SHURE®

LEGENDARY
PERFORMANCE™

Conferencing and Discussion Systems

CS 6340 F Channel Selectors

USER GUIDE

User Manual CS 6340F rev A.docx

Table of Contents

Important

Installation precautions

Do not install the unit in a location near heat sources such as radiators or air ducts, or in a place exposed to direct sunlight, excessive dust or humidity, mechanical vibration or shock.

To avoid moisture condensations do not install the units where the temperature may rise rapidly.

To avoid moisture condensations do not install the unit where the temperature may rise rapidly.

Compliance

The equipment is intended to be used in professional audio applications.

Note: This device is not intended to be connected directly to a public internet network.

EMC conformance to Environment E2: Commercial and Light Industrial.

Testing is based on the use of supplied and recommended cable types.

The use of other than shielded (screened) cable types may degrade EMC performance.

Changes or modifications not expressly approved by Shure Incorporated could void your authority to operate this equipment.

This Class B digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Authorized under the verification provision of FCC Part 15B.

Please follow your regional recycling scheme for batteries, packaging, and electronic waste.

Information to the user

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit different from that to which the
- receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Cleaning

To keep the cabinet in its original condition, periodically clean it with a soft cloth. Stubborn stains may be removed with a cloth lightly dampened with a mild detergent solution. Never use organic solvents such as thinners or abrasive cleaners since these will damage the cabinet.

Repacking

Save the original shipping cardboard box and packing material; they will become handy if you ever have to ship the unit. For maximum protection, re-pack the unit as originally packed from the factory.

Warranty

The individual units in the DCS 6000 system are minimum covered by 24 months warranty against defects in materials or workmanship.

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Your DCS 6000 Conference System

The DCS 6000 system

DCS 6000 Digital Conference System is a system to be used at meetings, where a number of people are addressing the 'Floor' in a structured manor. The audio from the Conference units can be heard in the built in loudspeakers in the units.

The system does also allow for simultaneous interpretation for international conferences where multiple languages are used.

To enable all participants to understand the proceedings, interpreters can simultaneously translate the speaker's language as required. These interpretations are distributed through the connected Conference units and delegates can select the language of their choice and listen to it through headphones.

DCS 6000 Digital Conference System comprises of one CU 61xx Central Unit and a number of Conference Units, Gooseneck Microphones and other accessories depending on the system configuration.

The DCS 6000 system has the following main features:

- Fully digital
- Excellent sound quality
- "State of the Art" fully digital integrated interpretation, discussion and voting system offering interpretation, language distribution, conference microphone and voting facilities with attendance check with Chip Card ™
- Digital transmission of audio from/to the Conference unit to/from the central unit using a unique digital DATA and AUDIO bus named DCS-LAN
- Control of up to 3800 conference units. This number does not include Channel Selectors, Repeaters etc. In practical use there are no limits for the number of Channel Selectors in a system
- Delegate and Interpreter units are powered and controlled by the CU 61xx Central Unit, which drives up to app. 50 units with the PS CU power supply
- EX 6010 Extension Unit or PS 6001 DCS-LAN Power Kit is available if more units are required
- Delayed switching on of power to the two DCS-LAN chains, to minimize the total 'in-rush' current on the Mains supply
- Designed for 31 interpretation channels and 8 open microphones
- Audio scrambling of the audio to avoid eavesdropping
- Designed in a standard 1HE 19" cabinet
- TCP/IP connection on CU 61xx for external operation of the system using a PC or control system such as AMX ® or Crestron ®
- Functionality on the CU 61xx depends on the Feature License uploaded into the unit
- Firmware in Delegate units, Interpreter Units, Central Units etc. is upgradeable
- Operated either stand alone or from a PC using the CU browser or using SW 6000 software
- Added functionality and comprehensive features provided by SW 6000 software package running on PC

The SW 6000 is an optional software package, which expands the functionality of the DCS 6000 system. The software runs on standard computer technology (Standard PC with Windows 7, Server 2008 etc.).

Main features of the SW 6000 are:

- Microphone management
- Mimic panel operation
- Interpretation management
- Voting management
- Message handling
- Agenda handling
- Data stored on SQL data base
- Web service interface available for easy links to external applications
- Multi language user interfaces
- Supports different User types with different priorities, user interfaces and control possibilities

System components

Central equipment etc.

