



TS-820/920/D1000 CONFERENCE SYSTEM

Smiles
for the
Public

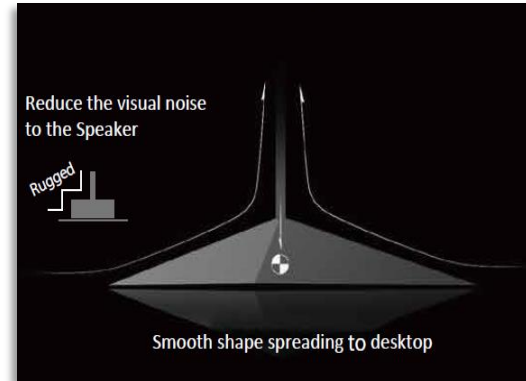
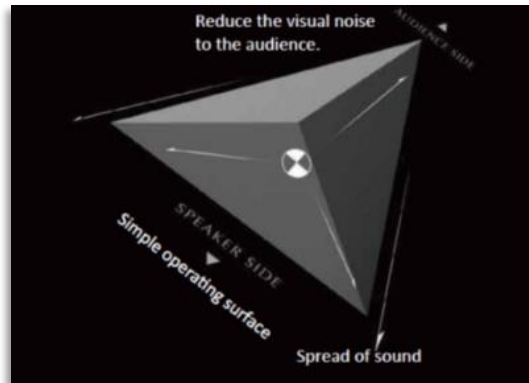


Overview



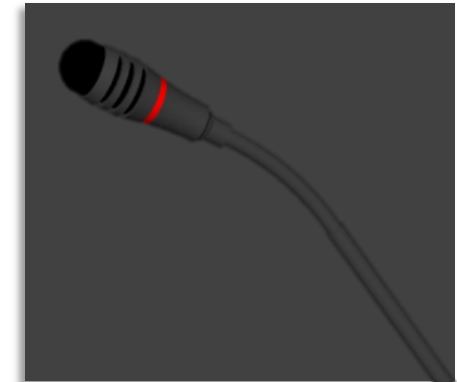
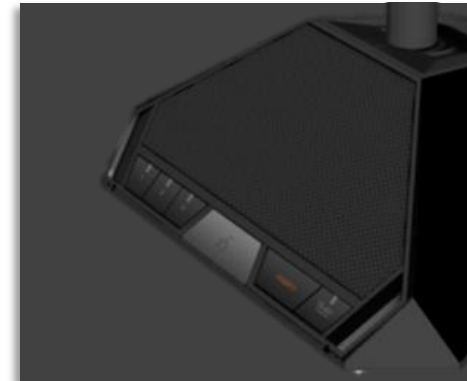
- New generation stand-alone conference system
- Visual noiseless design and high quality sound

"Visual Noiseless"



A simple, noiseless design that enables users to concentrate on discussions.

"Quality Sound"



New mic unit and build-in speaker with improved sound quality.

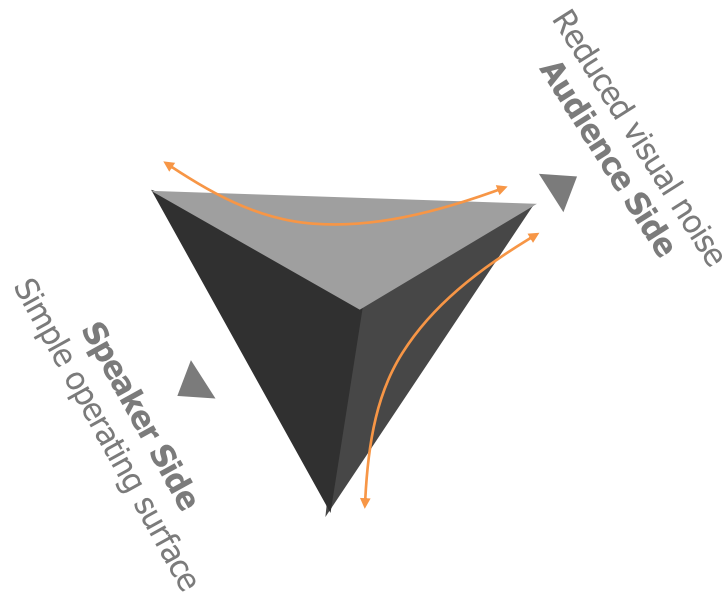
Overview



- New generation stand-alone conference system
- Visual noiseless design and high quality sound

