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SHURE SW6000 ECA External Control Application User Manual

Contents

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SHURE
LEGENDARY
PERFORMANCE

SW 6000 Conference Management Software, Version 6.3
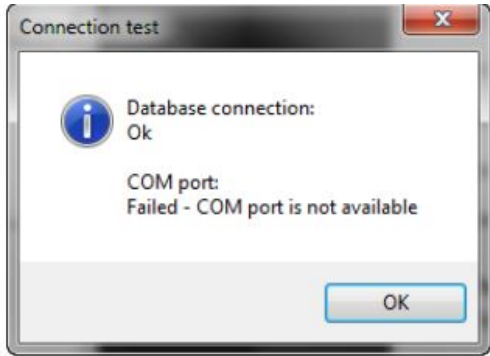
SW 6000

Installation Manual

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Installation Manual SW-6000 ver 6.3.docx
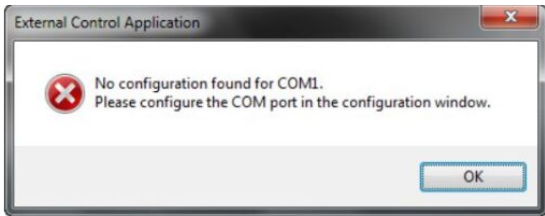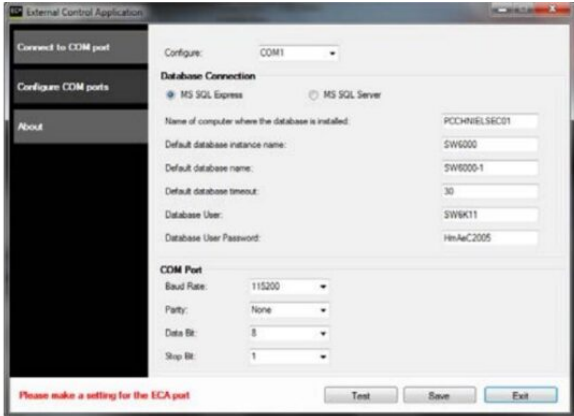
Introduction
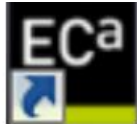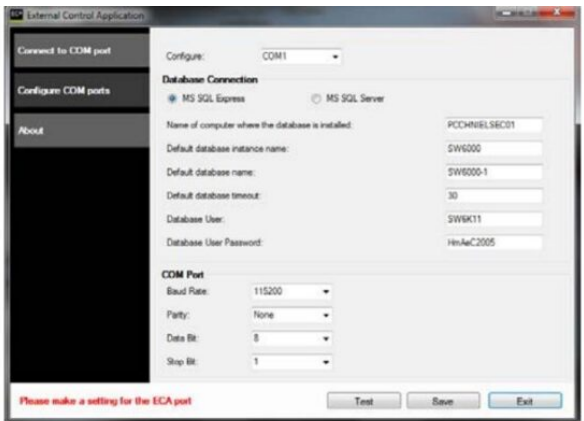
This document describes the RS232 protocol for communication between customer applications and SW6000 Conference Management Software by use of the ECA External Control Application. Customer applications can include but are not limited to AMX or Crestron room control systems, PCs or microcontroller-based applications e.g. for button mimics. The RS232 protocol is an easy-to-use protocol. For installation of the ECA application, please refer to the 'Installation Manual SW6000'. The ECA application is included in the SW6000 Conference Management Software (basic) and no separate license is needed.