CU 6105	Central Unit
CU 6110	Central Unit
EX 6010	Extension Unit
PS 6001	DCS-LAN Power Kit consisting of one PS CU and one PI 6000
PS CU	Power Supply
PI 6000	DCS-LAN Power Inserter
RC 6000	Redundancy Controller
AO 6004	Audio Output Unit
AO 6008	Audio Output Unit
RP 6004	Repeater for four chains
JB 6104	Junction Box with 4 outputs

Interpreter equipment

IS 6132 P	Interpreter Unit
LS 6132 P	Interpreter Loudspeaker

Conference units and Ch. selectors

DC 6990 P	Conference Unit (portable) with touch screen with two built-in channel selector, Chip-card and 5 voting buttons, configurable as Delegate, Dual Delegate or Chairman.
DC 6120 P	Conference Unit (portable)
DC 6190 P	Conference Unit (portable) with two built-in channel selectors
DM 6680 P	Conference Unit (portable) with voting
CM/DM 6080 F	Conference Unit (flush mounted) with built-in channel selectors
DM 6620 F	Conference Unit (flush mounted) with, Chip-card and 5 voting buttons
CM/DM 6680 F	Conference Unit (flush mounted) with one built-in channel selector, Chip-card and 5 voting buttons
MU 6040 C/D	Microphone Unit for use with FD/FC front plate with Loudspeaker, Microphone and Buttons. Available in Delegate (D) and Chairman (C) version
MU 6042 D	Dual Microphone Unit for use with FD/FC front plate with Loudspeaker, Microphone and two delegate Buttons
DV 6501 F	Voting Unit
AM 6040	Ambient Microphone Unit
CS 6340 FV/FH	Channel Selector (flush mounted)

Accessories

In addition to the unit a number of accessories are available like:

- Storage Boxes
- GM 6523 Gooseneck Microphone, 40 cm
- GM 6524 Gooseneck Microphone, 50 cm
- GM 6525 Gooseneck Microphone, 63 cm
- DH 6021 Delegate Headphone
- DH 6223 Stethoscope Headphone
- DH 6225 Ear Clip Headphone

For detailed instruction in how to use the above units, please refer to the User Manuals for the relevant products.

Operating instructions

CS 6340 Channel Selector

General description

The CS 6340 channel selector is a very compact unit designed for flush mounted installation in tables, arm rests etc.

The standard units are designed with aluminium front plate.

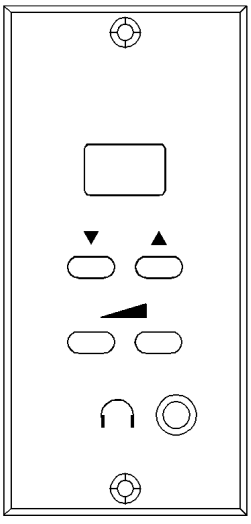
Features

The main features of the CS 6340 Channel Selector are:

- Digital sound transmission
- Built in DSP
- Volume control
- Channel selection 0-31
- Light in LCD display
- Available in vertical, horizontal or customised version
- Connection for head phones either to a mini-jack at the front plate or to a miniature jack at the back for remote connection of the headphone.
- Many features can be set by system commands

User Controls, indications & connectors

Front plate layout (CS 6340FV)



Front plate controls

The CS 6340 Channel Selector features the following controls and display:

Display

This display is used for information purposes and set-up purposes. This display has built in back light. When a button is depressed, the light is turned on for 5 sec.

Buttons (four)

The buttons are used for changing the channel setting or changing the volume setting. The buttons are also used for saving the settings or other control purposes.

Connectors

Headphone Connector (mini-jack)

A mini jack is located at the front for connecting a headphone for listening to the Floor language or one of the interpreted languages

Headphone Connector (Molex)

A 2 pin Molex jack is located at the back for connecting a headphone for listening to the Floor language or one of the interpreted languages.

This connecter is intended for use, where the connection to the headphone is remotely from the front plate.

Important: This connector is intended for professional use only.

DCS-LAN connector

Two RJ45 sockets are located at the bottom of the unit for connecting to the other units on the DCS-LAN bus.

Normal Operation

Channel Selection

Channel selection is done using the channel up and channel down buttons. Channel numbers can be from 0 to 31.

The lowest channel (0) always carries floor audio and all other channels carry interpreted languages (or floor if no interpretation is currently performed on this channel). If fewer than 32 channels are in use only available channels will be selectable from the channel selector – the channels are always numbered

consecutively. Pressing the down button when the lowest channel number is displayed will cause the channel selection to wrap around to the highest available channel if the channel wrap parameter is set.

Holding the channel up or down button depressed will cause the channel numbers to scroll with a system defined start-up delay, and subsequent smaller delay between each change in channel position. These delays are set using system parameters.

On power-up the channel number will be either the system global power up setting or a locally saved power-up channel or floor channel if a locally saved channel number is outside the valid channel numbers.

Volume Control

Volume control is done using the volume up and volume down buttons. The number of volume levels and the step size in dB between successive levels is globally defined using system parameters – however setting the volume level to 0 turns the headphone/line output off.

