SENATOR™

Fully Digital & Networked
Conference, Meeting and presentation
DSP System

Application Guide

- Easy Wiring and Quick Installation
- Superior Audio Quality
- Voice Activated Gate/Mix-minus Auto Calibration
- Microphone Capability up to 504 Microphone
- Network Redundancy

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INNOVATION

Precision, interaction and reliability are absolutely essential in today's world when significant information and decisions are shared and made in conferences.

Xavtel's Senator conference, meeting and presentation system is a fully digital and integrated solution, based on innovative network technology, providing crystal-clear audio, powerful DSP functions and real-time audio processing. All together, this makes the Senator system one of the most flexible and decentralized systems in the AV industry.

The Senator system offers a fully redundant high-speed network to be able to connect a large variety of delegate units to the main DSP processor. Some delegate units are portable, tabletop or even available as flush mount version. We can provide the most efficient and cost effective solution for all your conference applications so you can hear and can be heard clearly.

SENATOR™

Fully Digital & Networked Conference, Meeting and presentation DSP System

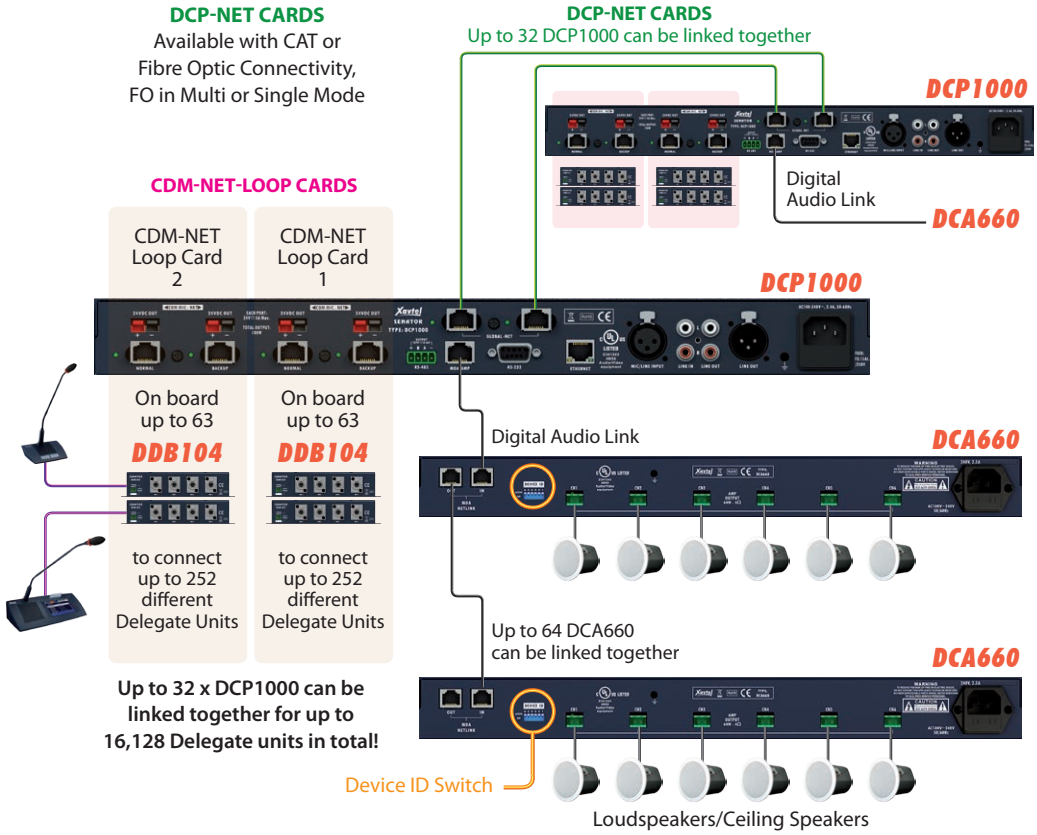
Xavtel®

NETWORK TOPOLOGY

The backbone of the Senator system is a redundant loop network topology, allowing two network loops (CDM-Net-Loop) to connect up to sixty-three DDB104 microphone junction boxes to each CDM-Net-Loop card.

Each DDB104 microphone junction box is capable to connect up to four delegate units or voting devices. The DCP1000 DSP processor has two CDM-Net-Loop card slots: One card is on board, and the other can expand the system to two redundant network loops for up to five hundred and four delegate units to be connected to a single DCP1000 processor (2 x Loop = 2 x 63 DDB104 Junction Boxes x 4 Delegate Units = 504 Delegate Units).

The DCP-Net card, inserted in DCP-Net card slot is capable to connect up to thirty-two DCP1000 processors in total, providing either CAT5/6 or fiber optical connections with distances up to 66 kft (20 km) in between DCP1000 devices. This is a unique way to ease up any thinkable application, even if distance comes into the game. The DCA660, a six channel 60W digital system amplifier, allows for an automatic calibration of a Mix-Minus setup, to provide the highest gain before feedback possible in every room. Up to sixty-four DCA660 amplifiers can be connected to a single DCP1000 processor, to be capable of building large loudspeaker groups and provide a Mix-Minus setup for very large and reverberant rooms.



APPLICATION #1

STANDARD CONFERENCE

No Need for Sound Reinforcement System,
Only the Internal Loudspeakers of the Delegate Units are in Use