Configuring the ECA

#	Description	Comment or picture
1.	Start the ECA by selecting the ECA shortcut on the desktop	ECa

#	Description	Comment or picture
2.	A message is shown, that the ECA configuration is not found. Select 'OK'	
3.	Select the Configure COM port Insert the correct parameters for the ECA application: Select COM port from 1 to 8 that will be used The COM ports, which are configured, will be highlighted. Insert the Name of the Computer, where the database is installed Insert the 'Default Database name' Insert the COM Port parameters. Set Baud Rate to fit with connected equipment. Handshake is not used with ECA communication.	
4.	Select 'Test'. Note: If the test fails, change the setting which failed. If the saved configuration connects to another Com port than selected during installation, the command line parameter for the ECA short must be changed to the configured port. Please refer to next point. Select 'Save' Select 'Exit'	

#	Description	Comment or picture

5.	If the Com port must be changed in the ECA short cut Right-click the ECA shortcut Select Properties Select the 'Shortcut' tab Change COM port number in the 'Target' line Select 'Apply' Select 'OK'	
6.	Start the ECA by selecting the ECA shortcut on the desktop	
7.	A message is shown, that the ECA configuration is not found. Select OK	
8.	Select the Configure COM port Insert the correct parameters for the ECA application: Select COM port from 1 to 8 that will be used The COM ports, which are configured, will be highlighted. Insert the Name of the Computer, where the database is installed Insert the 'Default Database name' Insert the COM Port parameters. Set Baud Rate to fit with connected equipment. Handshake is not used with ECA communication.	

#	Description	Comment or picture
9.	Select 'Test'. **Note:** If the test fails, change the setting which failed. If the saved configuration connects to another Com port than selected during installation, the command line parameter for the ECA short must be changed to the configured port. Please refer to next point. Select 'Save' Select 'Exit'	*Connection test* Database connection: Ok COM port: Failed - COM port is not available OK
10.	If the Com port must be changed in the ECA short cut Right select the ECA shortcut Select Properties Select the 'Shortcut' tab Change COM port number in the 'Target' line Select 'Apply' Select 'OK'	*External Control Application COM2 Properties* General	Shortcut	Compatibility	Security External Control Application COM2 Target type: Application Target location: External Control Application Target: i:\External Control Application\prjECA.exe" COM2 Start in: "C:\Program Files\DIS\External Control Applicatio Shortcut key: None Run: Normal window Comment: Find Target... Change Icon... Advanced... OK Cancel Apply

Command-line parameters for the ECA

- Show a communication window (debug) when the ECA is started. Don't use this
- the parameter in normal use.
- Specifies the COM port to use. COM1 to COM8 are valid entries. When the COM port
- is specified, the 'Select COM port' popup is disabled.

STARTUPDELAYX

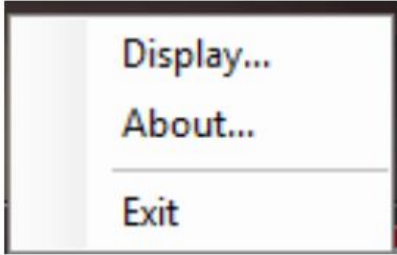Specifies a delay that the application will wait before initializing completely. The delay x, is given in milliseconds. This is useful if the ECA shortcut is placed in the Start-up folder in windows, giving windows time to start services related to sQL, before the ECA starts communicating with the sQL server

DELAY

Please refer to the section RS 232 Commands' for details.

Starting the ECA

#	Description	Comment or picture
1.	Select the ECA shortcut to start the application	
2.	When started an ECA icon is shown in the task bar. If debugging is needed right select on the ECA icon and s elect display	Display... About... Exit

RS 232 Commands

Delay command line parameter

AS it has been experienced that external RS232 parsers can have difficulties in handling commands sent in quick succession its possible to introduce a minimum dead-time Between commands from the ELA. I introduce this delay using the following command line parameter on the ECA application DELAY where x has to be à number specifying the delay in milliseconds. his delay must be an integer greater than 0 and smaller than 2000 – corresponding to 2 seconds. Important: Introducing this delay has a severe impact on the number of messages that can be Leransmited over the KS232 interface – SO iE should preferably be avoided.

Commands from ECA to external RS232 device

The commands sent from the ELA to an external RS232 device àre described here. Ine commands are all to key commands and see the response. This approach has been used to facilitate testing and development by in customers.

