports a [No Signal from External Computer](#) fault if the authorisation challenge / response protocol fails after the first valid authorisation.
 The IFAX reports a [No Signal from External Computer](#) fault if the authorisation challenge / response protocol fails after the first valid authorisation or if the External Computer sends a [Session Stop Request](#)¹.

¹ The session is still stopped in this case.

Examples

Device entering and leaving an Alarm condition

1. Device at address 23 on loop 1, of type 3, in zone 4, enters an alarm condition at 16:24:53 on 28th January 1998. Non-networked system.
2. The following [Real-time Event](#) packet is transmitted to the computer:

Byte Number	Contents
1	1 = Real-time Event
2	128 = Fire
3...4	4 = Zone 4
5	1 = Loop 1
6	23 = Device address 23
7	3 = Device type 3
8	0
9	0
10	Undocumented
11	18 = 1998
12	112 = Hour 16, Day (low) 4
13	3 = Day (high) 3. Day of year = 3 (high) * 8 + 4 (low) = 28
14	24
15	53

3. At the computer, the [Device State Machine](#) for Loop 1 Address 23 enters the **Device Alarm State**.
4. User 17 at repeater panel 5 silences the sounders.

EXAMPLES

5. The following [Real-time Event](#) packet is transmitted to the computer:

Byte Number	Contents
1	1 = Real-time Event
2	14 = <i>Sounder Silence</i> event 14
3...4	0
5	0
6	0
7	5 = Panel 5
8	0
9	0
10	17 = User 17
11	18 = 1998
12	112 = Hour 16, Day (low) 4
13	3 = Day (high) 3. Day of year = 3 (high) * 8 + 4 (low) = 28
14	29
15	4

6. User 17 at repeater panel 5 activates a system reset.
7. The following [Real-time Event](#) packet is transmitted to the computer:

Byte Number	Contents
1	1 = Real-time Event
2	13 = System Reset
3...4	0
5	0
6	0
7	5 = Panel 5
8	0
9	0
10	17 = User 17
11	18 = 1998
12	112 = Hour 16, Day (low) 4
13	3 = Day (high) 3. Day of year = 3 (high) * 8 + 4 (low) = 28
14	29
15	6

8. Device at Loop 1 Address 23 returns to a healthy condition.

9. The following [Real-time Event](#) packet is transmitted to the computer:

Byte Number	Contents
1	1 = Real-time Event
2	9 = Device Healthy
3...4	4 = Zone 4
5	1 = Loop 1
6	23 = Device address 23
7	3 = Device type 3
8	0
9	0
10	Undocumented
11	18 = 1998
12	112 = Hour 16, Day (low) 4
13	3 = Day (high) 3. Day of year = 3 (high) * 8 + 4 (low)
14	29
15	13

10. At the computer, the [Device State Machine](#) for Loop 1 Address 23 enters the **Device Healthy** State.

Simple *IFAXComms* Implementation

A simple *IFAXComms* implementation might only be interested in the [Real-time Event](#) packets.

In this case, the computer should send a [Session Start Request](#) packet when it first starts up. The computer should respond to [Authorisation Challenge](#) packets with [Authorisation Response](#) packets.

The computer should read and process [Real-time Event](#) packets. It can ignore all other packets, but it will need to [Acknowledge](#) them with an <ACK>.

When the computer wants to close down, it should send a [Session Stop Request](#) packet.

In order to synchronise the external computer with the *IFAX*, after the [Session Started](#) packet, the computer could send [Request Condition](#) command packets for each condition type and treat the [Condition Response](#) packets in the same way as [Real-time Event](#) packets.

EXAMPLES



Appendix

Other *IFAX* Technical Publications

Many other technical publications are available from the Multi Alarm website:
<http://www.multialarm.co.uk/>.

Relevant Standards

EIA-232-D-1986	Interface Between Data Terminal Equipment and Data Circuit-Terminating Equipment Employing Serial Binary Data Interchange.
ISO 646: 1973	Information processing - ISO 7-bit coded character set for information interchange.
ISO 1177: 1985 (E)	Information processing - Character structure for start-stop and synchronous character oriented transmission. (Also known as BS 4505: Part 2 : 1990).
ISO 2110: 1989 (E)	Information technology - Data communication - 25-pole DTE/DCE interface connector and contact number assignments. (Also known as BS ISO 2110: 1989).
CCITT Recommendation V.24: 1989	List of definitions for interchange circuits between data terminal equipment and data circuit-terminating equipment.
CCITT Recommendation V.28: 1989	Electrical characteristics for unbalanced double-current interchange circuits.

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