



SENATOR™

FULLY DIGITAL & NETWORKED
CONFERENCE, MEETING AND PRESENTATION
DSP SYSTEM



Xavtel Communications, Inc.

21 Sabin Street Pawtucket, RI 02860, USA | +1 401-727-1600 | www.xavtel.com
Celsiusstraat 1 - 2652 XN Lansingerland, Netherlands | +31(0)10 2088690 | europe.sales@xavtel.com



**AS A LEADING COMPANY IN THE DEVELOPMENT
AND MANUFACTURING OF AUDIO / VIDEO
SOLUTIONS FOR PROFESSIONAL AUDIO AND
CONFERENCING MARKETS, XAVTEL HAS OVER
10 BRANCH OFFICES AND MORE THAN 40
REPRESENTATIVES AROUND THE WORLD**

Leveraging its expertise in development and manufacturing high-end audio products. Xavtel also offers a line of highly reliable conference solutions. Xavtel's proprietary extreme fast RAPIDO™ Acoustic Echo Cancellation algorithm achieves excellent conferencing audio quality and voice clarity.

Xavtel is constantly expanding its organization, portfolio and geographical presence to achieve "best in class" technology, delivery, and customer support.

At Xavtel innovation never stops. Our mission is to constantly develop innovative products that improve on what is currently in the market place and delight installer and end-user alike.

DEVELOPMENT

Building on 30 years' experience in the development and manufacturing of electronics for the audio industry and with a development team with massive dedicated and highly experienced engineers, Xavtel operates state of the art R&D and manufacturing facilities in USA, Europe and Asia. We are able to respond rapidly to the demands of our various vertical markets with specific solutions, creative innovation and advanced technology. You can rest assured that our technology is always cutting-edge with a view to the future.

Xavtel®

Index



APPLICATIONS

- Enterprise Meeting Room
- Education Institution
- Conference Rooms with Simultaneous Interpretation
- University and Campus Applications

...or any other project which requires a secure, high fidelity integrated conferencing system.

Senator System
Overview 04

Senator System
Features 06

Digital Conference & AEC Processor
DCP1000 08

Digital Mix-Minus Conference Amplifier 60W, 6 CH
DCA660 10

Digital Network Mic Junction Box
DDB104 11

DSP Desktop Microphone
CDM1000 12

RFID, Voting, Desktop Microphone
CDM2000 13

5" TouchScreen DSP Desktop Microphone
CDM-T5 14

Flush Mount Mic Base/Voting Keypad
CFM-MAIN/CFM-VK 15

Voting Unit, Attached Type/Direct Connect
VOTEPAD-AT/VOTEPAD-DR 15

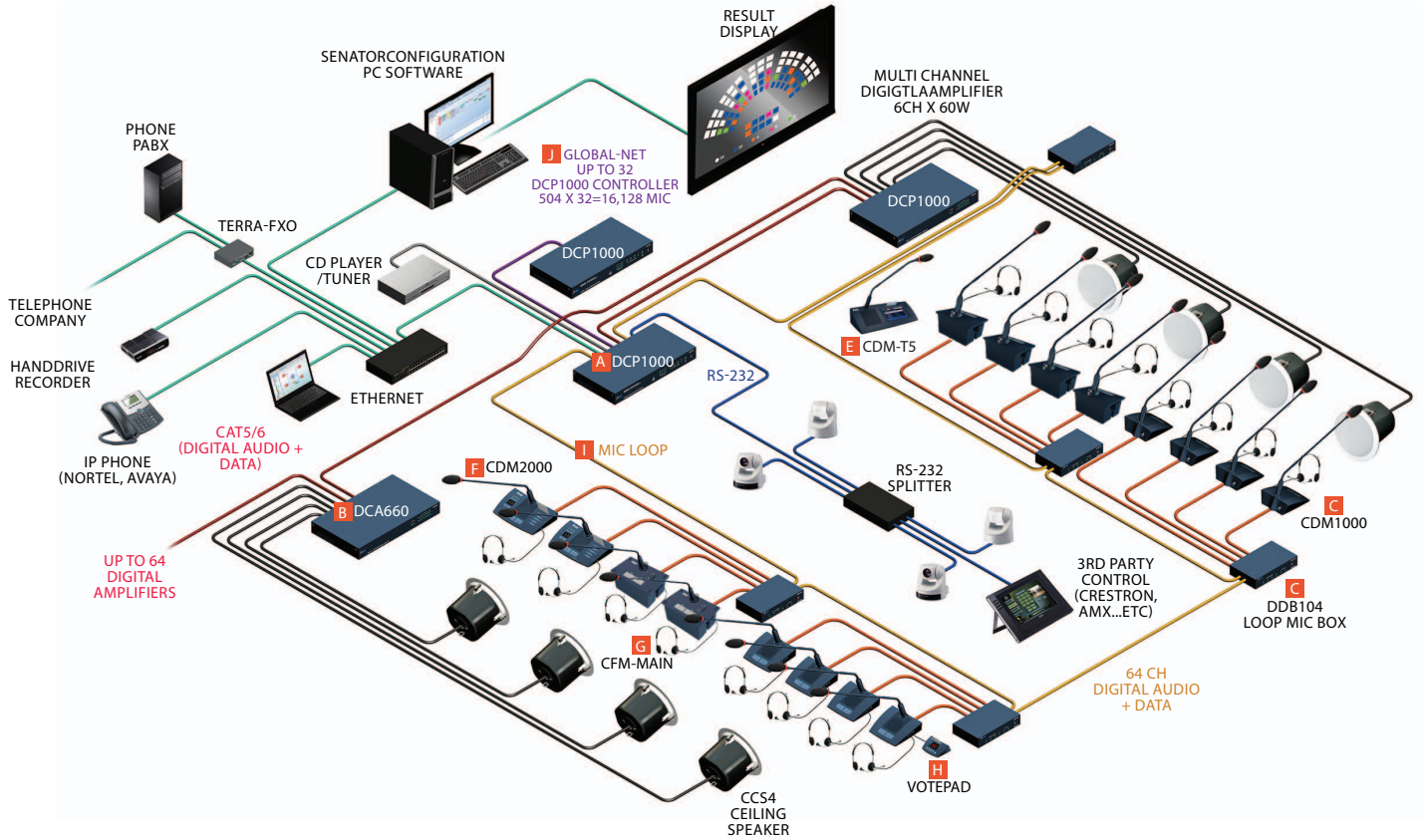
Gooseneck Microphone/Cables/Local Net Card
Accessories 16

Control Software
Senator Designer 17

Digital Signal Processing
DSP Functions 18

SENATOR™

FULLY DIGITAL & NETWORKED
CONFERENCE, MEETING AND PRESENTATION
DSP SYSTEM



SENATOR SYSTEM

The Senator System is a fully integrated, digital and networked conference system. Using a single DCP1000 processor, it is capable to connect up to 504 CDM delegate units and up to 64 DCA660 digital amplifiers. An entire system can be expanded up to 32 processors via a 64 channels digital audio network. To highest audio quality, each delegate unit can be individually processed with functions including Automatic Gain Control (AGC), 8 Band PEQ, Voice Activated Gate, Hi/Lo Pass Filter, Feedback Suppressor and Gain-Sharing Auto Mixer. The Senator System also incorporates our "industry first" self adjusting "**Mix-Minus Auto Calibration**" feature, which will automatically calibrate the system, to the perfect "gain before feedback" for the room, and also includes measuring the room acoustics of each and every room.

