SHURE®

LEGENDARY
PERFORMANCE™

Conferencing and Discussion Systems

DCS 6000 Conference Units

USER GUIDE

User Manual DCS 6000 Conference Units rev L.docx

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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.

Electrostatic discharge may cause the following conference units to restart. If such events occur, the conference units will self-recover.

- DM 6680 P
- DM 6680 F
- DM 6588 F
- DM 6080 F
- DM 6620 F
- DM 6501 F
- CM 6080 F
- CM 6680 F

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/H	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

DCS 6000 Conference Units

General description

The DCS 6000 Conference Units are fully digital microcomputer controlled conference units. All units include a DSP processor (Digital Signal Processing).

The DCS 6000 Conference Units offers full compatibility with the DCS 6000 Digital Conference System with the CU 61xx & EX 6010 Central and Extension Units.

Features

The Conference Units offers i.e. the following features (the features depends on the version):

- XRL socket for detachable microphone
- 'Speak' button
- 'Function' button
- Built-in loudspeaker
- Language selector
- Voting
- Chip Card reader
- Touch screen

Conference Units description

The conference units are delivered in Chairman (CM) version, Delegate (DM) version or DC (configurable) version and in Portable and Flush Mounted versions.

Portable conference units

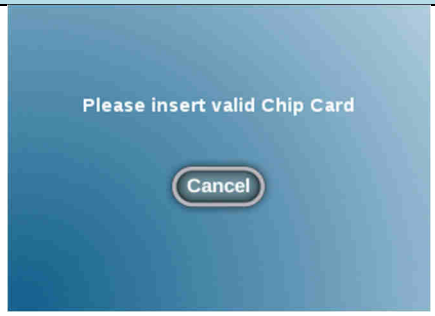
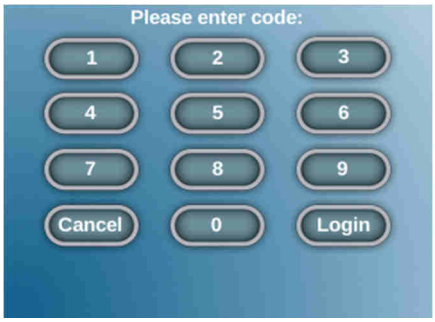
Type	Description	Illustration
DC 6120P	**Portable Conference Unit** • Configurable as CM and DM • Lockable XLR microphone connector • Loudspeaker • Mute/all del off and speak/request buttons • Headphone connector and volume control for floor channel The unit can be configured either as a chairman or a delegate unit. The unit comes per default with a delegate configuration. To configure the unit the mute and the microphone button must be kept down while pressing the volume up button for 10 seconds for chairman functionality or the volume down button for delegate functionality. The button light guides will flash when the unit is configured and the unit will reboot. The configuration is stored in the unit so it recalls its configuration if it is used in another system setup. The left button is a function button that changes functionality depending on the configuration. The chairman configuration enables 'all delegates off' functionality in the left button while the delegate configuration enables 'mute' and 'reply' functionality in the left button. The function button can be changed to match the current functionality by pushing the button out of the unit from below. The new button is then simply clicked into the unit. The gooseneck microphone GM 652x can be locked to the unit with a 1.5 mm hex key. The lock is accessible from the small hole below the DIS logo on the side of the XLR socket. Turn the hex key counter clockwise to lock the gooseneck microphone to the unit and turn the hex key clockwise to unlock the gooseneck microphone from the unit.	

Type	Description	Illustration
DC 6190P	**Portable Conference Unit** • Configurable as CM and DM • Lockable XLR microphone connector • Loudspeaker • Mute/all del off and speak/request buttons • 2 channel selectors • 2 headphone connectors The unit can be configured either as a chairman or a delegate unit. The unit comes per default with a delegate configuration. To configure the unit the mute and the microphone button must be kept down while pressing the left volume up button for 10 seconds for chairman functionality or the left volume down button for delegate functionality. The button light guides will flash when the unit is configured and the unit will reboot. The configuration is stored in the unit so it recalls its configuration if it is used in another system setup. The left button is a function button that changes functionality depending on the configuration. The chairman configuration enables 'all delegates off' functionality in the left button while the delegate configuration enables 'mute' and 'reply' functionality in the left button. The function button can be changed to match the current functionality by pushing the button out of the unit from below. The new button is then simply clicked into the unit. The gooseneck microphone GM 652x can be locked to the unit with a 1.5 mm hex key. The lock is accessible from the small hole below the DIS logo on the side of the XLR socket. Turn the hex key counter clockwise to lock the gooseneck microphone to the unit and turn the hex key clockwise to unlock the gooseneck microphone from the unit.	