1. **<Seat no>** 1-5 AST bytes with the seat number this is equivalent to the content in the seat table for identifying the microphone e.g. "50001" or "123

2. <CHKSUM> 2 ASCII characters representing the hexadecimal checksum calculated over the command and seat

   The checkSum shall be calculated as shown in this example with the command TS1234:ID

   1. S=83 (ASCII value)
   2. 1'=49 (ASCil value).
   3. 2=50 (ASCl value
   4. 3=51 (ASCII value)
   5. 4=52 (ASCII value)

The sum is calculated

sum- 83+49+50+51+52=2855

Modulus is calculated

285 mod 256 29

Hex values is calculated:

29- 1D

The two characters are used in the command as the checksum.

<CR> Carriage return – 0D= 13

Command direction is identified using arrows – from ECA to EXT and from EXT to ECA, as well as bothways.

Microphone On (ECA >EXT)

IS<Seat no>:<CHKSUM> <CR> Sent when the microphone is switched on.

Microphone in speak (ECA -EXT

Sedt no>:<uHRSUM><CR> Sent as a response to a microphone status request message to indicate that the microphone is in speak.

Microphone Off (ECA -> EXT)

O<Seat n0>: <CHKSUM> <CR> Sent when a microphone in speak is switched off.

Request On (ECA E7 EXI)

ReSeat no>i <CHKSUM> <CR> Sent when microphone is set into request.

Microphone in request (ECA -> EXI)

Ir< Seat no0>:<CHKSUM> <CR> sent as a response to a microphone status request message to indicate that the microphone is in request.

Request Off (ECAEXT)

IN<Seat no>: <CHKSUM> <CR> Sent when the microphone is switched off from request.

Max Total Speakers (ECA EXT)

cmax spK>; <LHKSUM<CR Maximum number of speakers allowed to speak. <max spk> Can be set to to3

Max Delegate Speakers (ECAE9 EX)

Kemax spk> i<CHKSUM> <CR> Maximum number of delegates allowed to speak. cmax spk> Can be set to to "8

Max Requests (ECAEXT)

Q<max req>:<CHKSUM> <CR> Maximum number of delegates allowed in the request list. <max req> Can be set to "0" to "255".

System Operation Mode (ECA EXT)

Emode>:<CHKSUM><CR> System operation mode possible values are: "AUTO", "FIFO", "MANU", "vox", "AUTO-REP", "MANU-REP

System interruptabilty (ELA EI

emode> i<CHKSUM><CR> System operation mode possible values are: "NONE", "LOWER", and "SAMELOWER"

Speaking Too Fast (ECA 9 EX)

P<state>:<CHKSUM> <CR> Speaking too tast indicates that speakers should slow down to enable interpreters to keep up. <state> may be "o or 1, where "i indicates that currently the speaking too fast condition is active.

Voting Start/stop (ECA EXI)

IV<start-stop>: <CHKSUM> <CR> Command is used for starting and stopping a voting session, as well as indicating whether a votin9 start-stop> may be o or T, where 0 indicates the voting session is stopped and T indicates the voing sesS1On is started (or running) The type of voting session when started from ECA, is the default one.

Status done (ECA EXT)

D<CR> Sent to indicate that the complete status of the microphone system has been transmitted.

All microphones off (ECA EXT)

Sent to indicate that the number of microphones on is zero. This command is only sent when the last Ohserve that sending mand is not enabled as default to enable this command use the commandline parameter"-ALLMICOFF" on the CUI application.

All replies off (ECA > EXT)

ALLREPLYOFF<CR> Sent when the All Reply Off button is activated in the CuUA. Observe that the command is send when a conference is started or stopped.

User Validation request (ECA >EXT)

U<User id>S<Seat id>:<CHKSUM> <CR> Sent to request external validation or user identified by <User d> using externai validation equipment e.g. fingerprint reader identified by <Seat id>.