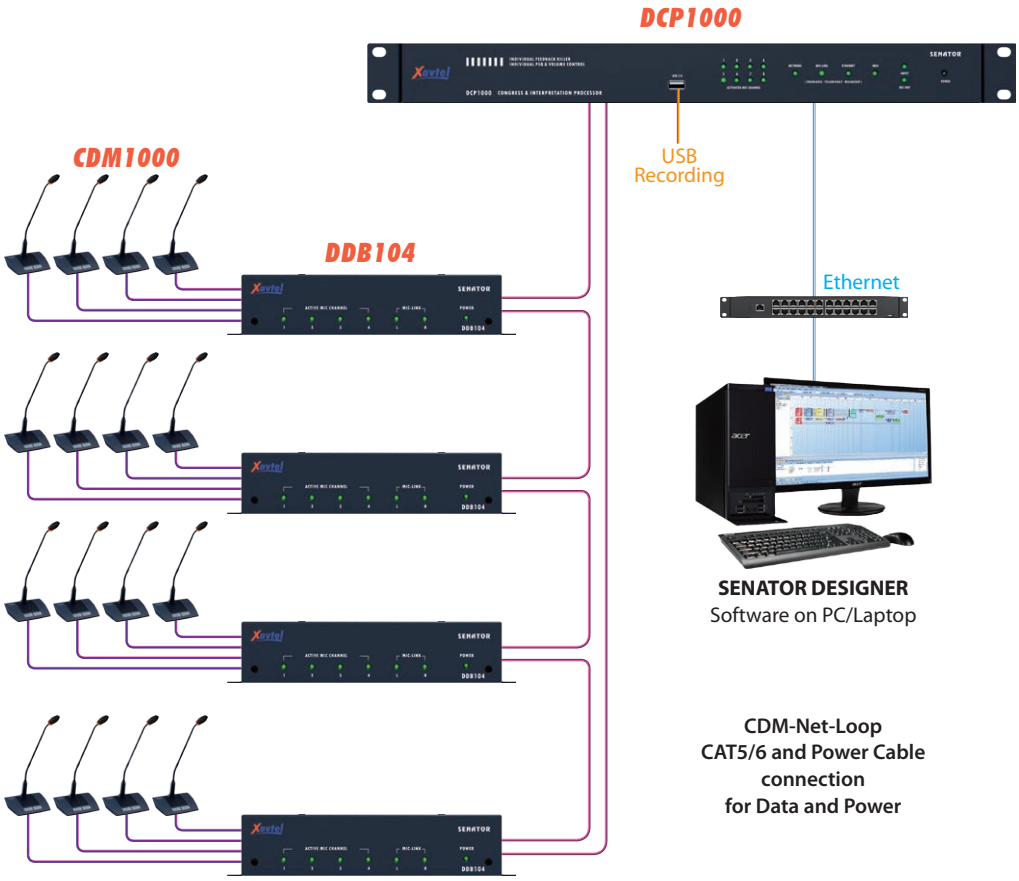
This application shows a conference application of a standard single room. Sixteen CDM1000 are used as delegate units to provide a conference situation for sixteen participants. By using the built-in loudspeaker of each CDM1000, all participants will be able to listen to the conversation, or can connect an additional headset via the mini-jack connection, located at the side of the CDM1000. Thanks to the integrated AEC (Acoustic Echo Cancellation) algorithm, all undesired echo or howling between microphones and loudspeakers will be cancelled out with a dynamic filter in each delegate unit.

Flexible NOM (Maximum number of activated microphones) can also be set between 1 ~ 8 to limit the amount of delegates speaking at the same time.

SUPPORTING FIVE TYPES OF CONFERENCE MODE

DISCUSSION-FIFS	All the microphones are engaged in the order they request to speak on a "first in first served" basis.
DISCUSSION-FIFO	All the microphones are engaged by the "first in first out" basis, this allows every microphone to speak with the order they push the request button; therefore, when all the channels have been occupied, the next person who is waiting for requesting to speak will override the first person who occupied the first channel.
MEETING-PRIORITY	For Chairman Delegate Units, this mode will allow for the microphones to turn on via their priority settings. No manual selection needed from the Chairman.
MEETING-DELEGATES RQ	All delegates are engaged by requesting the authorization to speak from chairman.
MEETING-CHAIRMAN	All delegates are engaged by Chairman and/or the assistant operation via Senator Designer software.

Use CDM Net-Loop Card (CAT5/6) and DDB104 (CAT5/6) for Interconnection



EQUIPMENT LIST

- DCP1000 x 1
- DDB104 x 4
- CDM-Net-Loop cable x 5 (max. 328 ft or 100m)
- Gooseneck mic x 16 (type/length to choose)
- CDM mic-cable x 16 (DDB104 to mic, max. 8.2 ft or 2.5m)

APPLICATION #2

STANDARD CONFERENCE

Sound Reinforcement System with
DCA660 Amplifiers and Ceiling Speakers

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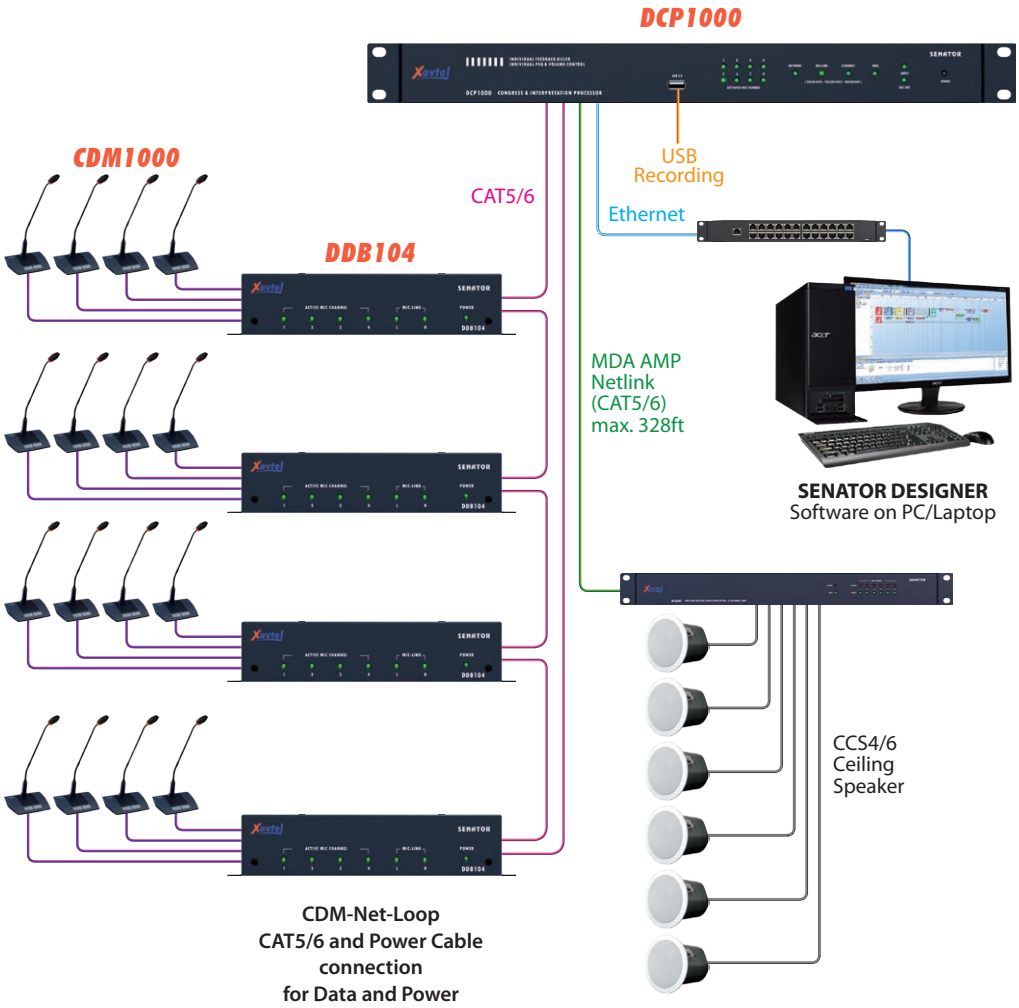
This application shows a standard single room conference application. Sixteen CDM1000 are used as delegate units to provide a conference situation for sixteen participants. And the DCA660 (six ch. digital amplifier) is added for a separated sound reinforcement system with the connected and installed ceiling speakers. With the DCA660 amplifiers, the Senator system is able to automatically adjust the mix minus calibration that enables the system to have the audio "gain before feedback".