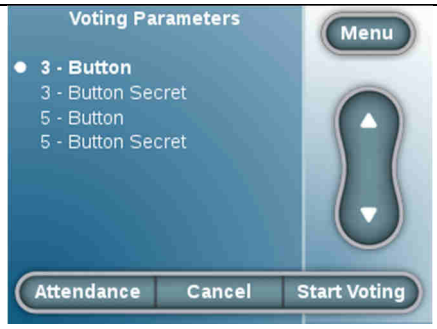
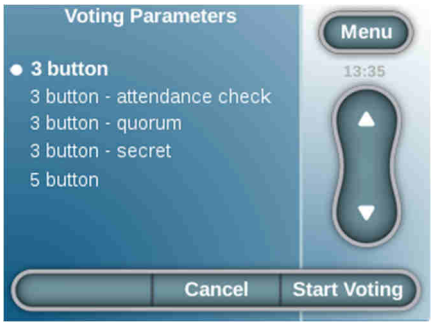
Type	Description	Illustration
DM 6680P	Portable Delegate Conference Unit • Lockable XLR microphone connector • Loudspeaker • Speak/request button and Function button • Chip card reader • Channel selector • 2 headphone connectors • Exchangeable buttons and button overlays The unit comes with two standard button overlays. The overlay to be used can be attached to the unit by removing the paper on the back of the overlay and fixing the overlay to the unit. Overlays with other functionality and in other languages can be ordered as custom overlays. The mute and speak/request buttons can be changed to match the local language. Remove the plastic caps underneath the unit and insert a thin device to eject the buttons from underneath. Insert the new button by clicking it into the unit. Insert the plastic caps after changing the button(s). The gooseneck microphone GM 652x can be locked to the unit with a 1.5 mm hex key. The lock is accessible from the small hole to the left of the XLR socket. Turn the hex key counter clockwise to lock the gooseneck microphone to the unit and turn the hex key clockwise to unlock the gooseneck microphone from the unit. The unit can be fixed to the table top using the mounting holes on the underneath of the unit. Drill a hole maximum 10mm deep using an Ø 2.5mm drill and use a bottoming tap M3x0.5 to cut a thread. Fasten the unit from below the table with a long screw that fits with the dimension of the screw hole.	

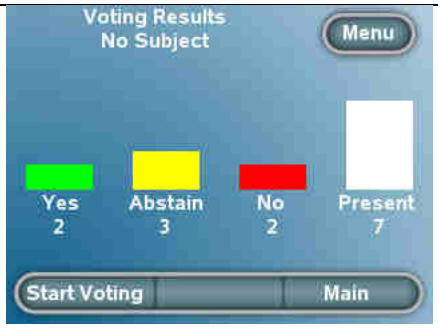
Type	Description	Illustration
	The unit has five buttons that change functionality depending on the system status. During normal operation the two buttons to the left change the interpretation channels while the two buttons to the right change the volume of the channel selector. During voting sessions the buttons act as voting buttons whether it is a 3-button or 5-button voting session taking place. The voting sessions can be started from a DC 6990P (CM configuration) if the system is running in stand-alone mode or by using the SW 6000. The buttons can also be used for attendance check and proxy voting. The proxy voting functionality is only available in combination with the SW 6000. The chip card reader is used for authentication and can only be used in combination with the SW 6000. The chip cards must be inserted with the chip facing downwards.	
DC 6990P	**Portable Conference Unit** • Configurable as CM, DM and Dual DM • 3.5'' LCD color touch screen • Lockable XLR microphone connector • Loudspeaker • Speak/request button and Function button • Chip card reader • 2 channel selectors • 2 headphone connectors • Exchangeable buttons • Multi-language user interface The unit can be configured as a chairman, delegate or dual delegate unit. The unit comes per default with a delegate configuration. To configure the unit type, please refer to the section 'Setup menu'. The left function button can be configured with different functionality. The unit comes per default with mute functionality. To configure the button functionality, please refer to the section 'Setup menu'. The function and speak/request buttons can be changed to match the local language and selected functionality. Remove the plastic caps underneath the unit and insert a thin device to eject the buttons from underneath. Insert the new button by clicking it into the unit. Insert the plastic caps after changing the button(s).	

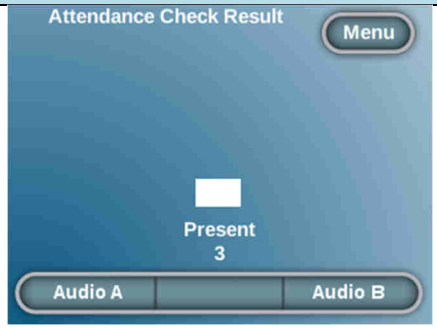
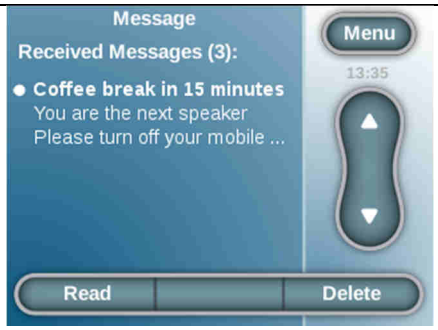
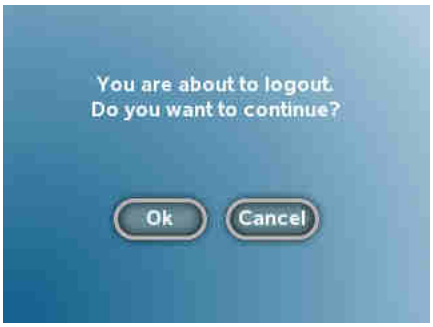
Type	Description	Picture
	The user interface can be changed to support other languages. Please refer to the 'DCS6000 Upgrade Manual' for information on creating, editing and deleting languages as well as uploading them to the DC 6990P. The start image can also be changed to support customised start images (other text, logo etc). Please refer to the 'DCS6000 Upgrade Manual' for more information. The gooseneck microphone GM 652x can be locked to the unit with a 1.5 mm hex key. The lock is accessible from the small hole to the left of the XLR socket. Turn the hex key counter clockwise to lock the gooseneck microphone to the unit and turn the hex key clockwise to unlock the gooseneck microphone from the unit. The unit can be fixed to the table top using the mounting holes on the underneath of the unit. Drill a hole maximum 10mm deep using an Ø 2.5mm drill and use a bottoming tap M3x0.5 to cut a thread. Fasten the unit from below the table with a long screw that fits with the dimension of the screw hole. The chip card reader is used for authentication and can only be used in combination with the SW 6000. The chip cards must be inserted with the chip facing downwards.	
	Quick Start Guide To activate the unit: 1. Press the LCD touch screen 2. Login using code or chip card if requested 3. Navigate on the Main screen using the control buttons 4. Navigate to other screens using the Menu button	
	Start-up screen When the unit is powered up an initialisation and start-up screen appears. It includes the conference name if a conference has been started in the SW 6000. It also includes a delegate name if the conference is running with 'prepared delegate seat table', 'login using code and list', 'login using code on preferred seat' or 'automatic login on preferred seat' mode. Press the touch screen to enter.	 **Start-up screen with conference name and delegate name**