When a volume button is depressed the channel display will be overridden with the current volume (this is indicated by the black dot in the upper left corner of the display) if the show volume global parameter is set. The display will continue to show the current volume level for a preset time interval before returning to displaying the channel information – this time interval is also set globally using a system parameter.

The audio can be attenuated on all interpreted channels, when no interpretation is performed and floor is present on the channel. This feature can be used when the channel selector is used in combination with an analogue microphone system to prevent feed-back from the channel selector to the microphone if the delegate is speaking and listening to the same channel. The attenuation in dB is set globally – however enabling or disabling this feature can be set individually on the channel selectors.

Storing local setup in FLASH

If enabled by the central unit the channel selectors may store the following local parameters in flash memory thus overriding the global system settings

- start-up volume level
- startup channel number
- attenuate floor audio on interpreted channel

To change the local setup in flash memory this must be globally enabled from the CU.

To set a new startup volume level use the volume up or down button to change to the wanted volume level and then depress both channel up and channel down buttons. After a short time period the display will show **F1 –** if the buttons are released while the display is showing **F1** the display will change to **FP** to indicate that the new value is now programmed into flash memory. To clear the locally saved volume level position depress both channel up and channel down buttons until the display shows **C1** then release the buttons – the display will then change to **FC** to indicate that the flash is cleared of this setting.

To set a new start up channel position use the channel up or down button to change to the wanted channel position and then depress both volume up and volume down buttons. After a short time period the display will show **F2** – if the buttons are released while the display is showing **F2** the display will change to **FP** to indicate that the new value is now programmed into flash memory. To clear the locally saved start up channel position depress both volume up and down buttons until the display shows **C2** then release the buttons – the display will then change to **FC** to indicate that the flash is cleared of this setting.

To activate the attenuate floor audio on interpreted channel functionality of a unit depress the volume down and channel up buttons. After a short time period the display will show **F4** – if the buttons are released while the display is showing **F4** the display will change to **FP** indicating that the activation is now saved to flash. To deactivate the attenuate floor audio on interpreted channel functionality of a unit depress the volume down and channel up buttons until the display shows **C4** then release the buttons – the display will then change to **FC** to indicate that the activation is now cleared from flash.

Startup / Error conditions

The following conditions in addition to the channel number are displayed:

- E0-E4, network error
- E5, network error or firmware mismatch
- E9, reset

The channel selector will always show E1 shortly when powering up, then the display will change to show the channel number.

If any of the "E0-E5" messages is shown constantly, please check your cables and verify that the terminator plug is inserted in the last unit in the chain.

System Setup

General guidelines

Connect the CS 6340 Units at the DIS-LAN connectors to the various units using Cat 5e FTP or STP screened cables. Please observe the following guidelines:

- Maximum cable length in one chain when not using repeaters is 200 m.
- Maximum cable length in one chain when using repeaters is 650 m
- If the last unit in a chain is a CS 6032F the unit must have a DCS LAN Network Termination Plug inserted in one of the two DCS LAN Network connectors (RJ45 connectors).

Important: For more details about cabling and maximum number of units to connect to the DCS 6000 system please consult the 'User Manual CU 61xx'.

Typical schematics

Technical Specifications

Digital Section

Sound quality ..... 20 bit audio @ 32 kHz sampling frequency

Analog Section

Frequency response.....125-15kHz

Signal to noise ratio .....>85 dBA

Total harmonic distortion ..... < 0.1%

Headphone output load .....16-2k ohm

Max. Output level ..... 1,2 V RMS

General

Factory selectable options

The following parameters are factory changeable:

- Channel wrap: Pressing the up-button when the highest channel is selected will also cause the channel number to wrap around if the 'Channel wrap parameter' is set
- Channel offset: Channel numbers can be from 0 to 31 or from 1 to 32 depending on the current system setting
- Volume step size
- Show volume
- Volume/channel step initial/successive delay

Connectors

DCS-LAN network..... 2 pieces RJ45/8 pin

Analog outputs connector (front) .... 3,5 mm mini-jack

Analog outputs connector (back) .....2 pin Molex

This connector is for professional use only

Max. System performance

Max. number of DM/CM (excl. CS).....3800

Max. number of IS 6xxx in one booth 32

Max. number of IS 6xxx.....150

Max. number of AO 600x..... 20

Max. number of CS 6032.....practically unlimited

Max. number of languages..... 31

Max number of open microphones 8

General

Power requirement .....24-48 V DC

Power consumption 0,5W

Power supplied from .... CU 61xx / EX 6010 / PS 600x

Temperature to guarantee specified performance

..... 5 Deg C. to 40 Deg C. (35 to 80% humidity)