The Senator system supports an NOM of 8 microphones activated simultaneously (Maximum NOM = 8 channels). The DCP1000 processor also contains independent Stereo Line In/Out channels and a separated Mic In/Out on XLR connectors, which adapts to multi-purpose conference, presentation and meeting. The DCP1000 uses two redundant Audio-Network Loops (CDM-Net-Loop) to deal with unexpected cable disconnection, these loops will be connected via the CDM-Net-Loop Cards, which will be available for either CAT cable connection or fibre optics connection.

Xavtel's optional **AEC-Card** module offers the brand new developed **RAPIDO™** AEC algorithm, which can be installed on the main board of the DCP1000 processor and allow for easy integration of Acoustic Echo Cancellation (AEC) without the need for an external DSP processor !

The DCP1000 also contains an RS232 port for 3rd party control (cameras, projectors, etc.), or as the interface to provide VoIP and SIP functionality if the optional AEC-Card is installed. The PC/Laptop based Senator Designer suite software will enable the user to program and control the entire system configuration and any DSP parameter adjustment. The Senator system provides 5 different conferencing modes (FIFS, FIFO, Priority, Delegate Request RQ and Chairman Mode). Meeting and Conferencing has never been easier and faster!

A DCP1000

DIGITAL CONFERENCE & AEC PROCESSOR

- 8 NOM simultaneously or 4 NOM when AEC-Card installed
- 6 channels simultaneous translation built-in
- 2 redundant loops
- Voice activated gate, filters, AGC, PEQ, AEC & mix minus, etc.

B DCA660

DIGITAL MIX-MINUS CONFERENCE AMPLIFIER 60W, 6 CH

- 6 channels, each channel is with 60W of power on a 4 ohm load
- Connect up to 64 DCA660 units per processor
- Industry first Auto-Mix-Minus-Calibration for every room setup

C CDM1000

DSP DESKTOP MICROPHONE

- Support 3rd party XLR gooseneck microphones
- Including built-in speaker, function-oriented & talk buttons with LEDs
- Desktop delegate unit with 3 selectable functions: delegate, chairman or interpreter

D DDB104

DIGITAL NETWORK MIC JUNCTION BOX

- Up to 63 DDB104 can be cascaded to a single CDM-Net-Loop card in the DCP1000 processor
- Redundant loop connection between DCP1000 processor and DDB104

E CDM-T5

5" TOUCHSCREEN DSP DESKTOP MICROPHONE

- Desktop delegate unit with 3 selectable functions: delegate, chairman or interpreter
- Including a speaker, a 5" LCD touch screen, a RFID reader and voting buttons
- Full system control unit including dialer, volume controls and conference management
- USB audio connection for web-conferencing applications

F CDM2000

RFID, VOTING, DESKTOP MICROPHONE

- Support 3rd party XLR gooseneck microphones
- Desktop delegate unit with 3 selectable functions: delegate, chairman or interpreter
- 5 voting buttons and RFID card reader for sign-in

G CFM-MAIN/CFM-VK

FLUSH MOUNT MIC BASE/VOTING KEYPAD

- Support 3rd party XLR gooseneck microphones
- CFM-MAIN: Function buttons and status LEDs
- CFM-VK: Voting buttons and RFID card reader

H VOTEPAD-AT/VOTEPAD-DR

VOTING UNIT, ATTACHED TYPE/DIRECT CONNECT

- RFID card reader, 5 voting buttons and LCD screen
- VOTEPAD-AT connects to CDM1000
- VOTEPAD-DR connects to DDB104

I MICROPHONE LOOP(CDM-NET-LOOP)

One DCP1000 can handle up to 2 CDM-Net redundant loops. Each loop can connect up to 63 DDB104 boxes; each DDB104 can connect 4 delegate units. Hence, up to 504 delegate units can be connected per DCP1000.

J GLOBAL-NET (DCP-NET-LOOP)

With proprietary DCP-Net redundant loop, Senator offers high-security network and provides either CAT5/6 or fiber optical connections with distances up to 330ft (100m) and 6.6 ft ~ 66 kft (2 km~20 km) in between DCP1000 processors.



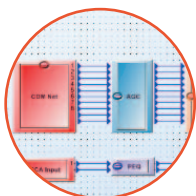
SENATOR™

FULLY DIGITAL & NETWORKED
CONFERENCE, MEETING AND PRESENTATION
DSP SYSTEM



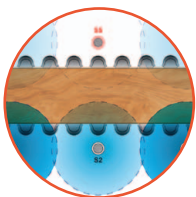
SOPHISTICATED CONFERENCE SYSTEM

- One DCP1000 processor is able to connect to up to 504 Delegate Units via 63 DDB104 Mic Junction Boxes and up to 64 DCA660 digital 6 channels amplifiers.
- The Senator Designer software provides flexible DSP settings and intuitive GUI to setup the system.
- The DCP1000 offers multiple interfaces: USB2.0 connector, XLR Mic In/Out, RCA line in/out, RS485, RS232 and RJ45 Ethernet port.
- 6 channels simultaneous translation built-in without external IR system.



BREATHTAKING DSP FUNCTIONS

- Each delegate unit can be individually processed with AGC, 8 Band PEQ, Voice Activated Gate, Hi/Lo Pass Filters, Feedback Suppressors and Gain-Sharing Auto Mixers and AEC (Acoustic Echo Cancellation).
- "Voice Activated Gate" enables the delegate units to only turn on while human voice is detected. No other noise will turn on the mics' gate.



MIX-MINUS AUTO CALIBRATION

- Avoid feedback by automatically setting the suitable gain parameters before feedback for every room.
- Each delegate unit or parameter setting can be individually and manually adjusted after auto calibration.



ACOUSTIC ECHO CANCELLATION AND VOIP FUNCTIONS

(AEC Module with RAPIDO™ Algorithm)

- Optional AEC-Card includes our latest technology, the RAPIDO™ AEC algorithm, the Senator System will work independently of any external AEC DSP device, and support VoIP functions for remote conferencing (SIP3 protocol).
- The ultra-fast converging RAPIDO™ AEC algorithm can handle up to 353ms of tail length for a NOM of 4 microphones simultaneously.
- Four kinds of solution to proceed a remote conferencing with a Senator system using the AEC-Card
 - (1) Another Senator System
 - (2) SIP IP phones (VoIP)
 - (3) Analog phone line (via Terra-FXO)
 - (4) TERRACOM devices

NETWORK REDUNDANCY

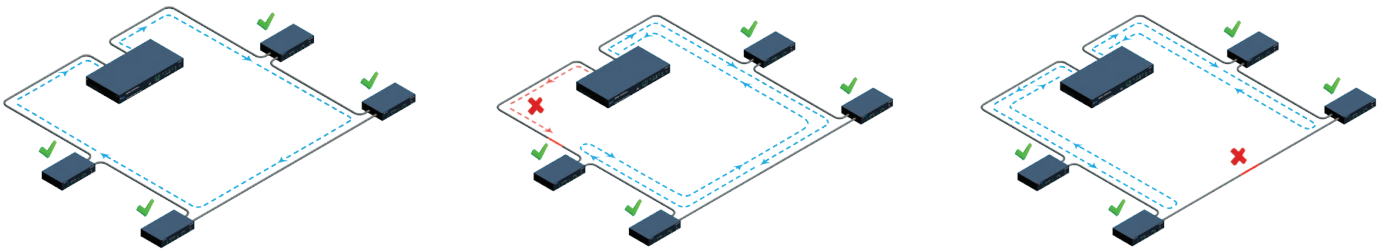
Senator system has two redundant loops wiring to deal with unexpected cable disconnection and make it continually functional.