Flexible NOM (Maximum number of activated microphones) can also be set between 1 ~ 8 to limit the amount of delegates speaking at the same time.

SUPPORTING FIVE TYPES OF CONFERENCE MODE

DISCUSSION-FIFS	All the microphones are engaged in the order they request to speak on a "first in first served" basis.
DISCUSSION-FIFO	All the microphones are engaged by the "first in first out" basis, this allows every microphone to speak with the order they push the request button; therefore, when all the channels have been occupied, the next person who is waiting for requesting to speak will override the first person who occupied the first channel.
MEETING-PRIORITY	For Chairman Delegate Units, this mode will allow for the microphones to turn on via their priority settings. No manual selection needed from the Chairman.
MEETING-DELEGATES RQ	All delegates are engaged by requesting the authorization to speak from chairman.
MEETING-CHAIRMAN	All delegates are engaged by Chairman and/or the assistant operation via Senator Designer software.

Use CDM Net-Loop Card (CAT5/6) and DDB104 (CAT5/6) for Interconnection
Use DCA660 Amplifier(6CH, 60W per Channel) for External Loudspeakers



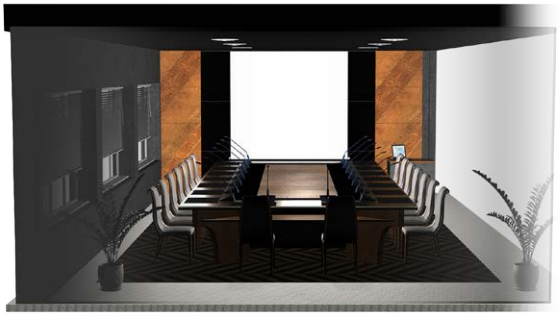
EQUIPMENT LIST

- DCP1000 x 1
- DCA660 x 1
- CAT5/6 x1 (processor to amplifier, max. 328 ft or 100m)
- CCS4/6 ceiling speaker x 6
- Loudspeaker cable x 6(various length)
- DDB104 x 4
- CDM-Net-Loop cable x 5 (max. 328 ft or 100m)
- Gooseneck mic x 16 (type/length to choose)
- CDM mic-cable x 16 (DDB104 to mic, max. 8.2 ft or 2.5m)

APPLICATION #3

STANDARD CONFERENCE

Networked in 2 Rooms, plus Sound Reinforcement System with DCA660 Amplifiers



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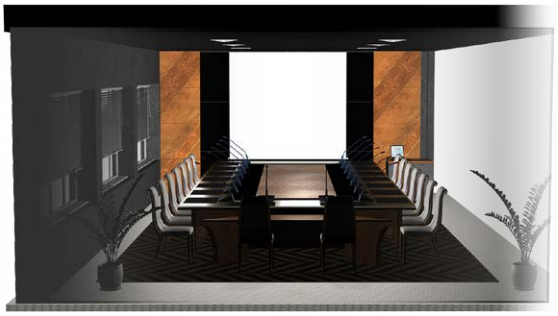


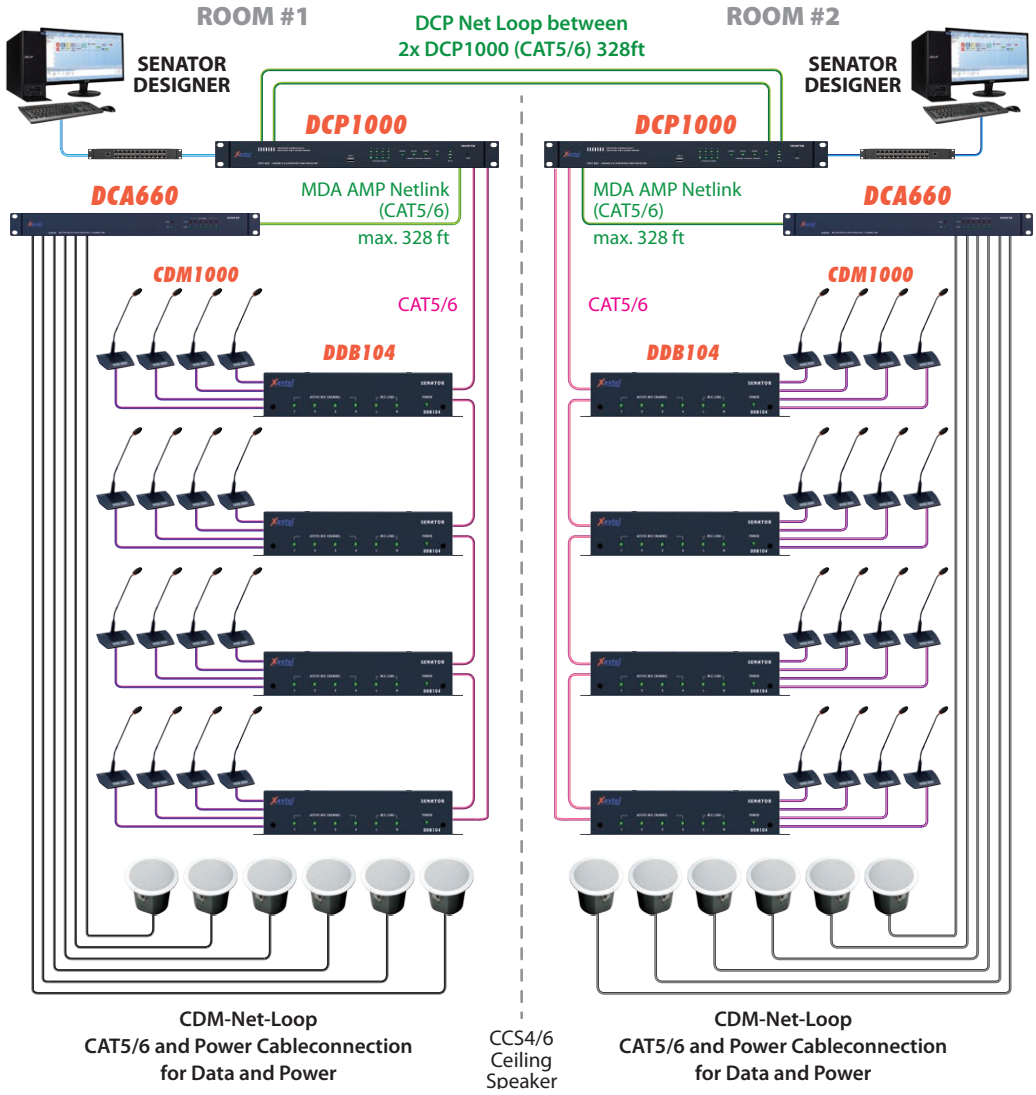
This application shows a conference application in two rooms. A DCP-Net card will be added to each DCP1000 processor, so the rooms can be networked together via a CAT5/6 network link for up to 328ft (100m) distance between the two rooms. Both rooms can be used individually, or can be "combined".