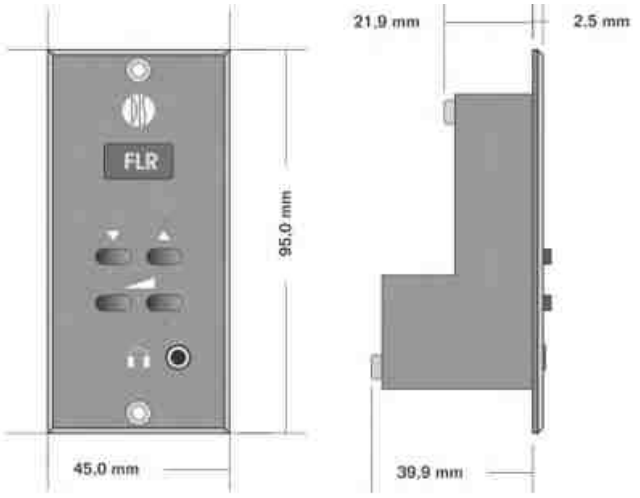
Storage temperature

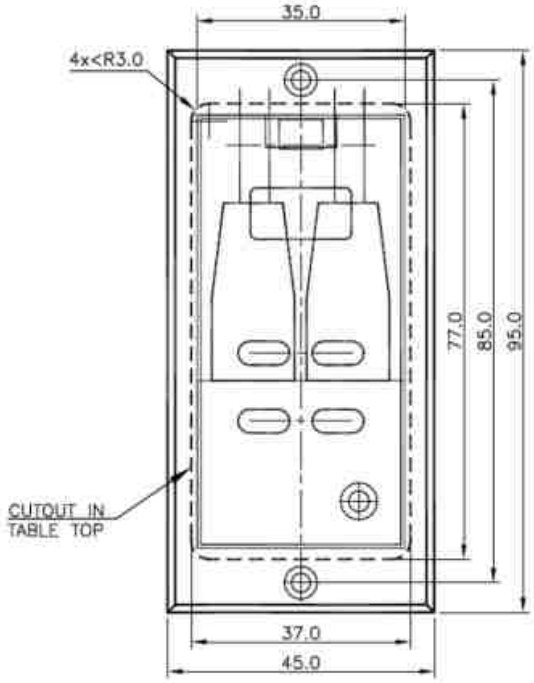
..... -20 Deg C. to 60 Deg C. (10 to 80% humidity)

Dimensions (W x H x D) 45 (95) x 95 (45) x 40 mm

Dimensions in bracket are the horizontal version.

Accessories supplied.....User manual





Connection Details

DCS-LAN Chain

The DCS 6000 system uses shielded Cat5e, Cat6 or Cat7 F/UTP or U/FTP cables with shielded RJ45 connectors.

EIA 568-B wiring shall be used.

Important: The names of Cat5/6/7 cable type have changed.

Old name	New name
FTP	F/UTP
STP	U/FTP
UTP	U/UTP

Important: Use only F/UTP or U/FTP (shielded) cables and shielded RJ45 connectors and not U/UTP cable, which are unshielded.

How to wire a Cat5e (EIA 568-B) cable to a RJ45 con.:

Pin	Function	Connector #1	Connector #2
1	In-going +	ORG/WHT	ORG/WHT
2	In-going -	ORG	ORG
3	+48V	GRN/WHT	GRN/WHT
4	0V	BLU	BLU
5	0V	BLU/WHT	BLU/WHT
6	+48V	GRN	GRN
7	Outgoing -	BRN/WHT	BRN/WHT
8	Outgoing +	BRN	BRN

Important: If other color codes are used then the four pairs are connected as follows:

Pair 2: Pin 1 & 2
Pair 3: Pin 3 & 6
Pair 1: Pin 4 & 5
Pair 4: Pin 7 & 8

The phase of the pairs must be correct and the wiring spec. as stated in Cat5e (EIA 568-B) have to be followed.

Note: Cat6 and Cat7 cables can normally only be terminated in sockets (female) and not in cable plugs.

Cat6 and Cat7 can thus only be used for feeding cables terminating in wall outlets or patch panels.

Accessories

Cat5e Connection Cables (AWG24)

EC 6001-0.5 ..... Connection Cable 0.5 m
EC 6001-01 ..... Connection Cable 1 m
EC 6001-02 ..... Connection Cable 2 m
EC 6001-05 ..... Connection Cable 5 m
EC 6001-10 ..... Connection Cable 10 m
EC 6001-20 ..... Connection Cable 20 m
EC 6001-50 ..... Connection Cable 50 m
DH 6021 ..... Headphone
CO 6000 RJ45 terminator DCS LAN Termination Plug

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