- CDM-Net loop: The connection between DDB104 microphone junction boxes to DCP1000 processor
- DCP-Net loop: The connection between DCP1000 processors



CDM-Net Loop:

Even the connection between DCP1000 processor and DDB104 boxes or between DDB104 boxes is disconnected, the rest of CDM-Net loop will continue to function.



MORE FUNCTIONS & ACCESSORIES

- Interactive speed dome cameras can be connected to the DCP1000 via RS232, RS485, or the Ethernet port. The Senator System supports 3 different types of protocols including: PELCO-D, PELCO-P and VISCA.
- The VotePad AT (Attached to CDM1000) and VotePad DR (Directly connected to DDB104) provides voting and sign-in functions, allowing to display the results of voting and rating.
- A USB 2.0 port located at the front of the DCP1000 for either recording or message playback using a USB flash drive with up to 256 GB memory storage.



SENATOR™

FULLY DIGITAL & NETWORKED
CONFERENCE, MEETING AND PRESENTATION
DSP SYSTEM

DCP1000 DIGITAL CONFERENCE & AEC PROCESSOR



The DCP1000 Digital DSP Processor is the central controller of the Senator System. One processor has 2 CDM-Net-Loop card slots, and the second optional card can be integrated to expand the system having 2 redundant loops for up to 504 delegate units. Using the digital link (MDA) between DCP1000 and DCA660 distribution amplifiers allows to cascade up to 64 units via CAT5/6. The DCP1000 supports multiple interfaces like recording, XLR balanced line In/Out, RCA stereo line In/Out, RS485, RS232 and an RJ45 Ethernet port, 3rd party control, controlling PTZ cameras can be easily handled. The DCP1000 integrates DSP functions such as Voice Activated Gate, AEC, PEQ, AGC, FBX and Mix-Minus calibration, each of them can be adjusted, stored and processed individually for each delegate unit. With Xavtel's optional AEC-Card using our ultra-fast RAPIDO™ AEC algorithm, the Senator system is capable to use VoIP and SIP functionality for distance and web-conferencing applications. The Senator system supports an NOM of 8 microphones activated simultaneously (changes to NOM of 4 if AEC is activated).

FEATHERS

- Up to 504 delegate units and 64 DCA660 amplifier can be connected to a single DCP1000
- Up to 32 DCP1000 can be connected via the 64 Ch. Xavnet digital audio network
- Each connected delegate unit will be processed individually and all parameters will be stored in the DCP1000
- Enhanced DSP functions such as 8 Band PEQ, AGC, Feedback Suppressor, Gain Sharing Auto Mixer and Voice Activated Gate
- Optional AEC-Card available using the ultra-fast RAPIDO™ AEC algorithm, enabling SIP and VoIP for distance and web conferencing
- Special features like Auto-Mix-Minus Calibration, USB recording, 6Ch. simultaneous translation built-in
- Ease of use and setup with auto network deploy and special drag 'n' drop functions with the Senator Designer software

TECHNICAL SPECIFICATIONS

ELECTRICAL

- Mains power: 100 ~ 240 VAC \pm 10 %, 50/60 Hz
- Power consumption: 12 watts
- Maximum supply: 130W for DDB104 boxes and microphone
- Frequency response: 20 Hz ~ 20 kHz @ -1 dB
- THD+N: < 0.05 % (1 kHz @ 0 dBu)

FRONT PANEL

- USB 2.0 connector
- Eight activated mic channel LED
- Network LED, mic-link LED, ethernet LED, MDA LED, input LED, REC LED and power LED

REAR PANEL

- CAT5/6 or fiber optic connector for CDM-Net loop x2
- RS485 and RS232 connector for third party control
- CAT5/6 connector for DCA660 amplifiers
- RJ45 connector for ethernet
- XLR connector for mic input and line output
- RCA connector for line input and line output
- AC power connector with 5A fuse

MECHANICAL

- Dimensions (W x H x D): 19" x 1.7" x 8.3" inch (482 x 44 x 210 mm)
- Weight: 5.5 lbs (2.5 kg)
- Color: PANTONE 7546C

ENVIRONMENTAL

- Operating temperature: +23 °F ~ +131 °F (-5 °C ~ +55 °C)
- Storage temperature: -40 °F ~ +158 °F (-40 °C ~ +70 °C)
- Relative humidity: 20% to 95% noncondensing

CERTIFICATIONS

- CE marked, UL listed, RoHs compliant



ORDERING INFORMATION

	Model No.	Step 1	Step 2	Step 3	Description of Model
	DCP1000	Local Net Card	DCP Local Net Card	AEC Card	DCP1000 without Net-Loop-Card
Local Net Cards	-	L1	-	-	CDM Net-Loop-Card CAT/CAT
	-	L2	-	-	CDM Net-Loop-Card CAT/FO Multi Mode
	-	L2S	-	-	CDM Net-Loop-Card CAT/FO Single Mode
	-	L3	-	-	CDM Net-Loop-Card FO/FO Multi Mode
	-	L3S	-	-	CDM Net-Loop-Card FO/FO Single Mode
	-	L4	-	-	CDM Net-Loop-Card FO Multi Mode/CAT
	-	L4S	-	-	CDM Net-Loop-Card FO Single Mode/CAT
	-	2L1	-	-	2 CDM Net-Loop-Card CAT/CAT
	-	2L2	-	-	2 CDM Net-Loop-Card CAT/FO Multi Mode
	-	2L2S	-	-	2 CDM Net-Loop-Card CAT/FO Single Mode
	-	2L3	-	-	2 CDM Net-Loop-Card FO/FO Multi Mode
	-	2L3S	-	-	2 CDM Net-Loop-Card FO/FO Single Mode
	-	2L4	-	-	2 CDM Net-Loop-Card FO Multi Mode/CAT
	-	2L4S	-	-	2 CDM Net-Loop-Card FO Single Mode/CAT
DCP Local Net Cards	-	-	None	-	None
	-	-	D1	-	DCP Net-Card CAT/CAT
	-	-	D2	-	DCP Net-Card CAT/FO Multi Mode
	-	-	D2S	-	DCP Net-Card CAT/FO Single Mode
	-	-	D3	-	DCP Net-Card FO/FO
	-	-	D3S	-	DCP Net-Card FO/FO Single Mode
	-	-	D4	-	DCP Net-Card FO/CAT Multi Mode
	-	-	D4S	-	DCP Net-Card FO/CAT Single Mode
AEC Card	-	-	-	None	None
	-	-	-	A	2CH AEC Card

SENATOR™

FULLY DIGITAL & NETWORKED
CONFERENCE, MEETING AND PRESENTATION
DSP SYSTEM

DCA660

DIGITAL MIX-MINUS CONFERENCE AMPLIFIER 60W, 6 CH



The DCA660 is a digital conference amplifier which comes with 60W x 6CH of power on a 4 ohm load. Up to 64 units can be daisy chained via standard STP CAT5/6 cable to the DCP900 conference processor. The different ID numbers of each DCA660 will be set via the DIP switch located on the rear side of each amplifier. The DCA660 also has all necessary protection circuits on board to detect the issue of overload or overheat and protect the device against all potential hazards. In addition, the status LEDs will light up when overload or overheat issue occurs.

The DCA660 comes with extra DSP power and provides the industry first Mix-minus auto calibration, this unique function will automatically adjust the suitable parameters to prevent the feedback.

Due to the fact that Xavtel uses a proprietary digital audio protocol to connect the DCA660 via the MDA Link connection, the distance between the DCP900 and each connected DCA660 amplifier can be up to 328 ft/100m (STP CAT5/6), this will allow for the most flexible and distant installations.