Sixteen CDM1000 are used as delegate units to provide conference situation for sixteen participants in each room. With the DCA660 amplifiers, the Senator system is able to automatically adjust the mix minus calibration that enables the system to have the audio "gain before feedback". Flexible NOM (Maximum number of activated microphones) can also be set between 1 ~ 8 to limit the amount of delegates speaking at the same time.

SUPPORTING FIVE TYPES OF CONFERENCE MODE

DISCUSSION-FIFS	All the microphones are engaged in the order they request to speak on a "first in first served" basis.
DISCUSSION-FIFO	All the microphones are engaged by the "first in first out" basis, this allows every microphone to speak with the order they push the request button; therefore, when all the channels have been occupied, the next person who is waiting for requesting to speak will override the first person who occupied the first channel.
MEETING-PRIORITY	For Chairman Delegate Units, this mode will allow for the microphones to turn on via their priority settings. No manual selection needed from the Chairman.
MEETING-DELEGATES RQ	All delegates are engaged by requesting the authorization to speak from chairman.
MEETING-CHAIRMAN	All delegates are engaged by Chairman and/or the assistant operation via Senator Designer software.

Use CDM Net-Loop Card (CAT5/6) and DDB104 (CAT5/6) for Interconnection
Use 2x DCP Net Cards (CAT5/6) to Network the 2x DCP1000 Processors



EQUIPMENT LIST: ROOM #1

- DCP1000 x 1 with DCP-Net card (CAT5/6)
- CAT5/6 x 1 (processor to processor, max. 328 ft or 100m)
- DCA660 x 1
- CAT5/6 x 1 (processor to amplifier, max. 328 ft or 100m)
- CCS4/6 ceiling speaker x 6
- Loudspeaker cable x 6 (various length)
- DDB104 x 4
- CDM-Net-Loop cable x 5 (max. 328 ft or 100m)
- Gooseneck mic x 16 (type/length to choose)
- CDM mic-cable x 16 (DDB104 to mic, max. 8.2 ft or 2.5m)

EQUIPMENT LIST: ROOM #2

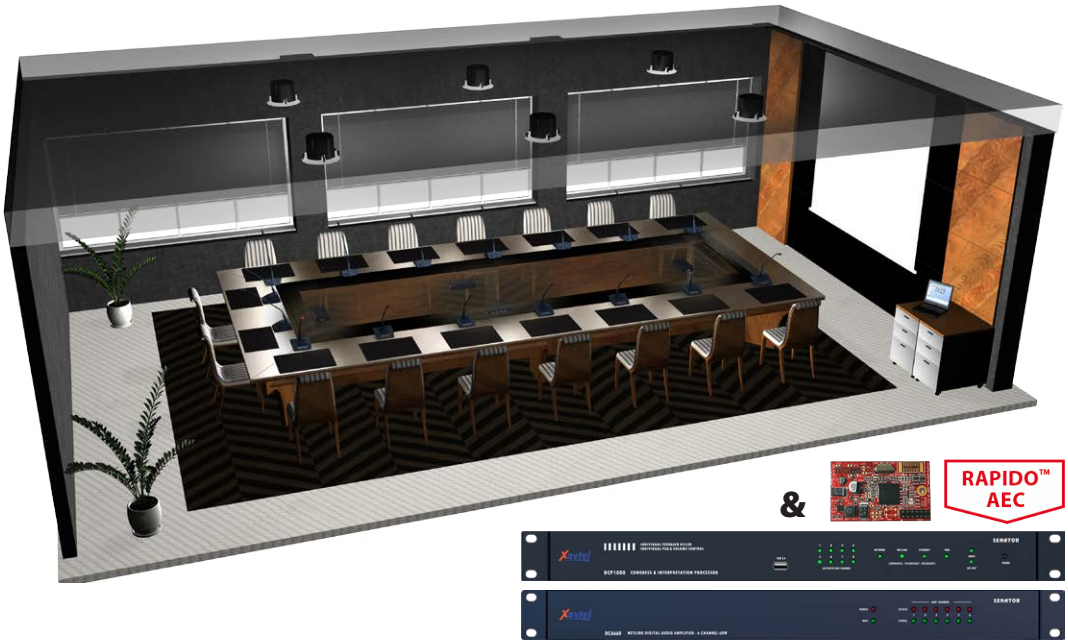
- DCP1000 x 1 with DCP-Net card (CAT5/6)
- CAT5/6 x 1 (processor to processor, max. 328 ft or 100m)
- DCA660 x 1
- CAT5/6 x 1 (processor to amplifier, max. 328 ft or 100m)
- CCS4/6 ceiling speaker x 6
- Loudspeaker cable x 6 (various length)
- DDB104 x 4
- CDM-Net-Loop cable x 5 (max. 328 ft or 100m)
- Gooseneck mic x 16 (type/length to choose)
- CDM mic-cable x 16 (DDB104 to mic, max. 8.2 ft or 2.5m)