Type	Description	Picture
	If a conference requiring chip card is running, the user is prompted to insert chip card before being granted access.	 **Login using chip card**
	If a conference requiring login code is running, the user is prompted to enter the code on the touch screen before being granted access.	 **Login using code**
	Main screen When the user leaves the start-up screen, the main screen appears. It includes a combined speaker and request list with scroll functionality. The Menu button provides access to a Menu overview with extended functionality. A digital clock is available when using the SW 6000. Three different multi-functional software buttons are available for the CM, DM and Dual DM at the bottom of the screen.	
	The CM includes the microphone handling buttons: • All Del Off/All Req Off (active when the indicator is on the speaker and the request list, respectively) • Exclusive • Next On/Mic On/Mic Off (active when the indicator is on the first request on the request list, on the remaining requests on the request list and on any speaker on the speaker list, respectively)	 **CM Main screen**

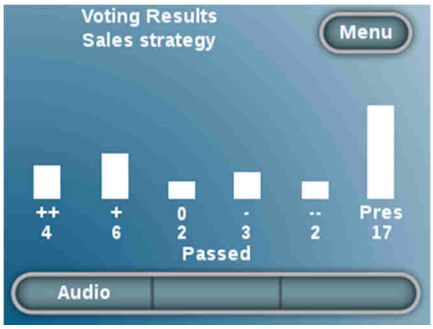
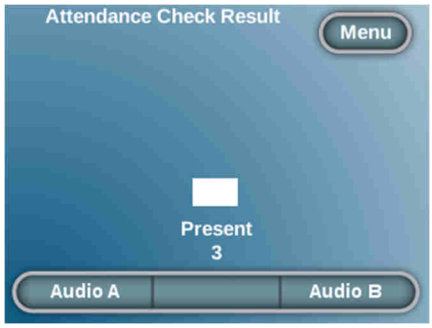
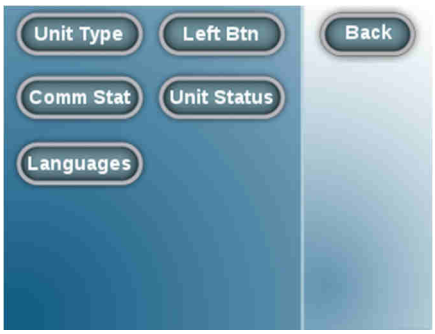
Type	Description	Picture
	The DM includes an audio button: • Audio Please refer to the section 'Audio menu' for more information.	 **DM Main screen**
	The Dual DM includes two audio buttons: • Audio A (selection button for Delegate A) • Audio B (selection button for Delegate B) Please refer to the section 'Audio menu' for more information.	 **Dual DM Main screen**
	Menu screen When the user presses the Menu button, the menu screen with a menu overview appears. The overview gives access to extended functionality depending on whether it is running stand-alone or with the SW 6000 (user type dependant): • CM (stand-alone): Voting, Results, Audio, Logout • CM (SW 6000): Conference, Voting, Agenda, Results, Audio, Messages, Logout • DM (stand-alone): Results, Results, Logout • DM (SW 6000): Agenda, Results, Messages, Logout • Dual DM (stand-alone): Results, Results, Logout • Dual DM (SW 6000): Agenda, Results, Messages, Logout	 **CM Menu screen (SW 6000)**  **DM and Dual DM Menu screen (SW 6000)**

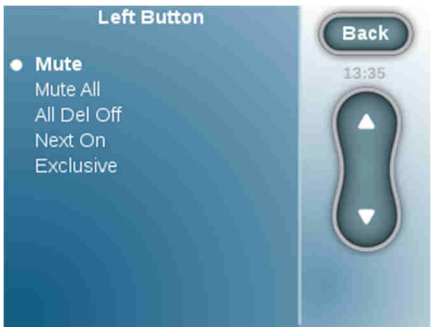
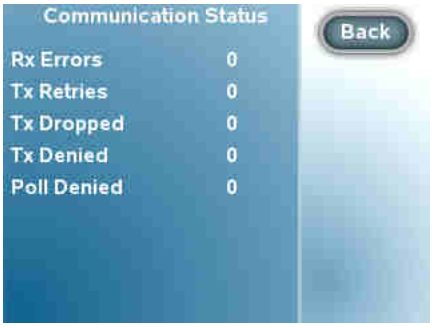
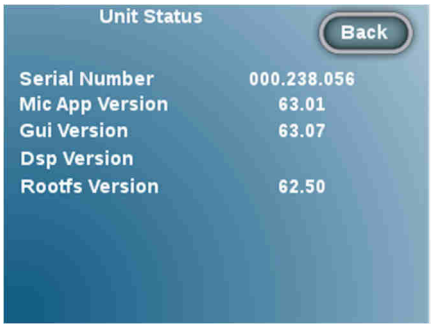
Type	Description	Picture
	Conference menu The Conference menu displays the available conferences on a list form. The CM can start and stop a conference using the start/stop conference button.	 **Conference menu – start conference**  **Conference menu – stop conference**
	Voting menu The Voting menu displays the available voting parameters. In stand-alone four parameters are available while with the SW 6000 all the parameters defined in the CAA will be available. The CM can scroll in the list using the scroll buttons and start a selected voting session or attendance check.	 **Voting menu (stand-alone)**  **Voting menu (SW 6000)**

