

Confidea

Wired Conference System



Installation and User Manual

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Section 1 – General Information

1. Copyright Statement

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2. Camera Control Protocol

2.1. Communication

The central units command port (COM2) can send out command to a camera control system. The commands are described below.

Connection between the Confidea CU and the control system is established with a RS232 connection. The communications port *COM2* operates at a speed of 19200 bits per second.

Below a complete overview of the settings of the communications port for the camera control:

Bits per second:	19200
Data bits:	8
Parity:	None
Stop bits:	1
Flow control:	None

2.2. Commands

All commands sent by the CU start with a '%' sign. The last character is a character which states the end of the transmission. Just before the end of transmission character, there are four characters within the command sent to the camera control which account for the CRC checksum. The CRC checksum is in uppercase hexadecimal form while all other numbers are in decimal form. The protocol is described as follows:

STX '%' data CRC ETX

With:

STX = start transmit char (0x25 = '%')

ETX = end transmit char (0x0D)

CRC = 16 bit sum of the ASCII characters between STX and CRC

Notation to explain the messages sent. All separate entities in a message are represented between curly brackets. If the contents of such an entity is also between quotes (' ') then this means that this is a literal string. Otherwise it describes the logical entity. A logical entity will also contain a number between brackets. This number states how many characters the entity will exist of. If the subtext ₁₊ is attached to the entity between curly brackets, then this means that one or more occurrences of this entity may occur.

Some examples to clarify.

Whenever a microphone of a delegate or the microphone of the president is activated, then a command is sent out. Whenever an active microphone is deactivated, another command is sent to the camera control.

1. The microphone of the president is activated:

{'%'}{'P'}{Microphone number (4)} {CRC (4)}

- 1. The microphone of the president is deactivated:
- {'%'}{'p'}{Microphone number (4)} {CRC (4)}
- 2. The microphone of a delegate is activated:
- {'%'}{'M'}{Microphone number (4)} {CRC (4)}
- 3. The microphone of a delegate is deactivated:

{'%'}{'m'}{Microphone number (4)} {CRC (4)}

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- The microphone of a delegate is set in request:
 {'%'}{'D'}{Microphone number (4)} {CRC (4)}{ETX}
- 5. The request of the delegate's microphone is cancelled:
 - {'%'}{'l'}{Microphone number (4)} {CRC (4)}{ETX}

The remaining commands are control commands.

First microphone has been activated and the camera control should become active.

{'%'}{'1'}{'R'}{'00'}{{CRC (4)}

All active microphones are deactivated and the camera control should reset itself to a neutral starting position.

{'%' }{'1'}{'r'}{'00'}{CRC (4)}

At a time-interval of around 5 seconds a synchronization message is sent to the camera control. The message contains all the numbers of the active microphones or the number 0 to stipulate that there are no microphones active.

{'%'}{'S'}{Microphone Number (4)}₁₊{CRC (4)}

All active microphones are deactivated simultaneously.

{'%'}{'V'}{'0000'}{CRC (4)}

2.3. Examples

If the president microphone is activated, and the president microphone has the number '0001' then the following message is sent: %P00010111

When the president microphone is deactivated, then the following message is sent: %p00010131

If a delegate microphone is activated, and that delegate microphone has the number '0003' then the following message is sent: %M00030110 When the delegate microphone is deactivated, then the following message is sent: %m00030130

Suppose now that the delegate microphone with number '0003' is active. On a synchronization check the synchronization message will look like this: %S00030116

Suppose now that the delegate microphones with number '0002' and '0004' are also active. On a synchronization check the synchronization message will look like this: %000300020004029C

When no microphones are active, then the following synchronization will be received: %S00000113

When the camera control system should reset itself to its start position, then the following message will be received: %1r000052

When all microphones are deactivated simultaneously, then the following message is received: %V00000116

3. Control Panel Protocol

3.1. Communication

The Confidea system can be controlled by control systems such as AMX, Crestron, ... The commands which the control panel should understand will be described shortly.

Connection between the Confidea CU and the control system is established with a RS232 connection. The communications port *COM2* operates at a speed of 19200 bits per second.

Below a complete overview of the settings of the communications port for the camera control:

Bits per second:	19200
Data bits:	8
Parity:	None
Stop bits:	1
Flow control:	None

3.2. Commands

All commands sent by the CU start with a '%' sign. The last character is a character which states the end of the transmission. Just before the end of transmission character, there are four characters within the command sent to the camera control which account for the CRC checksum. The CRC checksum is in uppercase hexadecimal form while all other numbers are in decimal form.

The protocol is described as follows:

STX '%' data CRC ETX

With:

STX = start transmit char (0x25 = '%')

ETX = end transmit char (0x0D)

CRC = 16 bit sum of the ASCII characters between STX and CRC

We will adopt a certain notation to explain the messages sent. All separate entities in a message are represented between curly brackets. If the contents of such an entity is also between quotes (' ') then this means that this is a literal string. Otherwise it describes the logical entity. A logical entity will also contain a number between brackets. This number states how many characters the entity will exist of. If the subtext $_{1+}$ is attached to the entity between curly brackets, then this means that one or more occurrences of this entity may occur.