APPLICATION #4

STANDARD CONFERENCE

Sound Reinforcement System with DCA660 Amplifiers

VoIP & AEC

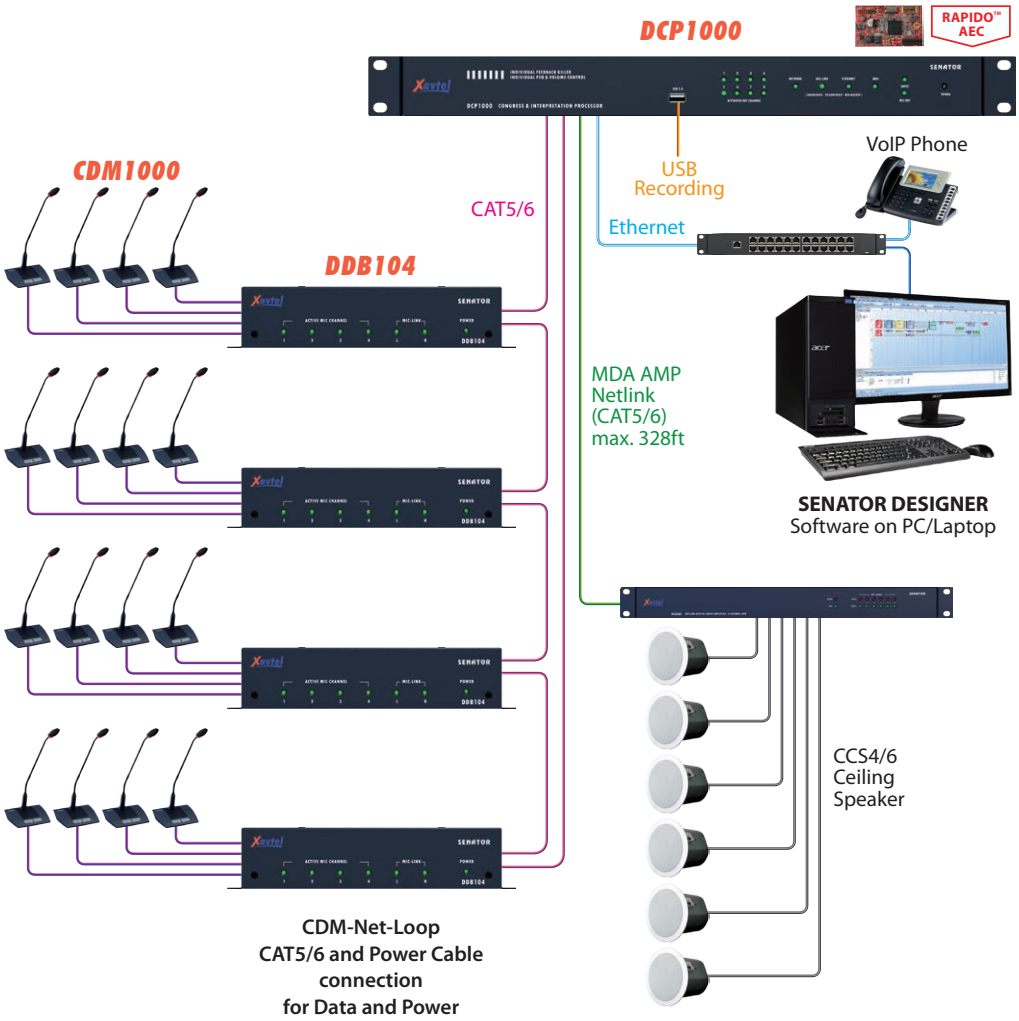


This application shows a conference application of a standard single room.
Sixteen CDM1000 are used as delegate units to provide a conference situation for sixteen participants. And the DCA660, six ch. digital amplifier is connected with the installed ceiling speakers for a separated sound reinforcement system. With the DCA660 amplifiers, the Senator system is able to automatically adjust the mix minus calibration that enables the system to have the audio "gain before feedback". The optional AEC module is installed into the DCP1000 DSP processor, allowing for distance conference with a VoIP Phone system. Flexible NOM (Maximum number of activated microphones) can also be set between 1 ~ 8 to limit the amount of delegates speaking at the same time.

SUPPORTING FIVE TYPES OF CONFERENCE MODE

DISCUSSION-FIFS	All the microphones are engaged in the order they request to speak on a "first in first served" basis.
DISCUSSION-FIFO	All the microphones are engaged by the "first in first out" basis, this allows every microphone to speak with the order they push the request button; therefore, when all the channels have been occupied, the next person who is waiting for requesting to speak will override the first person who occupied the first channel.
MEETING-PRIORITY	For Chairman Delegate Units, this mode will allow for the microphones to turn on via their priority settings. No manual selection needed from the Chairman.
MEETING-DELEGATES RQ	All delegates are engaged by requesting the authorization to speak from chairman.
MEETING-CHAIRMAN	All delegates are engaged by Chairman and/or the assistant operation via Senator Designer software.

Use CDM Net-Loop Card (CAT5/6) and DDB104 (CAT5/6) for Interconnection
Use DCP1000 Processor with AEC Card to have Remote Conferencing



EQUIPMENT LIST

- DCP1000 x 1 with AEC Ccrd
- DCA660 x 1
- CAT5/6 x 1 (processor to amplifier, max. 328 ft or 100m)
- CCS4/6 ceiling speaker x 6
- Loudspeaker cable x 6 (various length)
- DDB104 x 4
- CDM-Net-Loop cable x 5 (max. 328 ft or 100m)
- Gooseneck mic x 16 (type/length to choose)
- CDM mic-cable x 16 (DDB104 to mic, max. 8.2 ft or 2.5m)

APPLICATION #5

STANDARD CONFERENCE (RENTAL SYSTEM)