FEATURES

- Up to 64 DCA660 amplifiers can be connected to a single DCP900 processor
- Fully digital audio link to the DCP900 processor
- Additional DSP functions like Gain-Sharing Auto Mixer, 5 bands PEQ, Feedback Suppressor and Delay
- Mix-minus auto calibration will automatically adjust the suitable parameters to prevent the feedback
- 6 Amp Channel Status LEDs and 6 Amp Channel Signal LEDs to recognize the channel fault and audio signal
- Distance up to 328 ft/100m (STP CAT5/6) between the DCP900 and DCA660

TECHNICAL SPECIFICATIONS

ELECTRICAL

- AC power input: 100 ~ 240 VAC \pm 10 %, 50/60 Hz
- Nominal output power: 60W x 6 channels
- Power consumption: 500W
- Maximum supply: 500W

AUDIO CHARACTERISTICS (GENERAL)

- A/D-D/A bit resolution: 24 bit
- Sampling rate: 48 kHz
- Frequency response: 20 Hz ~ 20 kHz @ -3 dB
- THD+N: 0.2 % (20 Hz ~ 20 kHz @ -3 dBu)
- Crosstalk (between channels @ 1 kHz): < -50 dB @ 26 dB Gain, 0 dBu in

FRONT PANEL

- 6 amp channel LEDs for status indication
- 6 amp channel LEDs for signal indication
- Power LED and MDA digilink LED

REAR PANEL

- RJ45 (STP CAT5/6) for DCA660 MDA network
- Device ID DIP switch for DCA660 identification
- 6 euro-block connectors for loudspeakers (60W/4 ohm load)
- AC power connector with 6A fuse

MECHANICAL

- Dimensions (W x H x D): 19" x 1.7" x 10.2" (482 x 44 x 260 mm)
- Weight: 77 lbs (3.5 kg)
- Color: PANTONE 7546C

NETWORK

- Max. distance between DCA660 and DCP900: 328 ft/100m (STP CAT5/6)

ENVIRONMENTAL

- Operating temperature: +23 °F ~ +131 °F (-5 °C ~ +55 °C)
- Storage temperature: -40 °F ~ +158 °F (-40 °C ~ +70 °C)
- Relative humidity: 20% to 95% noncondensing

CERTIFICATIONS

- CE marked, UL listed, RoHs compliant

ORDERING INFORMATION

- DCA660: Digital Mix-Minus Conference Amplifier 60W, 6 CH

DDB104 DIGITAL NETWORK MIC JUNCTION BOX



DDB104 is the main network connection box between the DCP1000 digital conference processor and the CDM delegate units. It will be connected by using the CDM-Net-Loop cables. The cables can transport power, digital audio and data between CDM devices and the DCP1000. Due to the high-speed network, it allows to store all data of each delegate unit into the DCP1000 and recall the data at the moment the CDM unit is engaged. It saves a lot of processing power, but allows the System for unique DSP functions! To prevent unexpected cable disconnection, the DDB104 can communicate to one DCP1000 processor by 2 CDM-Net-Loop connections (Closed Ring). This makes the whole System completely redundant! Up to 63 DDB104 units can be connected to a single CDM-Net-Loop card. Each unit can handle 4 delegate units or other devices such as VOTEPAD-DR. It has the LED indicator on the front panel to recognize faulty disconnection. There are 2 types of interfaces available for the DDB104: CAT5/6 or Fiber Optic connections.

FEATURES

- Connect up to 63 DDB104 in one CDM-Net-Loop card
- 2 CDM-Net-Loop is possible in one DCP1000 processor
- 4 XLR microphone connectors to connect to delegate units
- 2 types of CDM-Net-Loop connection: CAT5 up to 328 ft (100M) or Fiber Optic (Multi Mode or Single Mode) up to 6561 ft (2000M)
- LED signal for indication of CDM-Net-Loop status



TECHNICAL SPECIFICATIONS

ELECTRICAL

- Local power: 24VDC
- Power consumption: 230 mA, 5.5W
- Maximum supply*: 6A

FRONT PANEL

- Four active mic channel LEDs
- 2 mic link LED for CDM-Net loop
- A power LED

SIDE PANEL

- 2 types of interface for CDM-Net
 - RJ45 connector + powerpole connector (24VDC)
 - Fiber optic connector + powerpole connector (24VDC)

REAR PANEL

- 24 VDC, 3.81 mm Euro-block connector for external power supply
- 4 mini-XLR connector for microphones

*Normally, the power of DDB104 mic junction box is supplied by processor, but if large amounts of DDB104 boxes are connected, the external power supply will be necessary. However, the maximum current for CDM-Net is 6A.

MECHANICAL

- Dimensions (W x H x D): 3.6" x 1.5" x 6.9" (92 x 37 x 175 mm)
- Weight: 3.1 lbs (1.4 kg)
- Color: Black

MAXIMUM CONNECTION LENGTH

- 328 ft (100 m) for CAT5 cable
- 6561 ft (2000 m) for fiber optic

CERTIFICATIONS

CE marked, UL listed, RoHs compliant

ORDERING INFORMATION

There are 7 types of model available for the connection between the DDB104 and the CDM-Net-Loop-Card(s) of DCP1000

- DDB104L1: CDM Net-Loop-Card CAT/CAT
- DDB104L2: CDM Net-Loop-Card CAT/FO Multi Mode
- DDB104L2S: CDM Net-Loop-Card CAT/FO Single Mode
- DDB104L3: CDM Net-Loop-Card FO/FO Multi Mode
- DDB104L3S: CDM Net-Loop-Card FO/FO Single Mode
- DDB104L4: CDM Net-Loop-Card FO Multi Mode/CAT
- DDB104L4S: CDM Net-Loop-Card FO Single Mode/CAT

SENATOR™

FULLY DIGITAL & NETWORKED
CONFERENCE, MEETING AND PRESENTATION
DSP SYSTEM

CDM1000 DSP DESKTOP MICROPHONE



The CDM1000 is a multi-usable desktop microphone base. It comes with two buttons and status LEDs for speaking or function selection, and a XLR connection to connect to Xavtel's gooseneck microphones, the mic is available in different length (26/40/48/60cm), 3rd party microphones can also be supported. The CDM1000 contains a built-in loudspeaker for smaller applications with no external amplification. The volume setting for this loudspeaker can be done with the volume pot at the right side of the unit. At the same side, there are 3 mini jack connectors, one is a microphone input, the second a line output, the third is for future use (VOTEPAD-AT).

The Senator Designer software allows the CDM1000 to be programmed and switched from the standard "Delegate mode" into an "Interpreter mode", making it as an easy and cost effective Interpreter station. In this case, either the internal loudspeaker and microphone of CDM1000 can be used for the interpreter (sitting in a different room) or the mini jack connections can be used to connect to a 3rd party headset; therefore, the interpreter can sit in the same room and listen to the floor channel while translating into another language. The two LEDs placed over the talk and the function buttons will indicate the status of the CDM1000.