Type	Description	Picture
	Agenda menu The Agenda menu displays the agenda for an active conference. The agenda is created in the CAA. The CM can set a subject on the agenda and start a voting session or attendance check by using the 'Set Subject' and 'Start Voting' buttons. By pressing the 'Details' button, the full agenda subject will be displayed.	 **Agenda menu - no set subject**  **Agenda menu – set subject**
	Results menu The Results menu displays the latest voting or attendance check result.	 **CM Results menu (stand-alone)**  **DM Results menu (SW 6000)**

Type	Description	Picture
		 **Dual DM Results menu (SW 6000)**
	Audio menu The Audio menu contains volume and channel settings for the channel selector.	 **Audio menu**
	Messages menu The Messages menu contains messages that are sent to the unit from a CUA (SW 6000). By pressing the 'Read' button the selected message opens up. By pressing the 'Delete' button the selected message is being deleted. **Logout menu** The Logout menu allows the user to logout and return to the Start-up screen.	 **Messages menu**  **Logout menu**

Type	Description	Picture
	Voting The Voting screen is automatically displayed on all units when a voting session or attendance check is started. Users with voting right can cast their vote.	 **CM Voting screen**  **DM Voting screen**  **Dual DM Voting screen**

Type	Description	Picture
	Results The Results screen is displayed on all units when a voting session or attendance check is stopped. It displays the latest voting or attendance check result.	 **CM Results screen (stand-alone)**  **DM Results screen (SW 6000)**  **Dual DM Results screen (SW 6000)** **Setup menu** The Setup menu can be accessed by holding down the scroll down button and then pressing the left push button. It contains access to extended setup functionality: Unit Type, Left Btn, Comm Stat, Unit Status and Languages.	 **Setup menu**

Type	Description	Picture
	Unit Type The Unit Type menu gives access to changing the unit type by selecting the desired unit type and exiting the menu. The unit will reboot when the unit type is being changed.	 **Unit type screen**
	Left Btn The Left Btn menu gives access to changing the functionality of the left push button by selecting the desired function and exiting the menu. The unit will reboot when the left button functionality is being changed.	 **Left Btn screen**
	Comm Stat The Comm Stat menu gives access to an overview of the communication errors. The counters should be 0 though the Tx Retries may increase slightly during start-up and if two delegates press their speak button simultaneously.	 **Comm Stat screen**
	Unit Status The Unit Status menu gives access to an overview of the serial number plus current firmware versions of the unit.	 **Unit Status screen**

Type	Description	Picture
	Languages The Languages menu enables the user to enable the languages that should be available as user interface language. The user must logout and login again to see the changes.	 **Languages screen**

Flush-mounted conference units

Type	Description	Illustration
FC 6020F	**Chairman Front Plate Unit** • Lockable XLR microphone connector • Loudspeaker • Speak/request button • Delegates off button • HD 15 P connector for connection to MU 4040/MU6040C The gooseneck microphone GM 652x or GM 6622 can be locked to the unit with a 2 mm hex key. The lock is accessible from the small hole above the XLR socket. Turn the hex key clockwise to lock the gooseneck microphone to the unit and turn the hex key counter clockwise to unlock the gooseneck microphone from the unit.	
FC 6021F	**Chairman Front Plate Unit** • Lockable XLR microphone connector • Speak/request button • Delegates off button • HD 15 P connector for connection to MU 4040/MU6040C The gooseneck microphone GM 652x or GM 6622 can be locked to the unit with a 2 mm hex key. The lock is accessible from the small hole above the XLR socket. Turn the hex key clockwise to lock the gooseneck microphone to the unit and turn the hex key counter clockwise to unlock the gooseneck microphone from the unit.	

Type	Description	Illustration
FD 6120F	**Delegate Front Plate Unit** • Lockable XLR microphone connector • Loudspeaker • Speak/request button • Mute button • HD 15 P connector for connection to MU 4040/MU6040D The gooseneck microphone GM 652x or GM 6622 can be locked to the unit with a 2 mm hex key. The lock is accessible from the small hole above the XLR socket. Turn the hex key clockwise to lock the gooseneck microphone to the unit and turn the hex key counter clockwise to unlock the gooseneck microphone from the unit.	
FD 6121F	**Delegate Front Plate Unit** • Lockable XLR microphone connector • Speak/request button • Mute button • HD 15 P connector for connection to MU 4040/MU6040D The gooseneck microphone GM 652x or GM 6622 can be locked to the unit with a 2 mm hex key. The lock is accessible from the small hole above the XLR socket. Turn the hex key clockwise to lock the gooseneck microphone to the unit and turn the hex key counter clockwise to unlock the gooseneck microphone from the unit.	
CM/DM 6080F	**Flush Mounted Conference Unit** • Lockable XLR socket for DIS gooseneck microphone • DM 6080F: 'Speak/request' button • CM 6080F: 'Push to talk" (priority) button • CM 6080F: "Delegate Off" button with LED indication • Loudspeaker • Headphone connector • Channel selector The connectors on the back on the unit (located on the PCB) is for professional use only.	
CM/DM 6680F	**Flush Mounted Conference Unit** • Lockable XLR socket for DIS gooseneck microphone • DM 6680F: 'Speak/request' button • CM 6680F: 'Push to talk" (priority) button • CM 6680F: "Delegate Off" button with LED indication • Loudspeaker • Channel selector • Headphone connector • 5 voting buttons • Chip card reader The connectors on the back on the unit (located on the PCB) is for professional use only.	