**Sound Reinforcement System with DCA660 Amplifiers,
plus 6x Speakers on Floor Stand**

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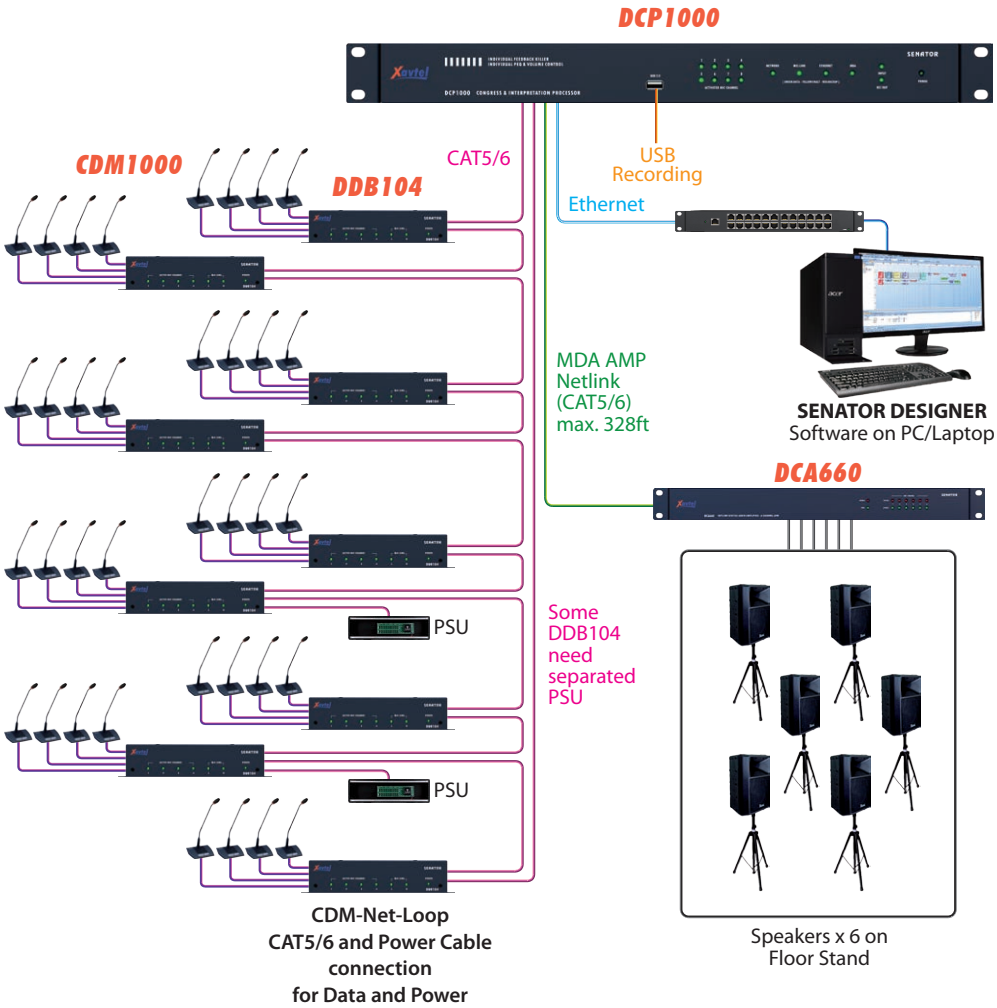
This application shows a conference application used for standard RENTAL systems.
Thirty-six CDM1000 are used as delegate units to provide a conference situation for thirty-six participants.
A DCA660, Six ch. digital amplifier, is used to connect to six pcs. remote floor-standing loudspeakers for a separated sound reinforcement system.

Thanks to Xavtel's Mix-Minus Auto Calibration, the system setup and adjustment time is extremely easy and fast! Flexible NOM (Maximum number of activated microphones) can also be set between 1 ~ 8 to limit the amount of delegates speaking at the same time.

SUPPORTING FIVE TYPES OF CONFERENCE MODE

DISCUSSION-FIFS	All the microphones are engaged in the order they request to speak on a "first in first served" basis.
DISCUSSION-FIFO	All the microphones are engaged by the "first in first out" basis, this allows every microphone to speak with the order they push the request button; therefore, when all the channels have been occupied, the next person who is waiting for requesting to speak will override the first person who occupied the first channel.
MEETING-PRIORITY	For Chairman Delegate Units, this mode will allow for the microphones to turn on via their priority settings. No manual selection needed from the Chairman.
MEETING-DELEGATES RQ	All delegates are engaged by requesting the authorization to speak from chairman.
MEETING-CHAIRMAN	All delegates are engaged by Chairman and/or the assistant operation via Senator Designer software.

Use CDM Net-Loop Card (CAT5/6) and DDB104 (CAT5/6) for Interconnection
Use DCA660 Amplifier (6CH, 60W per Channel) for External Loudspeakers



EQUIPMENT LIST

- DCP1000 x 1
- DCA660 x 1
- CAT5/6 x 1(processor to amplifier, max. 328 ft or 100m)
- 8 ohm Speaker x 6 on Floor Stand
- Loudspeaker cable x 6 (various length)
- DDB104 x 9
- CDM-Net-Loop cable x 10 (max. 328 ft or 100m)
- PSU for DDB104 x 2 ~ 3
- Gooseneck mic x 36 (type/length to choose)
- CDM mic-cable x 36 (DDB104 to mic, max. 8.2 ft or 2.5m)

APPLICATION #6

STANDARD CONFERENCE (RENTAL SYSTEM)