FEATURES

- Desktop Delegate Unit with 3 selectable functions: delegate, chairman or interpreter
- Built in loudspeaker with integrated AEC (Acoustical Echo Cancellation)
- Connections for headset and VOTEPAD (future option) and volume control
- XLR connector connects to any of Xavtel's gooseneck microphones (3rd party mics will also be supported)
- A 2.5m mic cable is included to connect to the DDB104 Mic Junction Box
- The two buttons and LEDs for speaking or function selection

TECHNICAL SPECIFICATIONS

ELECTRICAL

- Mains power: 24 VDC
- Power consumption: 3.5 watts @ max.
- Frequency response: 40 kHz ~ 18 kHz @ -2 dB
- THD+N: < 0.05 % (40 Hz ~ 18 kHz @ 0 dBu)

FRONT PANEL

- 2 buttons with LED, namely "function-oriented" and "talk"
- 3 pin standard XLR connector for microphone

SIDE PANEL

- Volume control for built-in loudspeaker
- 3.5mm female phone jack/mic input
- 3.5mm female phone jack/headphone output
- 4 pin, 3.5 mm pad for accessories such as VOTEPAD-AT

REAR PANEL

- 5 pin XLR connector for connecting to DDB104 mic junction box

MECHANICAL

- Dimensions (W x H x D): 6" x 6.1" x 2" (152 x 155 x 50 mm)
- Weight: 1.76 lbs (0.8 kg)
- Color: PANTONE 7546C

ENVIRONMENTAL

- Operating temperature: +23 °F ~ +131 °F (-5 °C ~ +55 °C)
- Storage temperature: -40 °F ~ +158 °F (-40 °C ~ +70 °C)
- Relative humidity: 20% to 95% noncondensing

CERTIFICATIONS

- CE marked, UL listed, RoHs compliant

ORDERING INFORMATION

- DCM1000: DSP Desktop Microphone, w/o mic

CDM2000

RFID, VOTING, DESKTOP MICROPHONE



The CDM2000 is a multi-function desktop microphone base. It comes with a built-in loudspeaker, two buttons and status LEDs for speaking or function selection, a RFID card reader, five buttons for voting and rating, four buttons with LED for displaying channel selection/volume adjustment, and a XLR connection to connect to Xavtel's gooseneck microphones, the mic is available in different length (26/40/48/60 cm), 3rd party microphones can also be supported. There are two mini jack connectors, one is a microphone input, the other is a line output.

The Senator Designer software allows the CDM2000 to be programmed and switched from the standard "Delegate mode" into an "Interpreter mode", making it as an easy and cost effective Interpreter station. In this case, either the internal loudspeaker and microphone of CDM2000 can be used for the interpreter (sitting in a different room) or the mini jack connections can be used to connect to a 3rd party headset; therefore, the interpreter can sit in the same room and listen to the floor channel while translating into another language. The two LEDs placed over the talk and the function buttons will indicate the status of the CDM2000.

FEATURES

- Desktop Delegate Unit with 3 selectable functions: delegate, chairman or interpreter
- 5 buttons for voting and rating
 - Yes(+), no(-) and abstain(x) for parliamentary voting
 - Numerals 1 to 5 for multiple choice, opinion polling and rating
 - Rating scale: -, -, 0, +, ++ for audience response
- Voting functions and voting instruction displayed can be configured by Senator Designer software
- RFID card reader for sign-in identification
- Built in loudspeaker with integrated AEC(Acoustical Echo Cancellation)
- Connections for headset and volume control
- The two buttons (Talk, Function) and LEDs for speaking or function selection
- XLR connector connects to any of Xavtel's gooseneck microphones (3rd party mics will also be supported)
- A 2.5m mic cable is included to connect to the DDB104 Mic Junction Box

TECHNICAL SPECIFICATIONS

ELECTRICAL

- Main power: 24 VDC
- Power consumption: 250 mA @ Max.
- Frequency response: 40 ~ 18 kHz @ -2 dB
- THD+N: < 0.05 % (40 Hz ~ 18 kHz @ 0 dBu)

FRONT PANEL

- 2 buttons with LED: speak and function selection
- 3-pin standard XLR connector for delegate unit
- 5 buttons for voting or rating
- 2 buttons with LED indicator for selecting speaker mode, headphone mode, and intercom mode
- 2 buttons with LED display for volume adjustment
- RFID card reader for sign-in

SIDE PANEL

- 3.5mm female phone jack/mic input
- 3.5mm female phone jack/headphone output

REAR PANEL

- 5-pin XLR connector for connecting to DDB104

MECHANICAL

- Dimensions (W x H x D): 9.1" x 2.2" x 5.6" (230 x 57 x 142 mm)
- Weight: 1.98 lbs (0.9 kg)
- Color: PANTONE 7546C

ENVIRONMENTAL

- Operating temperature: +23 °F ~ +131 °F (-5 °C ~ +55 °C)
- Storage temperature: -40 °F ~ +158 °F (-40 °C ~ +70 °C)
- Relative humidity: 20% to 95% noncondensing

CERTIFICATIONS

- CE marked, UL listed, RoHs compliant

ORDERING INFORMATION

- CDM2000: RFID, Voting, Desktop Microphone, w/o mic

SENATOR™

FULLY DIGITAL & NETWORKED
CONFERENCE, MEETING AND PRESENTATION
DSP SYSTEM

CDM-T5 5" TOUCHSCREEN DSP DESKTOP MICROPHONE



The CDM-T5 Desktop Chairman Delegate comes with 5" LCD touch screen, a built-in loudspeaker, XLR connection for the Xantel's gooseneck microphones, the mic is available in different length, and also includes the connection for an external headset. The CDM-T5 allows for the full system control of the Senator System, from the capability of volumes changes, settings, paging and dialing if used in a distance or web-conference. The CDM-T5 has a mini USB connector, allowing for an easy-to-setup web-conferencing system with the use of optional AEC-Card of DCP1000 for a direct connection to any PC/Laptop. This unique feature allows every standard conference to become either a distance conferencing or a web conferencing system at the same time. No more integration or extra cabling of the system will be needed!

The CDM-T5 also offers a dedicated paging button, which allows for preselected zone paging. The dialer section has either a speed dial page or a numeric page to either recall preprogrammed connections via SIP Server (WAN) and direct to VoIP Phones or VoIP PBX systems, or to directly dial any number needed to make a distance conference connection. The CDM-T5 is capable to start the Auto-Mix-Minus calibration with the push of one button. Once the system is cabled and programmed, it will work as a stand-alone system and make all necessary adjustments. The CDM-T5 also offers 2 mini jack party connectors next to the mini USB to connect any 3rd party headsets to the system.

FEATURES

- Desktop Chairman Delegate Unit with 5" touch screen
- Multi language interface (every language possible)
- Full system control unit including dialer, volume controls and conference management
- Built in loudspeaker with integrated AEC (Acoustical Echo Cancellation)
- USB audio connection for easy to use web-conferencing applications (needs AEC-Card installed into DCP1000)
- XLR connector connects to any of Xantel's gooseneck microphones (3rd party mics will also be supported)
- A 2.5m mic cable is included to connect to the DDB104 Mic Junction Box

TECHNICAL SPECIFICATIONS

ELECTRICAL

- Mains power: 24 VDC
- Power consumption: 3.5 watts @ max.
- Frequency response: 40 kHz ~ 18 kHz @ -1 dB
- THD+N: < 0.05 % (40 Hz ~ 18 kHz @ 0 dBu)

FRONT PANEL

- 5" LCD touch screen
- 3 LED for recognizing status of microphone
- 3 LED for recognizing status of microphone
- RFID card reader for sign-in

SIDE PANEL

- 3.5mm female phone jack/mic input.
- 3.5mm female phone jack/headphone output

REAR PANEL

- 5 pin XLR connector for connecting to DDB104 mic junction box

MECHANICAL

- Dimensions (W x H x D): 11.2" x 6.9" x 3.1" (284 x 174 x 80 mm)
- Weight: 2.42 lbs (1.1 kg)
- Color: PANTONE 7546C

ENVIRONMENTAL

- Operating temperature: +23 °F ~ +131 °F (-5 °C ~ +55 °C)
- Storage temperature: -40 °F ~ +158 °F (-40 °C ~ +70 °C)
- Relative humidity: 20% to 95% noncondensing

CERTIFICATIONS

- CE marked, UL listed, RoHs compliant

ORDERING INFORMATION

- CDM-T5: 5" TouchScreen DSP Desktop Microphone, w/o mic

CFM-MAIN/CFM-VK FLUSH MOUNT MIC BASE/VOTING KEYPAD


CFM-MAIN
CFM-VK

The CFM flush-mount series is designed for the customized application of a conference or presentation system, the 2 different CFM units can work as stand-alone, or as a group of two units. The CFM-MAIN micbase comes with a standard 3-pin XLR connection to connect to Xavtel's gooseneck microphones, the mic is available in different length (26/40/48/60cm), 3rd party microphones can also be supported, and has two buttons with LED indicators for speaking and function selection. The CFM-MAIN can also connect to a speaker driver/speaker output. The CFM-VK has five buttons for voting and rating, and a RFID card reader for delegate sign-in.