Alert Status change (ECA -> EXT)

IA<status>:<CHKSUM> <CR> Send when an alert is issued or cancelled. <status> may be "0 or1, where 1

indicates the alert is active.

Speech Time Alam (ECA—EXT)

L<status>S<Seat no>:<CHKSUM> <CR>
Sent to external units to indicate the current status of speech time for the speaker seat (podiums). status may be one or the following values: O-no alarm or expiration; issued only after another value was indicated in a previous Lfor this seat, and then the microphone was switched off. It arrives before the corresponding "O notification. arm (there was one set, otherwise this value is SKIpped). When a microphone is closed, alam state is always reverted to value 0.
Note- this command is only sent for seats of Podium types.

Commands from external RS232 to ECA

The commands issued to control microphones are identical to the commands that relay status from the ECA. E.g. to set microphone seat no 7 on the command IS7:8A<CR>" is issued the same command will return from the ECA to reflect that the microphone has actually been switched on.
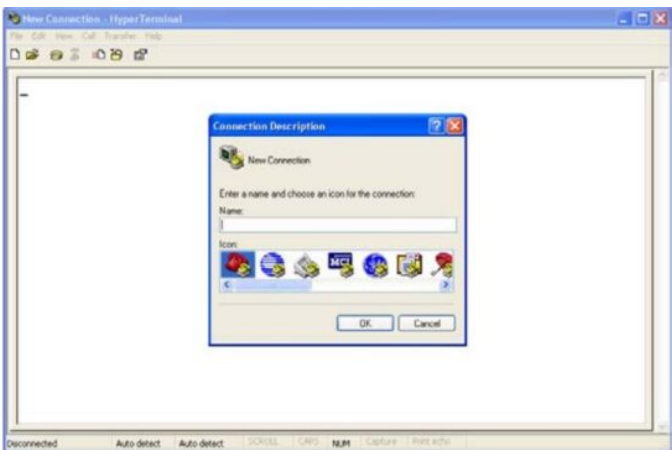
Request System Status (ECA EXT)

?D<CR>

Sending this command will cause the ECA to transmit the current status of the system as a series of commands for max speakers, max total speakers, max requests, operation mode and a series of microphone in speak and microphone in request commands. When the ECA has transmitted all pending status information the Status done command is received. Observe that activity during a status request may cause e.g. speak on commands to be transmitted before all microphones in speak commands have been issued this should not cause problems as the two commands use a different syntax.

User Validation response (ECA—EXT)

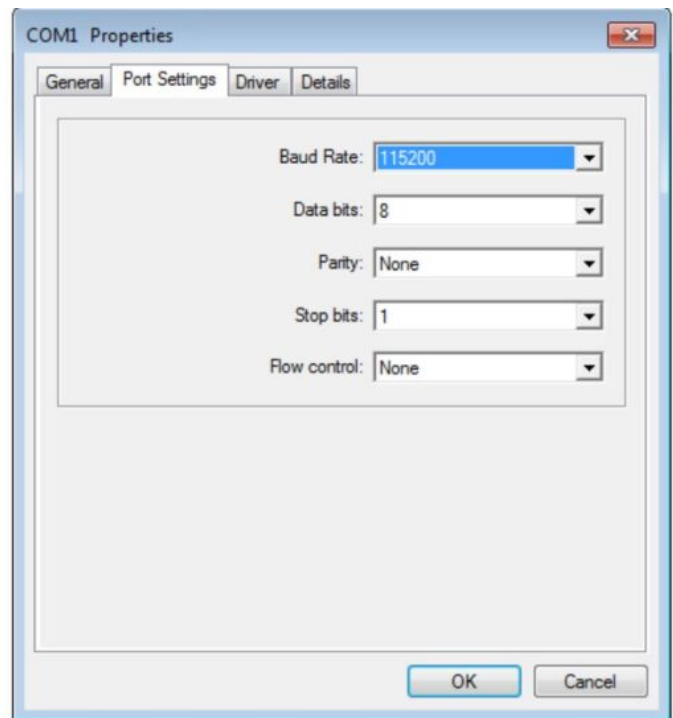!U<User id>S<Seat id>R"<Validation response>":<CHKSUM> <CR>