Real-Time Tracking of Speakers with Dome Camera Integration

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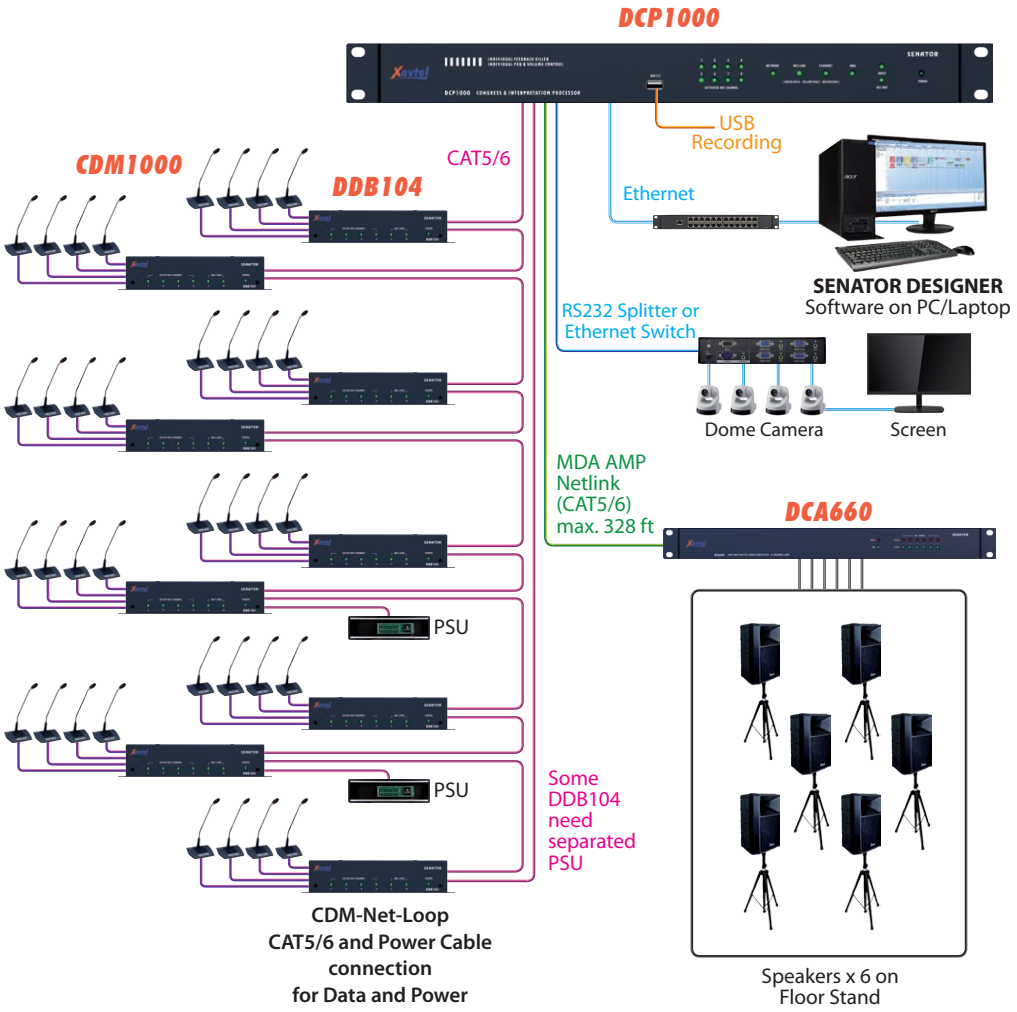
This applications shows a conference application for video dome camera integration with microphones. When a microphone is "turned on", the dome video camera automatically rotates and locates the "Live Microphone" with software control. Providing additional visibility for delegates in a large scale of configuration, where video and audio from the main room shall be "seen" and "heard" even in a long distance. The Senator system supports the interactive dome camera in 3 types of protocol: PELCO-D, PELCO-P and VISCA.

SUPPORTING FIVE TYPES OF CONFERENCE MODE

DISCUSSION-FIFS	All the microphones are engaged in the order they request to speak on a "first in first served" basis.
DISCUSSION-FIFO	All the microphones are engaged by the "first in first out" basis, this allows every microphone to speak with the order they push the request button; therefore, when all the channels have been occupied, the next person who is waiting for requesting to speak will override the first person who occupied the first channel.
MEETING-PRIORITY	For Chairman Delegate Units, this mode will allow for the microphones to turn on via their priority settings. No manual selection needed from the Chairman.
MEETING-DELEGATES RQ	All delegates are engaged by requesting the authorization to speak from chairman.
MEETING-CHAIRMAN	All delegates are engaged by Chairman and/or the assistant operation via Senator Designer software.

Use CDM Net-Loop Card (CAT5/6) and DDB104 (CAT5/6) for Interconnection
Use RS232 connection for Interactive Dome Camera