CFM-MAIN

- 2 buttons with LED: speak and function selection
- A 3-pin standard XLR connector for delegate unit

MECHANICAL

- Dimensions (W x H x D): 3.9" x 3" x 2" (100 x 76 x 50.5 mm)
- Weight: 1.98 lbs (0.9 kg)
- Color: PANTONE 7546C

CFM-VK

- 5 buttons for voting and rating

MECHANICAL

- Dimensions (W x H x D): 3.9" x 3" x 2" (100 x 76 x 50.5 mm)
- Weight: 1.98 lbs (0.9 kg)
- Color: PANTONE 7546C

ENVIRONMENTAL

- Operating temperature: +23 °F ~ +131 °F (-5 °C ~ +55 °C)
- Storage temperature: -40 °F ~ +158 °F (-40 °C ~ +70 °C)
- Relative humidity: 20% to 95% noncondensing

CERTIFICATIONS

- CE marked, UL listed, RoHs compliant

ORDERING INFORMATION

- CFM-MAIN: Flush Mount w/o Mic
- CFM-VK: Flush Mount Vote Keypad

VOTEPAD-AT/VOTEPAD-DR VOTING UNIT, ATTACHED TYPE/DIRECT CONNECT



VOTEPAD is a small tabletop voting console with 5 buttons for voting, RFID card reader for delegate sign-in, and an LCD screen for displaying real-time voting results. The VOTEPAD-AT and VOTEPAD-DR has different type of connection, the VOTEPAD-DR has a mini 5-pin XLR connector to directly connect to the DDB104, and the VOTEPAD-AT has a small jack connector to attach it to the CDM1000. The VOTEPAD-DR will be your first choice if you need the VOTEPAD to be decentralized in a different location from the CDM1000. The VOTEPAD-AT is made to use it directly next to the CDM1000.

ELECTRICAL

- Mains power: 24 VDC
- Power consumption: 2.5 watts @ normal

FRONT PANEL

- 5 buttons for voting and rating
- LCD screen for displaying real time voting result
- RFID card reader for attendee sign-in identification

VOTEPAD-AT SIDE PANEL

- 3.5mm female phone jack to connect to microphone

VOTEPAD-DR SIDE PANEL

- Mini XLR connector to connect to DDB104 directly

MECHANICAL

- Dimensions (W x H x D): 5" x 1.7" x 3.8" (126 x 42 x 97 mm)
- Weight: 1.76 lbs (0.8 kg)
- Color: PANTONE 7546C

ENVIRONMENTAL

- Operating temperature: +23 °F ~ +131 °F (-5 °C ~ +55 °C)
- Storage temperature: -40 °F ~ +158 °F (-40 °C ~ +70 °C)
- Relative humidity: 20% to 95% noncondensing

CERTIFICATIONS

- CE marked, UL listed, RoHs compliant

ORDERING INFORMATION

- VOTEPAD-AT: Voting Unit, Attached Type
- VOTEPAD-DR: Voting Unit, Direct Connect

SENATOR™

FULLY DIGITAL & NETWORKED
CONFERENCE, MEETING AND PRESENTATION
DSP SYSTEM

CGM GOOSENECK MICROPHONES

The CGM gooseneck microphones are specially designed to achieve a perfect voice reproduction while using them in conjunction with CDM-T5N delegate unit of Senator 900 system. They are available in 4 different length (26 cm/40 cm/48 cm/60 cm). Their polar pattern is a cardioid shape and uses a high definition unidirectional electret condenser capsule. The red illuminated LED ring on each CGM microphone will be illuminated to give various status information for each delegate unit. It has a foam windscreens to reduce wind noise and 'popping'. The termination of CGM microphone is 3-pin male XLR.



TECHNICAL SPECIFICATIONS

AUDIO CHARACTERISTICS

- Sensitivity: -47 (±4 dBu) @ 1 kHz (0 dBu = 1 VPa)
- Maximum SPL: 128 dBu
- Input dynamic range: 113 dB
- Frequency response: 50 ~ 18 kHz
- Impedance: < 130Ω

MICROPHONE CHARACTERISTICS

- Type: Uni-directional electret condenser microphone
- Polar pattern: Cardioid
- Termination: 3 pin male XLR
- Shaft diameter: 6 mm

ENVIRONMENTAL

- Operating temperature: +23 °F ~ +131 °F (-5 °C ~ +55 °C)
- Storage temperature: -40 °F ~ +158 °F (-40 °C ~ +70 °C)
- Relative humidity: 20% to 95% noncondensing

MECHANICAL

- Length (W x H x D)
 - CGM-260L = 10,2" (26 cm)
 - CGM-400L = 15,7" (40 cm)
 - CGM-480L = 18,9" (48 cm)
 - CGM-600L = 23,6" (60 cm)
- Weight: 4.4 lbs (0.2 kg)
- Color: PANTONE 7546C

CERTIFICATIONS

- CE marked (pending), UL listed, RoHs compliant

ORDERING INFORMATION

- CGM-260L: Gooseneck Mic 26 cm
- CGM-400L: Gooseneck Mic 40 cm
- CGM-480L: Gooseneck Mic 48 cm
- CGM-600L: Gooseneck Mic 60 cm

LOCAL NET CARD

ORDERING INFORMATION (CDM-NET)

- CNET-L1: CDM Net-Loop-Card CAT/CAT
- CNET-L2: CDM Net-Loop-Card CAT/FO Multi Mode
- CNET-L2S: CDM Net-Loop-Card CAT/FO Single Mode
- CNET-L3: CDM Net-Loop-Card FO/FO Multi Mode
- CNET-L3S: CDM Net-Loop-Card FO/FO Single Mode
- CNET-L4: CDM Net-Loop-Card FO Multi Mode/CAT
- CNET-L4S: CDM Net-Loop-Card FO Single Mode/CAT

ORDERING INFORMATION (DCP-NET)

- DNET-L1: DCP Net-Card CAT/CAT
- DNET-L2: DCP Net-Card CAT/FO Multi Mode
- DNET-L2S: DCP Net-Card CAT/FO Single Mode
- DNET-L3: DCP Net-Card FO/FO Multi Mode
- DNET-L3S: DCP Net-Card FO/FO Single Mode
- DNET-L4: DCP Net-Card FO/CAT Multi Mode
- DNET-L4S: DCP Net-Card FO/CAT Single Mode