1. This command should only be sent as a response to a user validation request. <User id> and <Seat id> should be identical to what was included in the user validation request. <Validation response> should have one of the following values:
2. "Verified – used when external verification equipment is able to verify the presence of the user at the specified seat
3. "Failed" is used when external verification equipment evaluates the user and the evaluation is negative e.g. wrong fingerprint.
4. Seat unknown" – used when external verification equipment has no entries for this seat.
5. "User unknown" is used when external verification equipment has no entries for this user.
6. External validation systems may use other strings up to 25 characters long to describe other error
7. situations string must not include character <">.

Get familiar with the RS232 commands to/trom ECA

#	Description	Comment or picture
1	Connect the PC with the ECA installation to a second PC with a null-modem cable.	
2	Start the Microsoft Terminal program on both PCs from Start/Programs/Accessories/ Communications/HyperTerminal.	
3	Enter a name and choose an icon for the connection.	
4	Select the proper COM port.	

#	Description	Comment or picture

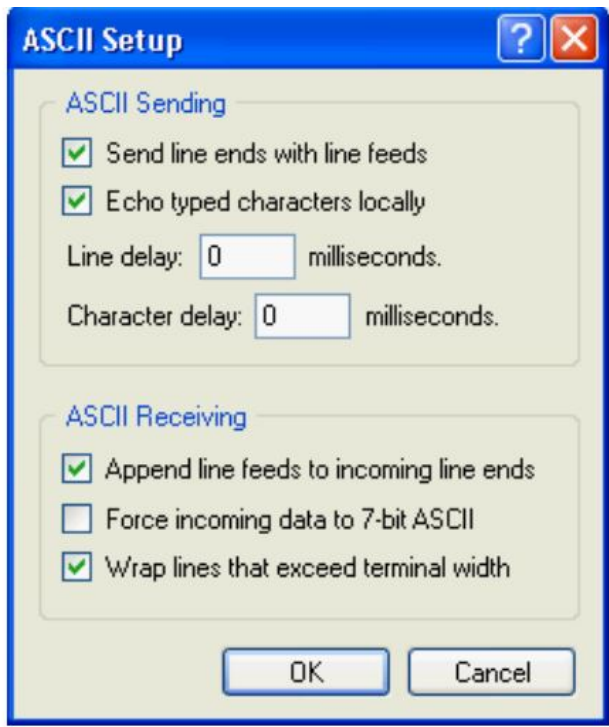|		
5	Configure as shown to the right. Press OK.	**COM1 Properties** General | Port Settings | Driver | Details Baud Rate: 115200 Data bits: 8 Parity: None Stop bits: 1 Flow control: None OK Cancel
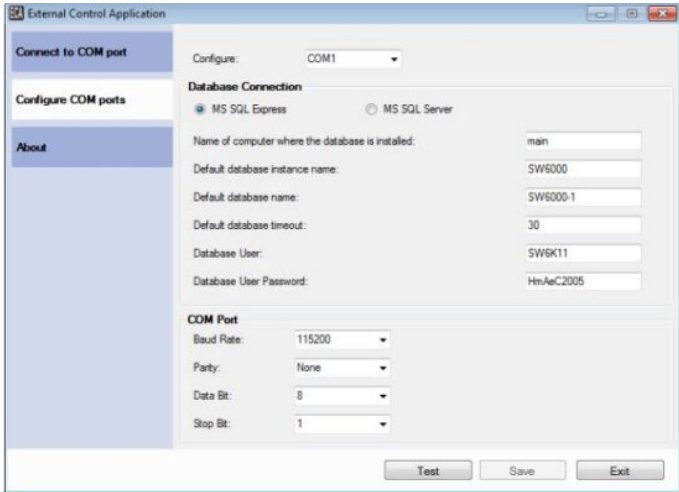
6	Open Properties in the File menu. Selects Settings tab. Press ASCII Setup.	**DIS Properties** [?] [X] Connect To | Settings Function, arrow, and ctrl keys act as ⦿ Terminal keys ○ Windows keys Backspace key sends ⦿ Ctrl+H ○ Del ○ Ctrl+H, Space, Ctrl+H Emulation: Auto detect [▼] Terminal Setup... Telnet terminal ID: ANSI Backscroll buffer lines: 500 [▲▼] ☐ Play sound when connecting or disconnecting Input Translation... ASCII Setup... OK Cancel
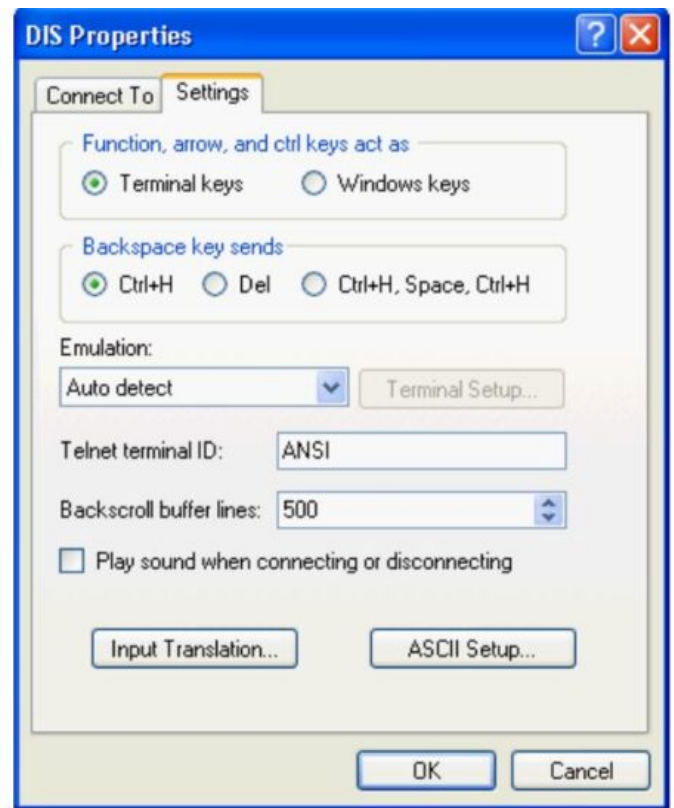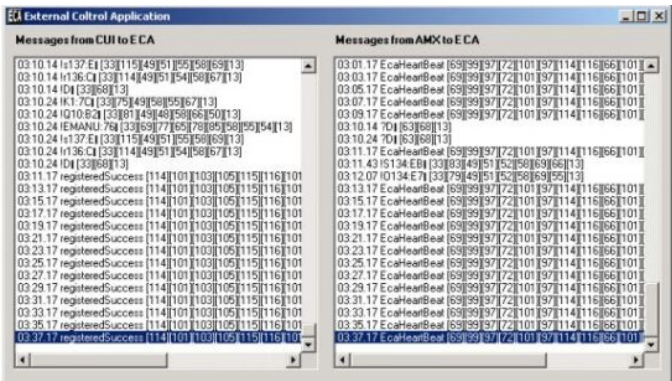
#	Description	Comment or picture
7	Set the ACSII setup as shown to the right on both PCs.	
8	Check that communication is working between the two PCs. If this is not the case, one of the settings is incorrect or the cable is defective.	
9	When the communication is working close the HyperTerminal program on the PC with the ECA installation.	
10	Configure the ECA application as explained in the Installation Manual.	