Type	Description	Illustration
DM 6620F	**Flush Mounted Delegate Conference Unit** • Lockable XLR socket for DIS gooseneck microphone • 'Speak/request' button • Loudspeaker • 5 voting buttons • Chip card reader The connectors on the back on the unit (located on the PCB) is for professional use only.	
DM 6588F	**Flush Mounted Armrest Delegate Conference Unit** • XLR socket for DIS gooseneck microphone • 'Speak/request' button • Channel selector • Headphone connector • 3 voting buttons • Chip card reader The connectors on the back on the unit (located on the PCB) is for professional use only.	
MU 6040 C/D	**Microphone Unit** Available in Delegate (D) and Chairman (C) versions. The MU 6040 Microphone Unit is designed for hidden installations, e.g. in an armrest, under a table or in a floor box for use with the FD/FC series of front plates with Loudspeaker, Microphone and Buttons or for use with the HD 4042 Hand Microphone. The MU 6040 is provided with a HD 15S connector for connection of the FD/FC front plate. The MU 6040 may also be used to switch on and off a loudspeaker in PA system with separate amplification (e.g. a 100V system) via an external relay. The MU 6040 operates in the same modes as the other units.	
MU 6042D	**Dual Microphone Unit** The MU 6042D Microphone Unit is designed for hidden installations, e.g. in an armrest, under a table or in a floor box for use with the FD/FC series of front plates with Loudspeaker, Microphone and Buttons. ***Note: The MU 6042D does not support the use of the HM 4042 Hand Microphone.*** The MU 6042D is provided with a HD 15S connector for connection of the FD/FC front plate for use with two delegates like FD 6012F featuring Mic On-Off/Request buttons for two delegates. ***Note: The MU 6042D operates in the same modes as the other units except for the VOX mode.***	

Type	Description	Illustration
AM 6040	**Ambient Microphone** The AM 6040 Ambient Microphone Unit is designed to detect ambient noise in a conference room. The purpose of an ambient microphone is to provide sound from a meeting room/conference hall, when there is no speaker/chairman active using their microphones. The microphone should be placed in a central position in the room, but not too close to anyone; thereby the microphone is able to pick up sound from activities in the room/hall (chairs being moved, paper being picked up, low voices and so on). Transmission of ambient noise rather than transmitting no sound at all is a desirable feature from listeners attending the meeting via headphones. The ambient noise indicates to the listeners, that there is no speaking activity going on, and this information is very nice to have, when interpreters are doing interpretation, and the speaker stops speaking. The AM 6040 Ambient Microphone Unit is designed for installation above a recessed ceiling for connection to an external microphone like DIS model HM 4042 or GM 652x series of gooseneck microphones. The AM 6040 is delivered in a shielded metal mounting box like the MU 6040. • Automatic activation of the microphone, if no Chairman or delegate units are turned ON and the LineIn Volume (LineIn>Loudspk) is set to OFF. • Setting of the volume of the ambient noise audio level on the CU 61xx. ***Note: One ambient microphone can be active in the DCS6000 system at one time.***	

Microphone functionality

Microphone functionality is a feature where participant in a conference can use a microphone in a DCS 6000 Conference Unit to address an audience. The sound from a conference microphone is called the 'Floor' sound.

The 'Floor' sound can then be listened to in built-in loudspeakers in the DCS 6000 Conference Units, in Language selectors, in Interpreter Sets or the sound can be feed to an external PA-system.

The number of allowed open microphones can be set at the CU 61xx however the sound from all the open microphones is mixed together in the 'Floor' sound.

User Controls & Indications

The following list shows the function of the facilities for using the microphone in the units. Please note, that not all facilities are available at all units:

Speak button (delegate unit)

Pressing the *Speak* button turns on the microphone or will place the microphone in the request queue (see 'Operation modes').

The 'Operation mode' determines the functions of this button.

Speak button (chairman unit)

Pressing the *Speak* button turns on the microphone

Speak LED

Lights up with a red colour when the microphone is ON

Request LED

Lights up with a green colour when the microphone is put in the request queue (see 'Operation modes').

Delegate off/All del off button (chairman unit)

Pressing the *Delegate off/All del off* button turns off all delegate microphones

Delegate off/All del off LED (chairman unit)

Lights up with a green colour when the button is pressed with the exception of the DC 6990P that lights up with a red colour in the first release

Mute button

Pressing the *Mute* button mutes the microphone while the button is activated without removing the right to speak

Mute LED

No LED

Exclusive button (chairman unit)

Pressing the *Exclusive* button mutes all delegate microphones and activates the chairman microphone while the button is activated

Exclusive LED (chairman unit)

Lights up with an orange colour when the button is activated however in the first release it will light up with a red colour

Next on button (chairman unit)

Pressing the *Next on* button turns on the first request on the request list

Next on LED (chairman unit)

Lights up with a red colour when the button is activated

Microphone light ring

Lights up with a red colour when the microphone is ON. If the microphone is muted, the light in the light ring is turned off during the time the unit is muted

Microphone connections

XLR microphone connector

The XLR microphone connector is used for connection of GM 652x series of gooseneck microphones. The HM 4042 Hand Microphone can also be connected. However the button on the hand microphone will not work.

Mini-DIN microphone connector (only "F" models)

A Mini-DIN microphone connector is located at the back for connection of FD/FC front plates with GM 65xx F series of gooseneck microphones. The HM 4042 Hand Microphone can also be connected.

This connecter is intended for use, where the connection to the microphone is remotely from the front plate, which is only on customised units.