CABLE AND CONNECTOR

ORDERING INFORMATION

- DLCA-100L: DCP-Loop Cable Ass'y 1m(CAT+POWER)
- DLCA-300L: DCP-Loop Cable Ass'y 3m(CAT+POWER)
- DLCA-1000L: DCP-Loop Cable Ass'y 10m(CAT+POWER)
- DLCA-2000L: DCP-Loop Cable Ass'y 20m(CAT+POWER)
- DLCA-5000L: DCP-Loop Cable Ass'y 50m(CAT+POWER)
- DCP-Loop Cable Roll 100m(CAT+POWER)
- CMC: CDM Mic-Cable 2.5m(Delegate Unit-to-DDB104)
- DLC-PCS: DCP-Loop Cable Power Connector Set(3xBL/3xRed)



CDM Mic-Cable



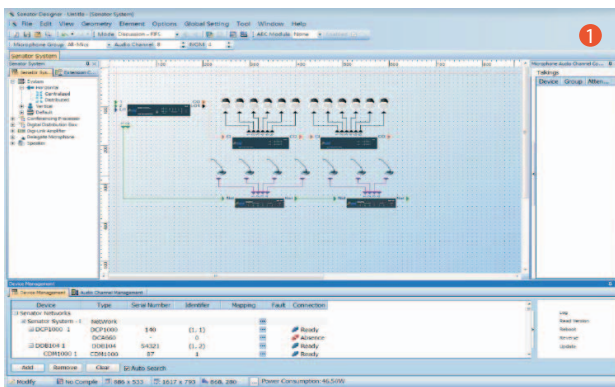
DCP-Loop Cable (CAT5)

SENATOR DESIGNER SOFTWARE SUITE

The Senator Designer software is a PC/Laptop based which can be compatible with Windows XP/Vista/Win7/Win8 or above, the software allows to program and control the entire Senator system configuration and any DSP parameter adjustment dynamically. The connected devices will be displayed in a topology graphically, creating an intuitive UI configuration layout. System setup with auto network deploy shall be configured using the fixed DSP function on software. The Senator Designer also has a Global Setting function for adjusting the selected the delegate units or speakers once a time. The software provides 5 different conferencing modes (FIFS, FIFO, Priority, Request RQ and Chairman Mode). Moreover, it allows to design the operation area for its own conference scene.



Human Centered • Intuitive
Dynamical • Complete



① Appearance of Senator Designer

② ③ Examples of designed operation area



Embedded Digital Signal Processing

The state-of-the-art Senator system is a fully integrated digital conference system. The DSP functions such as AGC, 8 band PEQ, Voice Activated Gate, feedback suppressor, gain-sharing auto mixer, and mix-minus are all integrates in the system, no external devices or hardware is required. To improve audio quality, Senator handles the DSP function more than just floor channel, all the DSP function can be processed individually for each delegate unit. With an optional AEC module(Acoustic Echo Cancellation) installed on processor, the Senator can achieve teleconferencing using VoIP and SIP functionality. The Senator Designer software can be operated on PC/Laptop.

VOICE GATE

Proprietary Technology

Voice Gates to carry and recognize the audio spectrum to activate the delegate unit which match with human voice only and avoid false activation from unexpected noise.

6 BAND PARAMETRIC EQUALIZER (PEQ)

Parametric Equalizer (PEQ) enables the specific central frequency to be selected and dynamically adjusts its amplitude with the affected range of frequencies. The Senator 900 system provides 4 types of PEQ component:

- (1) 2 band PEQ for Mic In on DCP1000 processor
- (2) 8 band PEQ for Stereo Line In on DCP1000 processor
- (3) 6 band PEQ + 2 band personal PEQ for the delegate units on CDM-Net
- (4) 4 band PEQ for RCA/XLR output from the rear panel of DCP1000 processor

AUTO GAIN CONTROL (AGC)

The Auto Gain Control (AGC) component allows to automatically adjust the volume of the microphone input signal which is connected to the DCP1000 processor to be increased or decreased to close the target level, then make the fluctuation of volume steadily.

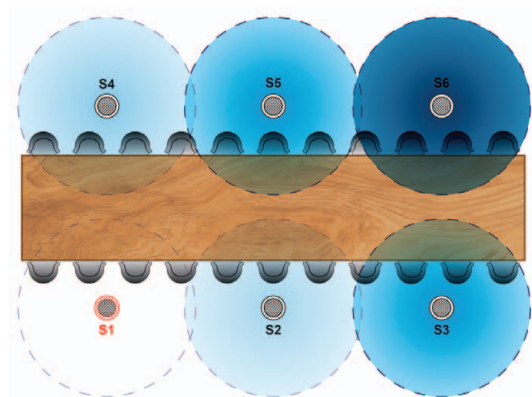
FEEDBACK SUPPRESSOR (FBX)

The Feedback Suppressor will evaluate the feedback characteristics of system and automatically adjust the filters as necessary to suppress feedback. In the Senator system, there are 2 feedback components: one for the microphone input signal, one for the sum of 8 audio signals.

MIX-MINUS AUTO CALIBRATION

Proprietary Technology

The Mix-Minus Auto Calibration function is designed to avoid feedback and echoes in a conference. The technology is able to figure out all the potential sound sources of feedback and echoes, then automatically set the suitable calibration value to prevent echoes or feedback.



When the delegate units are placed close to the 'S1' loudspeaker, the mic activation will be as the picture above, the 'S1', 'S2' and 'S4' speaker will automatically set the suitable parameters which will reduce the most calibrated sound level to avoid feedback of the activated delegate units.



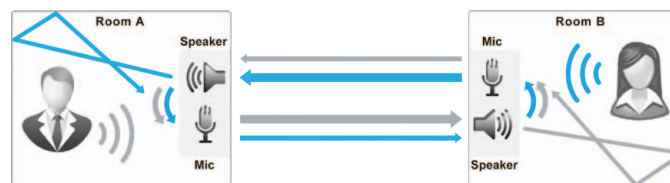
SENATOR™

ACOUSTIC ECHO CANCELLATION (incl. RAPIDO™ algorithm)

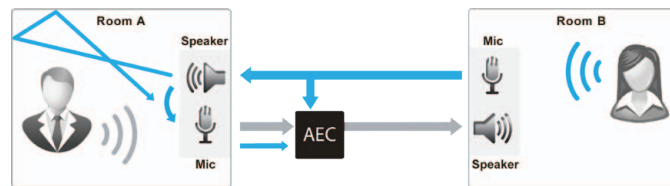
Proprietary Technology

Acoustic Echo Cancellation (AEC) helps to eliminate the audible echo during the duplex teleconferencing. This component is to compare the far-end signal to the near-end echo, which the near-end delegate unit will pick up from the far-end via the near-end loudspeaker, and remove the echoes. With the optional AEC-Card which includes our latest technology, the RAPIDO™ AEC algorithm, the Senator System will work independently of any external AEC DSP device, and support VoIP functions for remote conferencing. The ultra-fast converging RAPIDO™ AEC algorithm can handle up to 353ms of tail length for up to 4 microphones (CDM delegate units) simultaneously (Max. NOM = 4)!

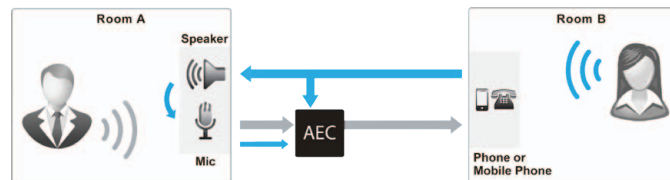
For example, see the pictures as below. If Room A and Room B are under the teleconferencing, the speech from Room A will transmit via Room B's open mic with its reverberation, and will send right back to Room A. This process will continue again and again. With the extremely fast RAPIDO™ algorithm, the Senator system will filter out all audio from Room A preventing Room B's microphone from transmitting it back to Room A.