External Control Application COM1 Properties

General | **Shortcut** | Compatibility | Security

External Control Application COM1

Target type: Application

Target location: External Control Application

Target: xternal Control Application\prjECA.exe" -COM1 -w

Start in: "C:\Program Files\DIS\External Control Applicatio

Shortcut key: None

Run: Normal window

Comment:

[Find Target...] [Change Icon...] [Advanced...]

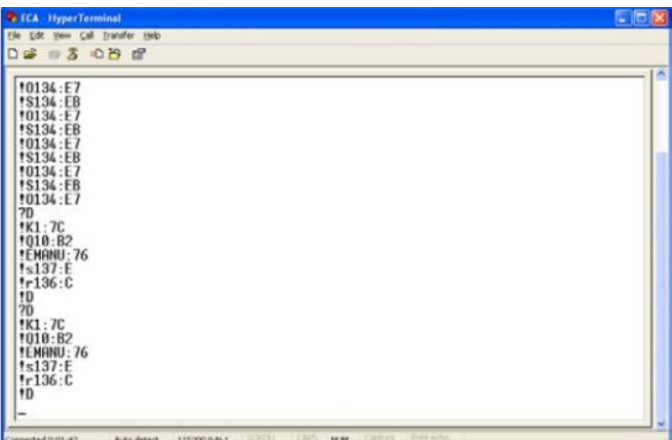[OK] [Cancel] [Apply]

| 1 1 | Make a shortcut to the ECA, select properties and set the command line parameters as shown if you are using COM1. If not type in the COM port in use.

 The –W parameter brings up a window.

 Remember to make a space between the two commands. |
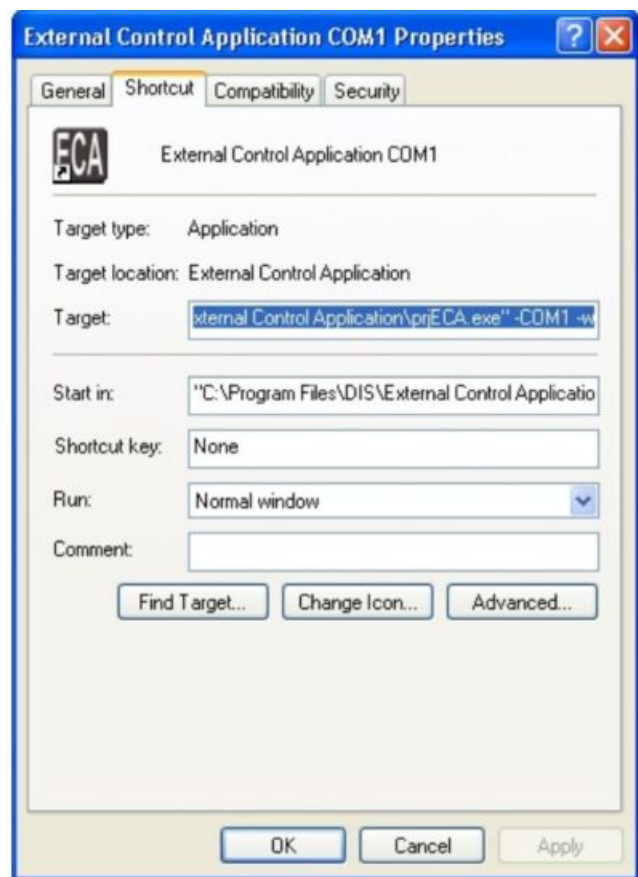
#	Description	Comment or picture
1 2	Start the ECA application using the short cut.	

#	Description	Comment or picture
1 3	Check that you receive messages in the terminal window and check that you can send messages.	

This section describes how to test the ECA commands using a second PC and Microsoft Terminal program.

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Documents / Resources

SHURE SW6000 ECA External Control Application [pdf] User Manual
SW6000, ECA External Control Application

References

- **Shure: Microphones, Wireless microphones, in-ear monitoring, earphones, headphones**