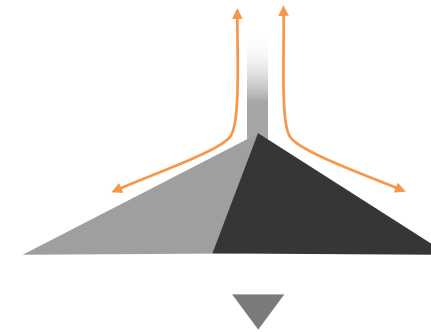
"Visual Noiseless"

Reduce the number of visible elements by providing a more planar design.



FRONT SPREAD

Opens to the user, narrows towards the back.



Audience Side

Reduced visual noise

PYRAMID SHAPE

Spreads to the foot, blends with the table.

Overview



- New generation stand-alone conference system
- Visual noiseless design and high quality sound

Improved shapes and optimized levels. "Quality Sound"



Mic shape improvements:

Long and short microphones for seated or standing speakers.
Designed to ensure sufficient volume and hard to clip.



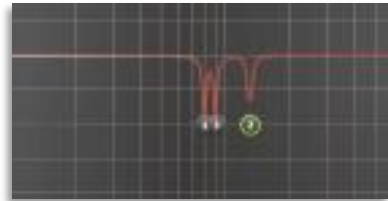
Mic and speaker with metal parts:
Reduced resonance, less vibration and sound blur.

Overview



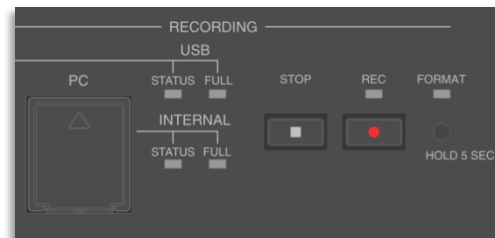
- Built-in feedback suppressor and recording via internal storage or USB.
- Control software* (custom made) for integration with other systems.

"Feedback Suppressor"



7-point automatic feedback suppression filter.

"Recording"



Record conferences directly to the central unit or to an attached USB stick.

"Control Software"

