

DCS 6000

User Manual



Digital Conference System



CS 6032FH Channel Selector
Flush mounted, horizontal



CS 6032FV Channel Selector
Flush mounted, vertical

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Important

Compliance

The equipment has been tested and found to comply with the limits of the following standards for digital devices:

- EN55103-1 (Emission)
- EN55103-2 (Immunity)
- FCC rules part 15, class A (Emission)

This device complies with part 15 of the FCC rules. Operation is subject to the following conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial or light industrial environment. The equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the user manual it may cause harmful interference to radio communications.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

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 unit where the temperature may rise rapidly.

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 12 months warranty against defects in materials or workmanship.

Description of the DCS 6000 system

Features

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™.
- New, unique digital DATA and AUDIO bus.
- 39 incoming channels (8 floor channels + 31 interpreted channels) and one Line input.
- 33 distributed channels (2 x floor + 31 interpreted channels)
- The Delegate and Interpreter units are powered and controlled by the CU 6010 Central Unit, which drives up to app. 200 units on 4 chains.
- EX 6010 Extension Units or PS 6000 Power Supplies available if more units are required
- A total of 4000 units (delegate and/or interpreter units) can be connected to the system.
- Using screened CAT5 or CAT5e cabling (FTP or STP) ensuring a very cost effective installation and easy set-up of portable systems
- Firmware in Delegate units, Interpreter Units, Central Units etc. upgradeable through serial PC-connection (RS232 or RS422)
- Can be operated with or without a PC.
- Added functionality and comprehensive features provided by SW 6000 software package running on PC

RS232/RS422 connection on CU 6010 for external operation of the system of a PC or control system such as AMX or Crestron

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 2000 or XP).

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 for easy export/import of data as well as easy links to external databases
- Multi language user interfaces
- Supports different User types with different priorities, user interfaces and control possibilities
- Variety of printing facilities such as speaker’s log, voting results, delegates list etc.

System components

The CU 6010 Central Unit supports all available units in the DCS 6000 series:

Central equipment etc.

EX 6010	Extension Unit
PS 6000	Power Supply
AO 6008	Audio Output box
RP 6004	Repeater for four chains
JB 6002	Junction Box with 2 outputs
JB 6004	Junction Box with 4 outputs

Interpreter equipment

IS 6032P	Interpreter Set
IS 6132P	Interpreter Set
LS 6032P	Interpreter Loudspeaker

Conference equipment and channel selectors

CS 6032FV/H	Channel Selector (flush mounted)
CM/DM 6010P	Conference Unit (portable)
CM/DM 6020P	Conference Unit (portable) with XLR microphone connector
CM/DM 6070P	Conference Unit (portable) with two built-in channel selectors
CM/DM 6090P	Conference Unit (portable) with two built-in channel selectors and XLR microphone connector
CM/DM 6060F	Conference Unit (flush mounted) with one built-in channel selectors
CM/DM 6510F	Conference Unit (flush mounted) with Chip-card and 3 voting buttons
CM/DM 6560F	Conference Unit (flush mounted) with one built-in channel selector, Chip-card and 3 voting buttons
MU 6040C/D	Microphone Unit for use with customised front plate with Loudspeaker, Microphone and Buttons. Available in Delegate (D) and Chairman (C) version
AM 6040	Ambient Noise Microphone

Operating instructions

CS 6032 Channel Selector

General description

The CS 6032 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.

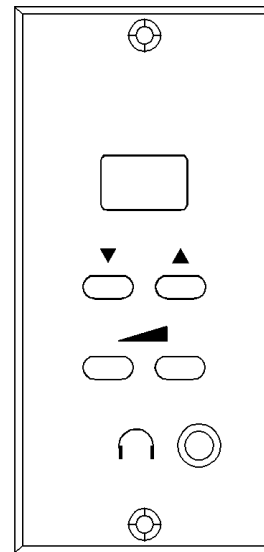
Features

The main features of the CS 6032 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 6032FV)



Front plate controls

The CS 6032 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 connector is intended for use, where the connection to the headphone is remotely from the front plate.

□ **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.

Start up/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

Consult the CU 6010 manual for maximum number of units to be connected to each output at the CU 6010 and for other installation details.