HD 15S connector (only MU 604x models)

The HD 15S is used for direct remote connection of FD/FC series of front plates or Microphones (e.g. HM 4042 or GM 652x in external outlet) or/and microphone control buttons, LED indicators and loudspeaker. Please refer to the technical section for pin layout

Important: The microphone input at the above mentioned connectors does only support DIS microphones and do not support other types of microphones i.e. third part microphones.

Locking of the Microphone

The following units features locking of the microphone using a tool

When locked, the microphone cannot be removed from the unit

FD 61x0, FC 60x0 Front Plates:

Locking – Turn clockwise

Un-locking – Turn counter clockwise

DC 6990P, DC 61x0P og DM 6680P:

Locking – Turn counter clockwise

Un-locking – Turn clockwise

Operation modes

System modes

The 6000 series microphones work in different modes - according to the settings of the system.

The "System Operation Mode" also called 'CU mode' determines the behaviour of the microphone system. The mode is set on the CU 61xx.

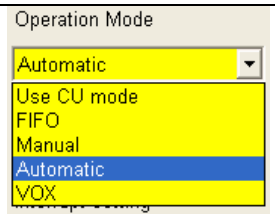
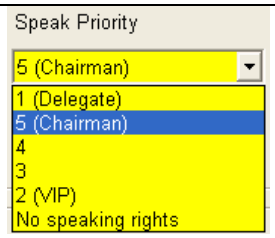
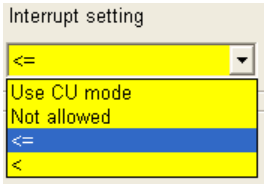
The following modes are available when the CU 61xx runs standalone (PC with SW 6000 has never been connected):

Automatic	Auto (or Automatic) mode allows for the microphone units to be switched on immediately upon pressing the microphone ON/OFF button. This is indicated by a red light in the 'Speak' lamp in the microphone unit. Pressing the microphone ON/OFF button again will turn the microphone off. If the 'maximum speakers (delegates)' is reached, the speak request will be rejected. Microphones with Chairman priority will always be turned on (a Chairman Unit is always in Auto or VOX mode).
FIFO	FIFO is an automated mode. The microphone unit functions in the same way as in *automatic* mode as long as the number of turned on delegate units is less or equal to the selected 'maximum speakers'. When the maximum number is reached, the next delegate pressing the *ON/OFF* button will be put in the top of the request queue. The green 'Request' lamp flashing indicates this. More delegates will be put in the request queue when they press their ON/OFF buttons, until the maximum of requests is reached. Their green 'Request' lamps will light up steadily. When one of the active microphone units is switched off, the first delegate unit in the queue is automatically switched ON, and the next delegate unit in the queue will flash with the green 'Request' lamp. This mode will normally be used with only 1 as maximum speakers. Microphones with Chairman priority will always be turned on directly.
Manual	Manual mode features a request list, where 'Delegates' are inserted in a queue upon pressing the microphone ON/OFF button. This is confirmed by green light in the 'Request' lamp in the delegate unit. It is possible to cancel the request by pressing the button again. The microphone can only be switched on from a PC running SW 6000 software, from the DC 6990 (Chairman unit) or from a control system like AMX or Crestron. This will be indicated by red light in the 'Speak' lamp in the microphone unit. At this point the delegate can switch off the microphone by pressing the ON/OFF microphone button. Microphones with Chairman priority will always be turned on directly.
VOX	VOX, voice activation mode, allows for the microphone units to be switched on automatically if speaking in the microphone or by pressing the microphone ON/OFF button. This is indicated by a red light in the 'Speak' lamp in the microphone unit. Pressing the microphone ON/OFF button again will turn the microphone off. The microphone turns of automatically after finished talking after the time defined in the "Release Time" setting, which is normally 4 seconds. The microphone can also be turned off by pressing the ON/OFF button. A Chairman Unit is always in Auto or VOX mode. **Please note, that Dual Units (like MU 6042) and units operation in a 'Microphone Sharing' mode cannot run in VOX mode.**

Individual modes (only with SW 6000)

When using SW 6000 it is possible to set individual modes for the units.

The parameters can be set individual for each conference unit:

Operation Mode	Use CU mode, FIFO, Manual, Automatic or VOX.	
Speak Priority	Use CU mode, 5 (Chairman), 4, 3, 2 (VIP), 1(Delegate) or No Speaking Rights Chairman (5) is the highest priority and the microphone will always be turned on regardless of operation mode. In the Request list a unit with higher speak priority will be placed before a unit with lower speak priority.	
Interrupt Ability	The Interrupt setting determines the microphone's ability to interrupt another speaker if the maximum number of speakers is reached. The key is as follows: Use CU mode Not allowed: Cannot interrupt another speaker. <=: Can interrupt a speaker with the same speak priority or a speak priority which is less than own speak priority. < : Can interrupt a speaker with a speak priority less than own speak priority.	

For most installations, the 'Operation Mode' for all units is set to use the system mode 'Use CU mode'. It means that the operation mode for the units is following the system modes, i.e. if the system is running in 'Manual mode' the Delegates Units will run in Manual mode.

When assigning units to run 'Use CU modes' the modes are found in the following table:

Unit	**Operation mode**	**Speak priority**	**Interrupt ability**
Chairman	Automatic	5	<=
Delegate	Use CU mode	1	Use CU mode
VIP	Automatic	2	Use CU mode

However for certain application, it is desirable to assign 'individual operations mode', where the units will always follow the individual mode settings independently of the 'System Setting'.

I.e. the following 'Units' can be created:

Unit	**Operation mode**	**Speak priority**	**Interrupt ability**
No Speaking Rights	Does not matter	0	Does not matter
VIP unit	Automatic	3	<
Secretary	Automatic	2	<
Delegate FIFO This unit will interrupts other delegates if the 'Maximum speaker' are reached	Use CU Mode		<=
Speaker stand This unit can always turn on except if 8 units with 'Speak priority"=5 is open	Automatic	4	<=

Language Selection functionality

Language selection is a feature, where the delegate can listen to either the floor (spoken) language or an interpreted language.