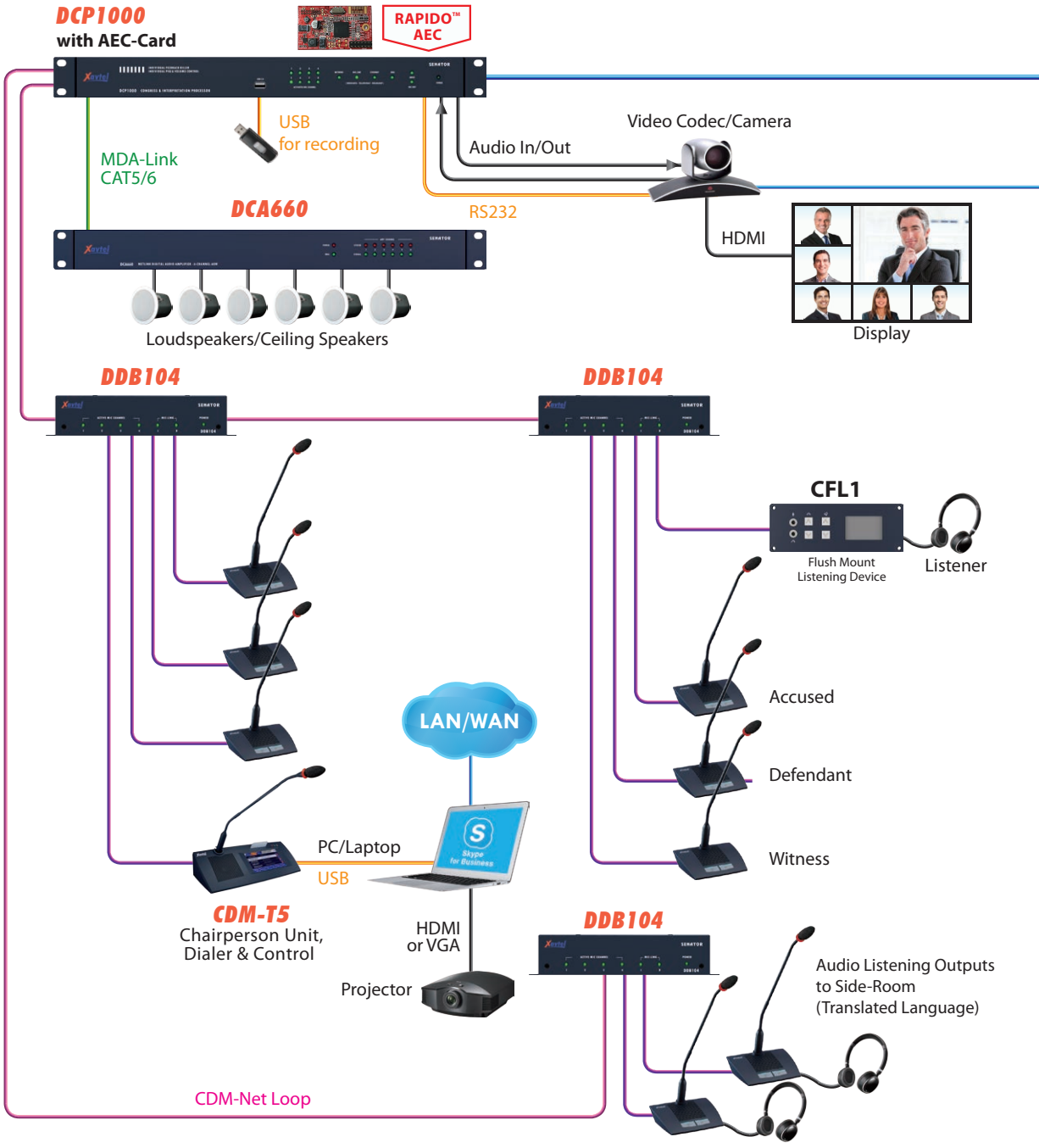


EQUIPMENT LIST

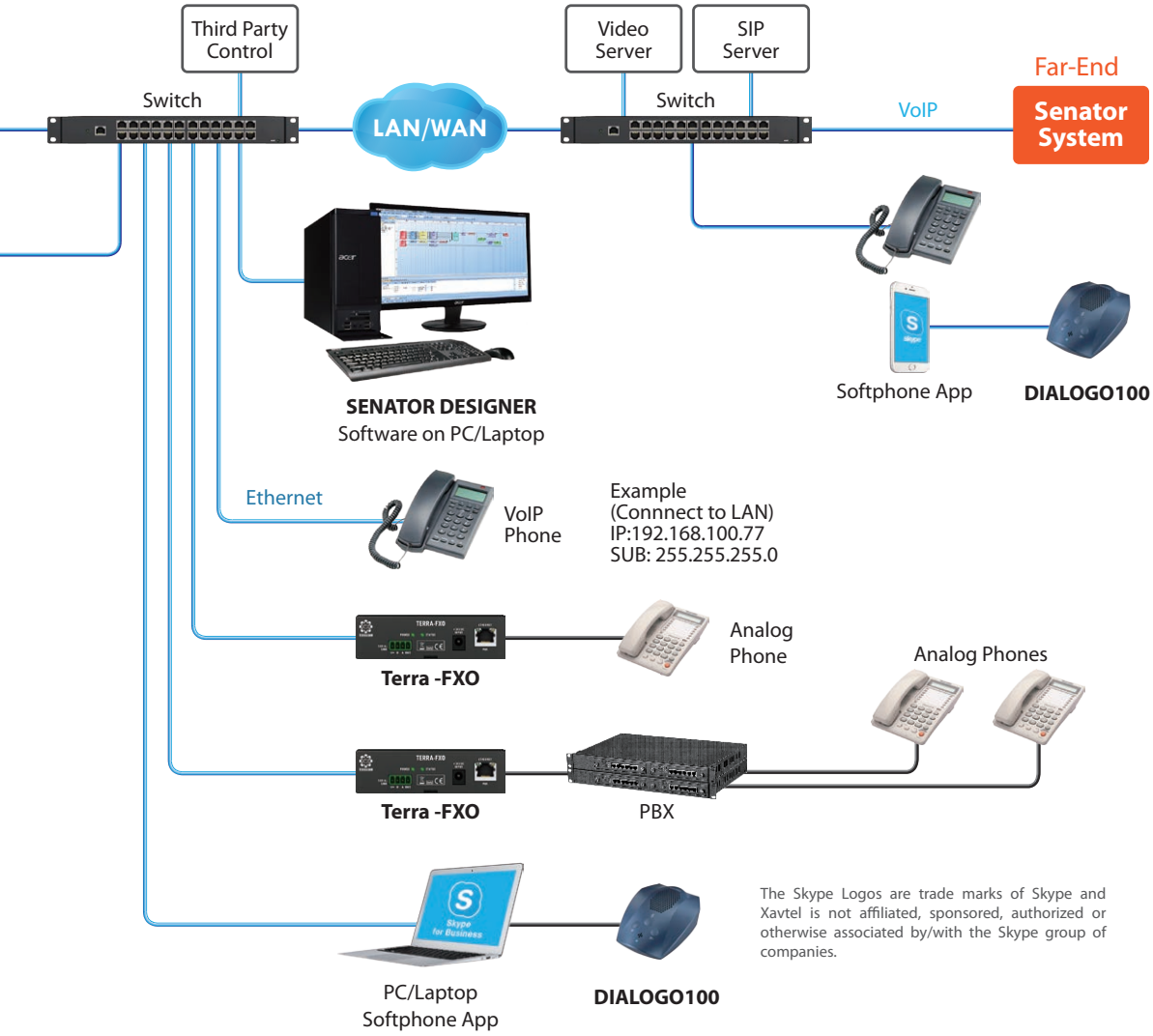
- DCP1000 x 1
- DCA660 x 1
- CAT5/6 x1 (processor to amplifier, max. 328 ft or 100m)
- 8 ohm speaker x 6 on floor stand
- Loudspeaker cable x 6 (various length)
- DDB104 x 9
- CDM-Net-Loop cable x 10 (max. 328 ft or 100m)
- PSU x 2-3 for DDB104
- Gooseneck mic x 36 (type/length to choose)
- CDM mic-cable x 36 (DDB104 to mic, max. 8.2 ft or 2.5m)
- Dome camera x 4, Screen x1, RS232 splitter x 1

APPLICATION #7

UNIFIED COMMUNICATION AND CONFERENCE-PRESENTATION



Use DCP1000 Processor with AEC Card to have Remote Conferencing



DIALOGO 100

Portable UC Desktop Speakerphone.
Excellent voice and music reproduction.
Features AEC algorithm and NR.
USB connetion to PC/Laptop. Easy installation.

SENATOR™

Simple discussion & Large Scale system

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Universities or Education Institution

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