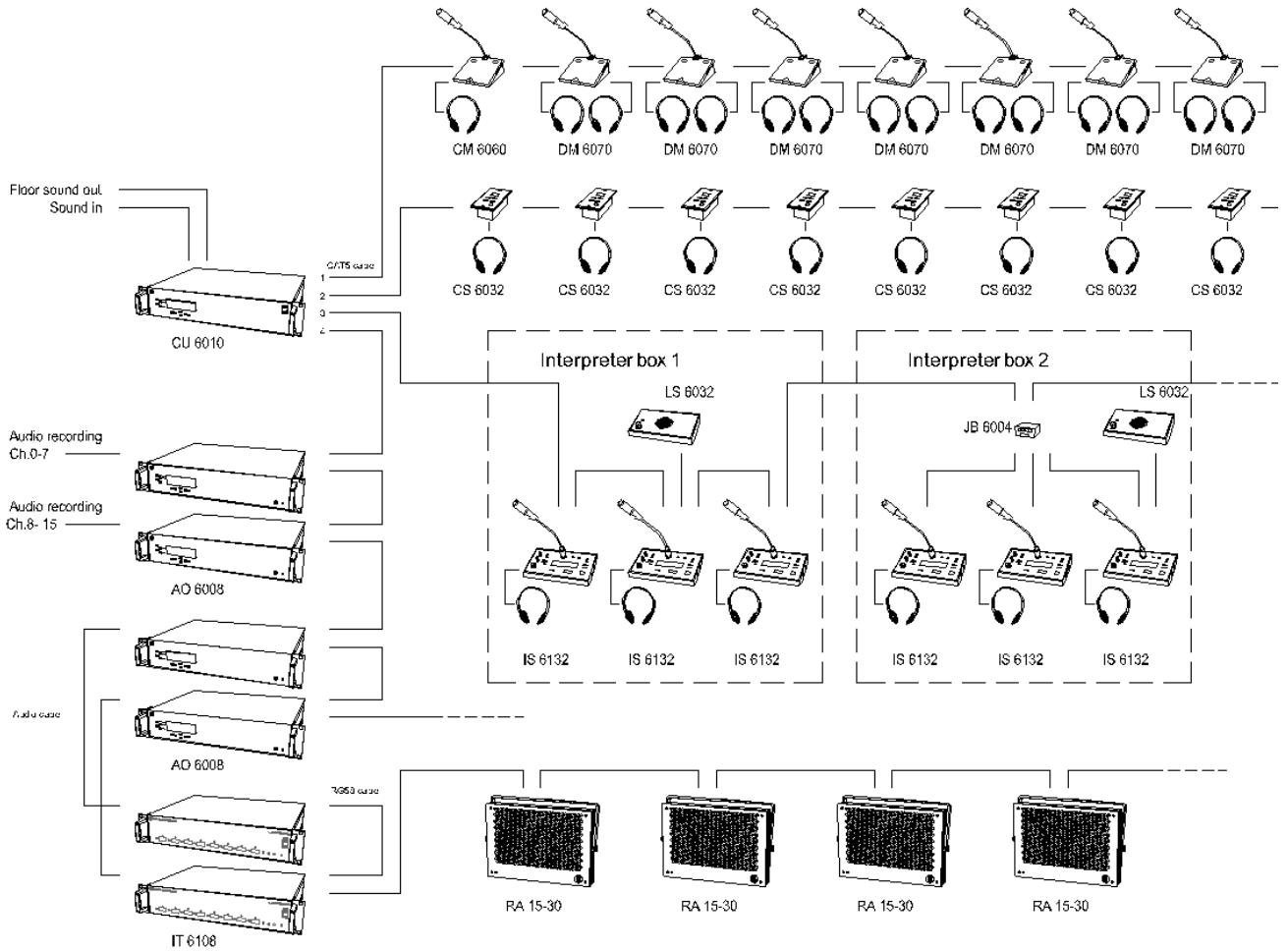
Typical schematics

Connect the CS 6032 to the various units using Cat 5 FTP or STP cables. Please observe the following guide lines:

- Maximum cable length in one chain is 200 m without repeater. This includes interconnection cables between the units. The max. usable cable length depends on the units connected and length of feeding cables etc.
- Maximum cable length in one chain when using repeaters is 650 m.
- If the last unit in one chain is a CS 6032 Channel Selector, this unit has to be terminated with an external termination, as the CS 6032 does not have an internal termination.

The following schematic is showing a typical configurations.

Microphone conference system with interpretation & IR



Appendix

Technical appendix

Cabling

CAT5

The DCS 6000 system uses CAT5, CAT5e or CAT6 FTP or STP cables with screened RJ45 connectors.

It is important to use only FTP or STP (screened) cables and screened RJ45 connectors and not UTP cable, which is unshielded.

EIA 568-B wiring shall be used. How to wire a CAT5 (EIA 568-B) Cable:

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

Note. If other colour codes are used then the four pairs are connected as follows:

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

The phase of the pairs must be correct and the wiring spec. as stated in CAT5 (EIA 568-B) have to be followed.

Note: CAT6 cables can normally only be terminated in sockets (female) and not in cable plugs.

CAT6 should thus only be used for long cable draws terminating in wall outlets or patch panels.