User Controls & Indications

The units featuring language selection will include on or two sets of the following controls and interfaces.

Display

This display is used for information purposes. This display has built in back light.

Channel buttons (two)

The buttons are used for changing the channel setting.

Volume buttons (two)

The buttons are used for changing the volume setting.

Headphone Connectors

Headphone Connector (mini-jack)

A mini jack located on the front plate for connecting a headphone for listening to the floor language or one of the interpreted languages.

Dual headphone Connectors (mini-jack)

Some units are supplied with two mini jacks located on the front plate for connecting a headphone for listening to the floor language or one of the interpreted languages.

Headphone Connector (Molex) (only "F" models)

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 on the following models:

- CM/DM 6080F
- CM/DM 6680F
- DM 6620F
- DM 6588F

This connecter is intended for use, where the connection to the headphone is remotely from the front plate, which is only on customised units.

Important: The 2 pin Molex jack is for professional use only.

Normal Operation

Channel Selection

Channel selection is done using the channel up and channel down buttons. Channel numbers can be from 0 to 31, however the indication in the display is abbreviations of the language selected i.e. ENG for English, SWE for Swedish.

The lowest channel (0=FLO) 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.

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.

Voting functionality

Voting functionality is a feature where delegates can cast their votes to various subjects using the DCS 6000 Conference Units.

The voting functionality is only available when the system if expanded with a PC running SW 6000 Conference Management software with the module 'SW 6060 Parliamentary Voting and Agenda' or by using the DC 6990P.

The various voting modes and voting functionality in general is explained in the SW 6000 CAA User Manual and in the DC 6990P section. However the functionality directly related to the 'Control & Indications' in the units is explained here.

User Controls & Indications

The units featuring voting functionality will include the following controls and interfaces.

Yes/Present (+) button

Pressing this button casts a 'Yes' vote or show the user as 'Present' to the system.

Abstain (0) button

Pressing this button casts a 'Abstain' vote.

No (-) button

Pressing this button casts a 'no' vote.

Yes/Present (+) LED

This yellow LED flashes alone, when the user have to present himself to the system as 'Present'. When the LED flashes together with the two other voting LED's the user can press any of the voting buttons to cast a vote.

Abstain (0) LED

When the LED flashes together with the two other voting LED's the user can press any of the voting buttons to cast a vote.

No (-) LED

When the LED flashes together with the two other voting LED's the user can press any of the voting buttons to cast a vote..

Normal operation

Attendance check

When the yellow 'Yes/Present (+) LED' flashes alone, the user can to present him to the system as 'Present' by pressing the 'Yes/Present (+) button'.

Cast a vote

When all the yellow voting LED's flashes, the user can cast his vote, by pressing any of the three voting buttons.

The user can cast his vote or change a vote as long time as the voting session is on-going.

If the voting parameter is selected as 'Secret' (done in the SW 6000) the LED's stop flashing after the vote is caste, however the user can still change his vote if needed.

Chip Card functionality

Chip Card functionality is a feature where delegates identify themselves to the system by use of a DIS chip-card. The Chip Card contains information like Delegate ID, Login Code and Location ID, which the DCS 6000 system uses to identify the user of the Conference Unit by getting the personal details from the database in the SW 6000.

The Chip Card functionality is only available when the system if expanded with a PC running SW 6000 Conference Management software with the module 'SW 6070 Chip Card Login'.

The functionality in general is explained in the SW 6000 CAA User Manual. However the functionality directly related to the 'Control & Indications' in the units is explained here.

The use of Chip Cards

This Chip Cards in use are delivered from DIS with options for programming the following information onto the cards:

Location ID

This is an ID related to the location of the installation. The location ID prevents the card to be used at other locations. All cards for one installation shall have the same location ID.

The location ID has to be entered in the 'Setup/Equipment/Chip Card' menu in the SW 6000 – CAA application.

Delegate ID

This ID is used to identify the user in the Delegate database in SW 6000. Each card must have a unique ID (1, 2, 3 etc).

The information for each delegate in 'Delegate' in the SW 6000 – CAA application will also have a unique 'Delegate ID' corresponding to the cards.

When a card is inserted in a conference unit, the software will identify the user by matching the 'Delegate ID' in the 'Delegate' database with the 'Delegate ID' on the card.

Login code

This is the password used to log the user into the system.

User Controls & Indications

The units featuring chip card functionality will include the following controls and interfaces.

Chip Card reader

The Chip Card reader is used together with the DIS Chip Cards for identifying a user to the system. The Chip Card reader (and Chip Cards) can only be used together with the SW 6000 software.

When in use, the Chip Card is inserted in the chip card reader.

Chip Card LED

This LED lights yellow, if it is required to insert the Chip Card, with the exception of the DC 6990P that does not have an LED.

When inserted the LED lights RED if the card is not accepted and lights GREEN if the card is accepted.

System Setup

DCS-LAN connector

In addition to the connectors mentioned in the previous section the following connectors are available on all units:

Two RJ45 sockets are located at the back of the units for connecting to the previous unit (an IS 6132 Interpreter set, CS 6032 Channel Selector, DM 6xxx Delegate Unit, DC 6990 P Conference Unit, the CU 61xx Central Unit or any other unit with a DCS LAN connector) and to the next unit.

Connect the 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.

General guidelines

Connect the DCS 6000 Conference 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

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

Settings

There are no settings to be done on the DCS 6000 conference units. The units are automatically recognized and receive a unique address in the system, when connected to the unique DIS digital communication bus - the DCS-LAN.