Maybe this notation seems a little hard to comprehend at first, but some examples should clarify them.

Whenever a microphone of a delegate or the microphone of the president is activated, then a command is sent to the control panel. Whenever an active microphone is deactivated, another command is sent to the control panel. This is also valid when a microphone goes into request.

The control panel is also able to send commands to the central unit. One command is sent to activate/deactivate a microphone. There is also a command that can be sent to the central unit if you want to reboot the control panel. Also the test generator can be activated or deactivated. Other commands allows you to alter the volume and conference mode.

We will divide the discussion of the commands into two categories. The first category describes the commands coming from the central unit and going to the control panel and the second category describes the commands coming from the control panel and going to the central unit.

The Commands sent by the central unit and received by the control panel:

1. A microphone is activated:

{'%'}{'1'}{'L'}{Microphone number (4)} {CRC (4)}

- 2. A microphone is deactivated:
- {'%'}{'1'}{Microphone number (4)} {CRC (4)}
- 3. A microphone goes into request:
- ${'\%'}{(1')}{(D')}{Microphone number (4)} {CRC (4)}$
- 4. All microphone should be reset:

{'%'}{'E'}{'00'} {CRC (4)}

The commands sent by the control panel and received by the central unit:

1. Activate/deactivate a microphone with number ... :

 ${'\%'}{'1'}{'T'}{Microphone number (4)} {CRC (4)}$

2. Restart the control panel and get information about the microphones to reinitialize the control panel:

{'%'}{'1'}{'V'}{CRC (4)}

 Set the volume and tone settings for the delegate's loudspeaker. The POTVAL value represents the volume and must be a number between 0 and 12. Also the low, mid and high values must be numbers between 0 and 12.

{'%'}{'1'}{'X'}{POTVAL(2)}{High(2)}{Mid(2)}{Low(2)} {CRC (4)}

4. Change the operating mode. In the table the MODE number is given for each operating mode.

MODE	Operating Mode	MODE	Operating Mode
00	No Request	05	Group 1
01	With Request	06	Group 2
02	With Request No Clear	07	Group 3
03	Direct Access	08	Group 4
04	FIFO	09	Override

{'%'}{'1'}{'U'}{MODE(2)} {CRC (4)}

5. Turn ON the test generator:

{'%'}{'1'}{'v'}{CRC (4)}

6. Turn OFF the test generator:

{'%'}{('1'}{(w'}{CRC (4)}

7. Increment the volume for the delegate's loudspeaker:

{'%'}{'1'}{'x'}{'0'}{'001'}{CRC (4)}

8. Decrement the volume for the delegate's loudspeaker:

 ${'\%'}{(1')}{(x')}{(002')}{CRC (4)}$

9. Toggle the status for Auxiliary Input port 1

 $\{`\%'\}\{`1'\}\{`x'\}\{`0'\}\{`003'\}\{CRC\ (4)\}$

10. Toggle the status for Auxiliary Input port 2

{'%'}{'1'}{'x'}{'004'}{CRC (4)}

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Toggle the status for Auxiliary Output port 1
 {'%'}{'1'}{'x'}{'o'}{(005'}{CRC (4)}

Toggle the status for Auxiliary Output port 2
 {'%'}{'1'}{'x'}{'006'}{CRC (4)}

13. Toggle the status for Auxiliary Output port 3{'%'}{'1'}{'x'}{'o'}{(007'}{CRC (4)}

14. Toggle the status for Auxiliary Output port 4

{'%'}{'1'}{'x'}{'0'}{'008'}{CRC (4)}

15. Toggle the status for Auxiliary Output port 5

{'%'}{'1'}{'x'}{'009'}{CRC (4)}

16. Toggle the status for Auxiliary Output port 6

```
{'%'}{'1'}{'x'}{'0'}{'010'}{CRC (4)}
```

Any other commands sent over the serial channel from the central unit to the control panel should be ignored.

3.3. Examples

If a microphone is activated, and the microphone has the number '0001' then the following message is sent to the control panel from the central unit: %1L0001013E

If the same microphone is deactivated, then the following message is sent to the control panel from the central unit: %110001015E

If the microphone with number '0002' goes into request mode, then the following message is sent to the control panel from the central unit: %1D00020137

When all microphones should be turned of, then the following command is sent to the control panel from the central unit: %1E0000D6

When the control panel wants the central unit to activate a microphone, for instance the microphone with number '0002', then the following command is sent: %1T00020147

When the control panel wants to restart the control panel and wants to receive the correct information about the active microphones and the microphones on request, then the following command is sent to the central unit: %1V0087

When the control panel wants to change the conference mode then the following command is sent to the central unit: %1U0400EA

When the control panel wants to mute the loudspeaker of all units the following command is sent to the central unit: %1X00060606021B.

The default volume setting can be set by sending the following command to the central unit: %1X060606060221