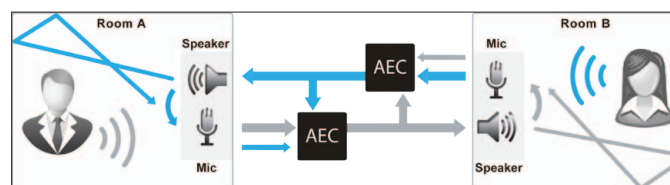
▲ Without any Acoustic Echo Cancellation, echo will be heard on both ends.



▲ Using the Acoustic Echo cancellation on one end, it will eliminate echo on the far end.



▲ Using the Acoustic Echo Cancellation on one end in the room, and the other end is a Phone or a Mobile Phone, the AEC will eliminate all echoes on the far end and no AEC needed for a phone or a mobile phone.



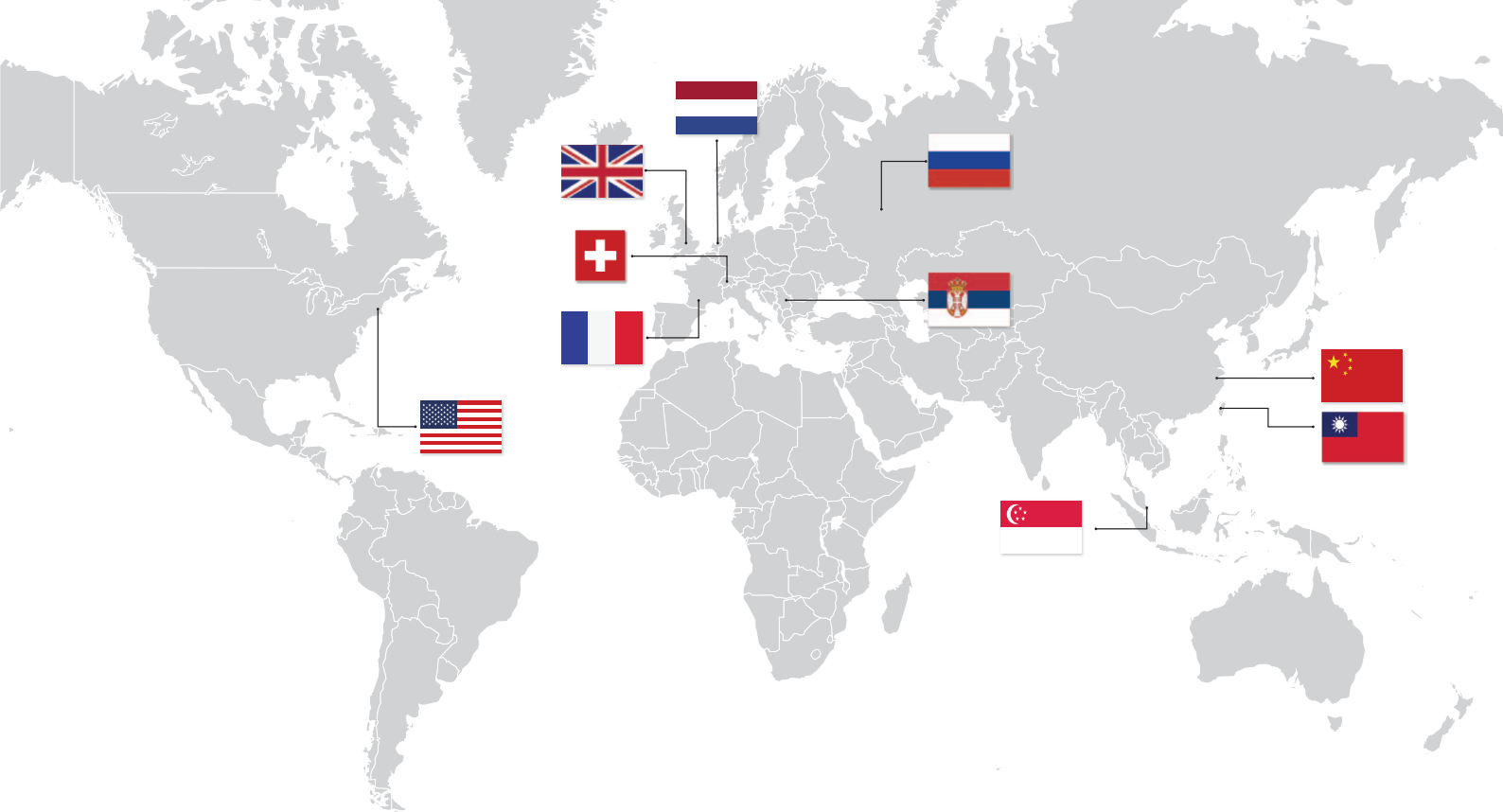
▲ Using the Acoustic Echo Cancellation on one both ends, it will eliminate all echoes on both ends.

VoIP

If the optional RAPIDO™ AEC-Card (Acoustic Echo Cancellation) is installed in DCP1000, the remote conferencing can be achieved using the VoIP (Voice over Internet Protocol). The extremely fast converge RAPIDO™ AEC module can handle up to 353 ms tail time for up to 4 microphones simultaneously (max. NOM = 4) to ensure crystal-clear voice communication.

The Senator system supports remote conferencing with:

1. Another remote Senator system
2. TERRACOM devices
3. SIP IP phones (VoIP)
4. Land line telephone via Terra-FXO device



ATEİS Europe B.V.
EMEA

Celsiusstraat 1 - 2652 XN Lansingerland
(Rotterdam Region), Netherlands
Tel: +31 (0)10 2088690
info@ateis-europe.com



Penton Audio USA
USA, Canada & Latin America

21 Sabin Street Pawtucket, RI 02860, USA
Tel: +1 401-727-1600
Fax: +1 401-727-0003
info@penton-usa.com



ATEİS France

8, rue de l'Europe - ZA de Font Ratel,
38640 Claix, France
Tel: +33 (0)4 76992630
contact@ateis.com



ATEİS China

Room 610, No.255 Wubao Road, Minxing
district, Shanghai, China
Tel: +021-54495191/92
Fax: +021-54495193
sales@ateis.com.cn



Penton UK Ltd.
UK & Ireland

Unit 2, Teville Industrials, Dominion Way, Worthing
West Sussex, BN14 8NW, United Kingdom
Tel: +44 (0)1903 215315
Fax: +44 (0)1903 215415
sales@pentonuk.co.uk



Xavtel Communications RUS Ltd.

Russian Federation, 115280, Moscow
Leninskaya Sloboda str., 26 bld. 28,
Business Center "Slobodskoy", oco#122
Tel/Fax: +7 495 803 3655
info@xavtel.ru.com



ATEİS Far-East
Far-East Asia

2F No.60, Xinghua 2nd Rd. Tanzi,
Taichung, Taiwan
Tel: +886 4 25333840
Fax: +886 4 25333830
sales@ateis-fareast.com



ATEİS Suisse SA

Avenue des Baumettes 9, 1020 Renens VD,
Switzerland
Tel: +41 (0)218812510
Fax: +41 (0)218812509
info@ateis.ch



ATEİS Se Europe
Serbia

Sime Lukina Lazića 12-B, 11040 Belgrade
Serbia
Tel: +381 (0)11 40 89 617
info@ateisseurope.com



ATEİS SE PTE. LTD.
South-East Asia

Blk 5002 Ang Mo Kio Ave 5, #03-01B TECHplace
II, Singapore 569871
Tel: +65 6481 1968
Fax: +65 6481 1960
info@ateis-se.com.sg