Analogue out

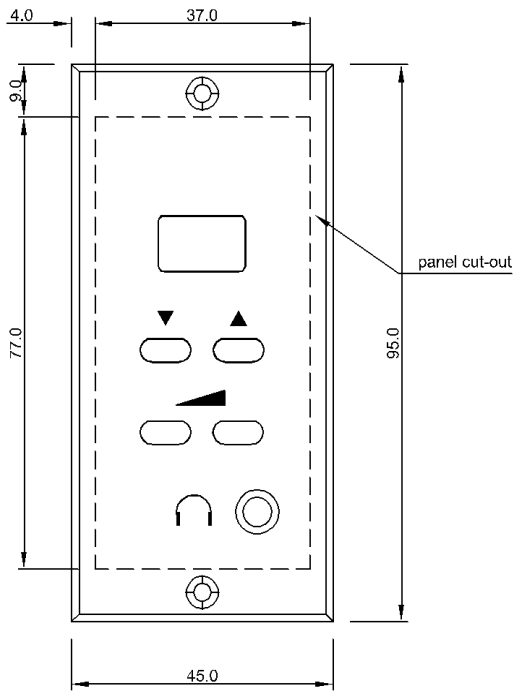
Pin	Signal	Cable type
Body	Ground	2 x 0,25 mm ² shielded.
Tip	Signal	

Accessories (not supplied)

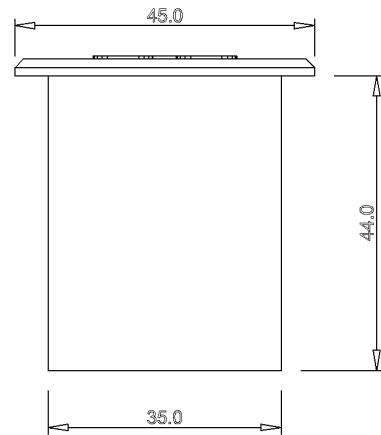
DH 9001 Headphone.....	14 11 03050
EC 6000-.5 Connection Cable 0,5 m.....	10 03 12500
EC 6000-01 Connection Cable 1 m.....	10 03 13101
EC 6000-02 Connection Cable 2 m.....	10 03 13201
EC 6000-05 Connection Cable 5 m.....	10 03 13501
EC 6000-10 Connection Cable 10 m.....	10 03 14102
EC 6000-20 Connection Cable 20 m.....	10 03 14202
EC 6000-50 Connection Cable 50 m.....	10 03 14502

Dimensions

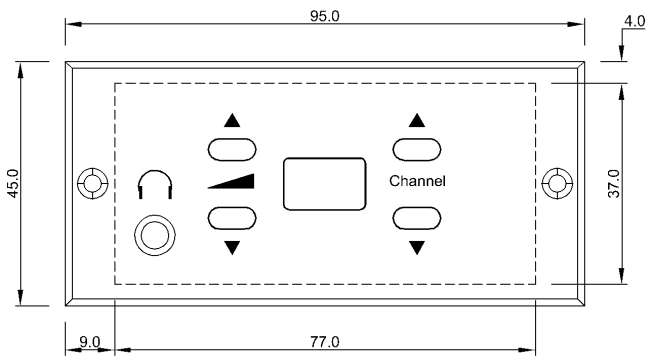
Panel Cut-out (CS 6032FV)



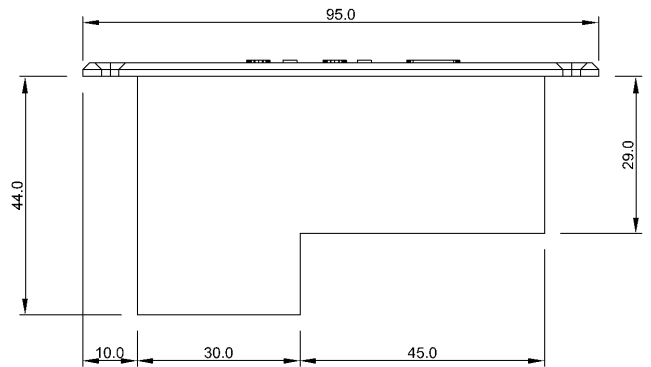
Front view



Panel Cut-out (CS 6032FH)



Side view



Technical specifications

Digital Section

Sound quality 20 bit audio @ 32 kHz sampling frequency

Analog Section

Max. Output level: 1,2 V RMS

Frequency response 50-15kHz

Signal to noise ratio: >85 dBA

Total harmonic distortion: < 0.1%

Headphone output load 16-2000 ohm

General

Power requirement 24-48 V DC

Power consumption 0,5W

Power supplied from CU 6000 / CU 6010 / EX 6010 / PS 6000

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)

Weight 0,1 kg

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

Dimensions in bracket are the horizontal version.

Accessories supplied User manual

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

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

Analogue outputs connector (back) 2 pin Molex

System performance with CU 6000

Max. number of DM/CM (excl. CS) 1000

Max. number of IS 6xxx in one booth 32

Max. number of IS 6xxx 150

Max. number of AO 6008 20

Max. number of CS 6032 practically unlimited

Max. number of languages 31

Max number of open microphones 4

Max. system performance

Max. number of units (excl. CS) 4000

Max. number of IS 6xxx in one booth 32

Max. number of CS 6032 practically unlimited

Max. number of languages 31

Max number of open microphones 8

Specifications are subject to change without notice.