Electrical termination of DCS LAN Network

Before powering up your DCS 6000 system, you must ensure that the DCS LAN Network has been properly terminated. 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).

If the network is not terminated properly communication errors on the network may occur resulting in malfunction or degradation of the system performance.

4 pcs. of DCS LAN Network Termination Plug have been shipped with your DCS 6000 Central Unit.

Typical schematics

Please consult the CU 61xx User Manual for typical schematics

Starting up the system

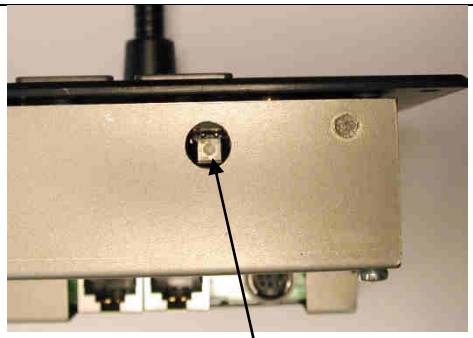
When the DCS 6000 Conference Units are connected to a CU 61xx Central Unit and the proper termination are made, the CU can be switched ON.

After powering up the system, the light-ring in DCS 6000 Conference Units will flash until the CU identifies the unit. As soon as this happens, the light-ring stop to flash and the unit is operational.

If a unit 'looses' the connection to the CU, it will start to flash until the connection is re-established.

Adjusting LCD contrast on units with channel selector

The contrast on the channel selector LCD display has been factory preset to a viewing angle of 45°. The contrast can be changed to a different viewing angle through the procedure described below.

1	Get the contrast adjustment tool, which has been shipped with your DCS 6000 Central Unit (see photo 1). A new adjustment tool can be ordered through your authorized DIS dealer. Order DIS p/n P0 45 00010.	 Photo 1
2	Connect the CM/DM 6xxxF to the DCS 6000 Central Unit and power up the system.	
3	Wait until text appears in the LCD display and the backlight is turned on.	
4	Locate the contrast adjustment hole in the back box of the unit (see photo 2). Units with two channel selectors have two adjustment holes in the back box, one for each of the LCD displays.	 Contrast adjustment hole Photo 2
5	Carefully insert the tip of adjustment tool into the adjustment hole until the tip of the tool makes contact/lock with the potentiometer located behind the hole (see photo 3 and 4).	 Insert tip of tool Photo 3
		 Potentiometer Photo 4
6	Turn the adjustment tool until the required contrast setting is obtained. Do not use excessive force when turning the tool, as this will cause the potentiometer to be damaged.	
7	Carefully extract the adjustment tool from the adjustment hole.	

Accessories

The following accessories are available for use with the DCS 6000 Conference Units:

Art no	Description	Illustration
GM 6523 **GM 6524** **GM 6524**	**Gooseneck Microphones with XLR plug** The gooseneck microphones are available in various lengths. To be connected to the XLR microphone connector GM 6523 Gooseneck mic, 40 cm GM 6524 Gooseneck mic, 50 cm GM 6525 Gooseneck mic, 63 cm	
BM 6620	**Boundary Microphone**	
HM 4042	**Hand Microphone with light ring** The HM 4042 Hand Microphone is designed for use with the MU 6040 C/D unit. The microphone is equipped with ON/OFF button, light ring as well as an indicator. With an extension cable the microphone can be connected to the MU 6040 to the HD15S connector or to the XLR connector on portable units. If connected to the XLR connector, the ON/OFF button as well as the indicator is not functioning. This indicator lights red when the microphone is ON and green when in request	
DH 6001H	**Delegate Headphone** This headphone is used with the built in channel selector in flush mounted units. To be connected to the headphone connector-	

Art no	Description	Illustration
DH 6021	**Delegate Stereo Headphone** This headphone is used with the DR 600x Receiver, DC 61xxP, DM 6680P and DC 6990P. To be connected to the headphone connector.	
CC 6010	**Chip Card** Chip card to use with Chip Card reader	
JB 6104	**Junction Box**	
EC 6001-xx	**Cat 5e Connection Cables (AWG24)** The EC 6000 series cables are used to connect the various units in the DCS 6000 system using the DCS-LAN connector: **Type** EC 6001-.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 6001-30 Connection Cable 20 m EC 6001-50 Connection Cable 50 m	
CO 6000 RJ45 terminator	**DCS-LAN Termination plug**	

Refer to Setup section for information in how to setup the system using the above menus.

Technical Specifications

System Specification

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%

General

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

Power consumption 1W-3W

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)

Connectors

DCS-LAN loop through..... 2 pieces RJ45

Specifications are subject to change without notice.

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.

HD15 connector

The HD15 connector on the MU 6040 D/C and MU 6042 has the following PIN layout:

Pin	Signal	Cable type
1	- Loudspeaker output	DIS type: #2029 or according to the specific installation.
2	Speak 1 LED	
3	Request 1 LED	
4	ON/OFF 1 button input	
5	Delegate OFF button / *ON/OFF 2 button input	
6	Optional input	
7	+ Loudspeaker output (8 ohm)	
8	NC	
9	*Speak 2 LED	
10	+ lamp	
11	+5V	
12	0V	
13	MIC ground	
14	+ MIC	
15	*Request 2 LED	

**** Only connected on MU 6042***

Connection of GM 652x to AM/MU 6040

AM/MU 6040 – HD 15		GM 652x – XLR 3P	
Pin	Comments	Pin	Comments
10	+ lamp	4	House
12	0V	3	
13	MIC ground	1	
14	+ MIC	2	

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

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