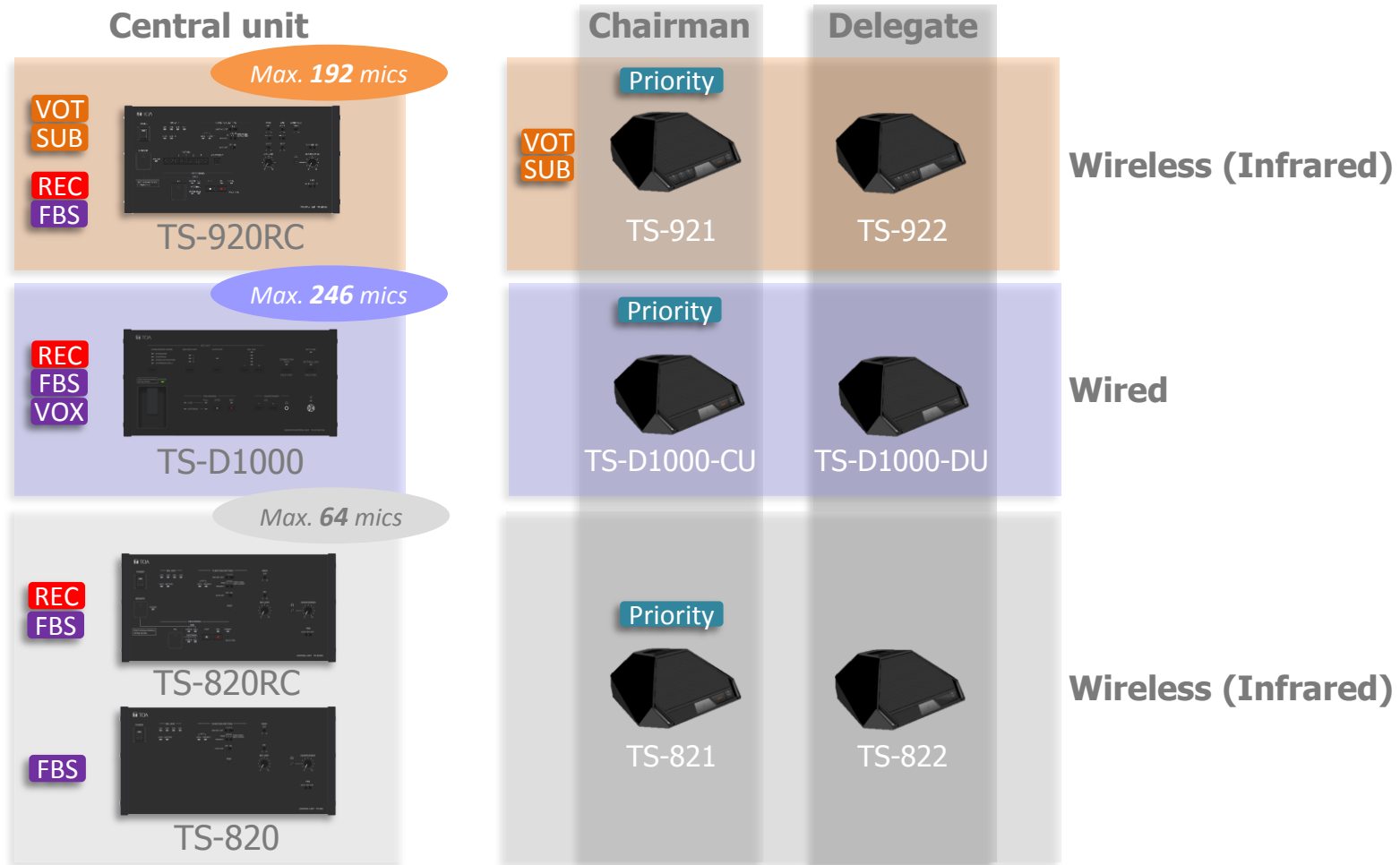


Remote protocol software for integration with other systems.

Overview



Line up



Overview

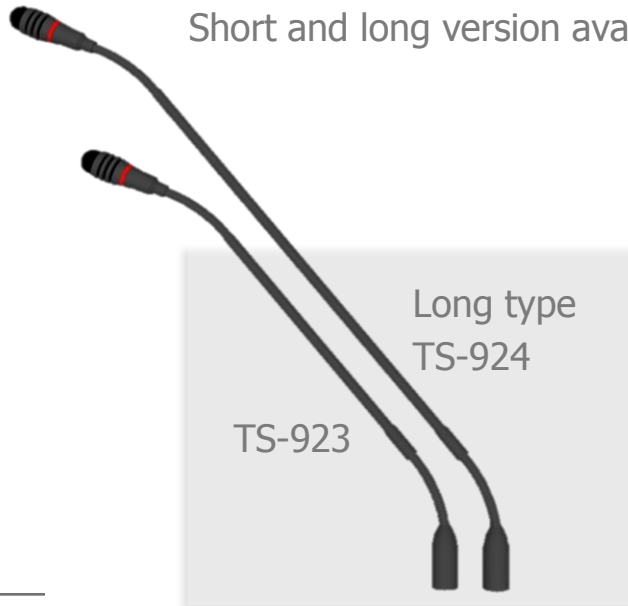


Accessories for TS-820/920

Microphone

TS-92# is a high quality type.
TS-90# is a low cost type.

Short and long version available for both.



TS-905
TS-907 (for high ceiling)

IR Transceiver

For ceiling installation.
TS-905: Low ceiling – wide area
TS-907: High ceiling – narrow area



YW-1022/1024

Distributor

YW-1022: 2 split
YW-1024: 4 split



Battery/Charger
BP-900A/BC-900



AC Adapter
AD-0910

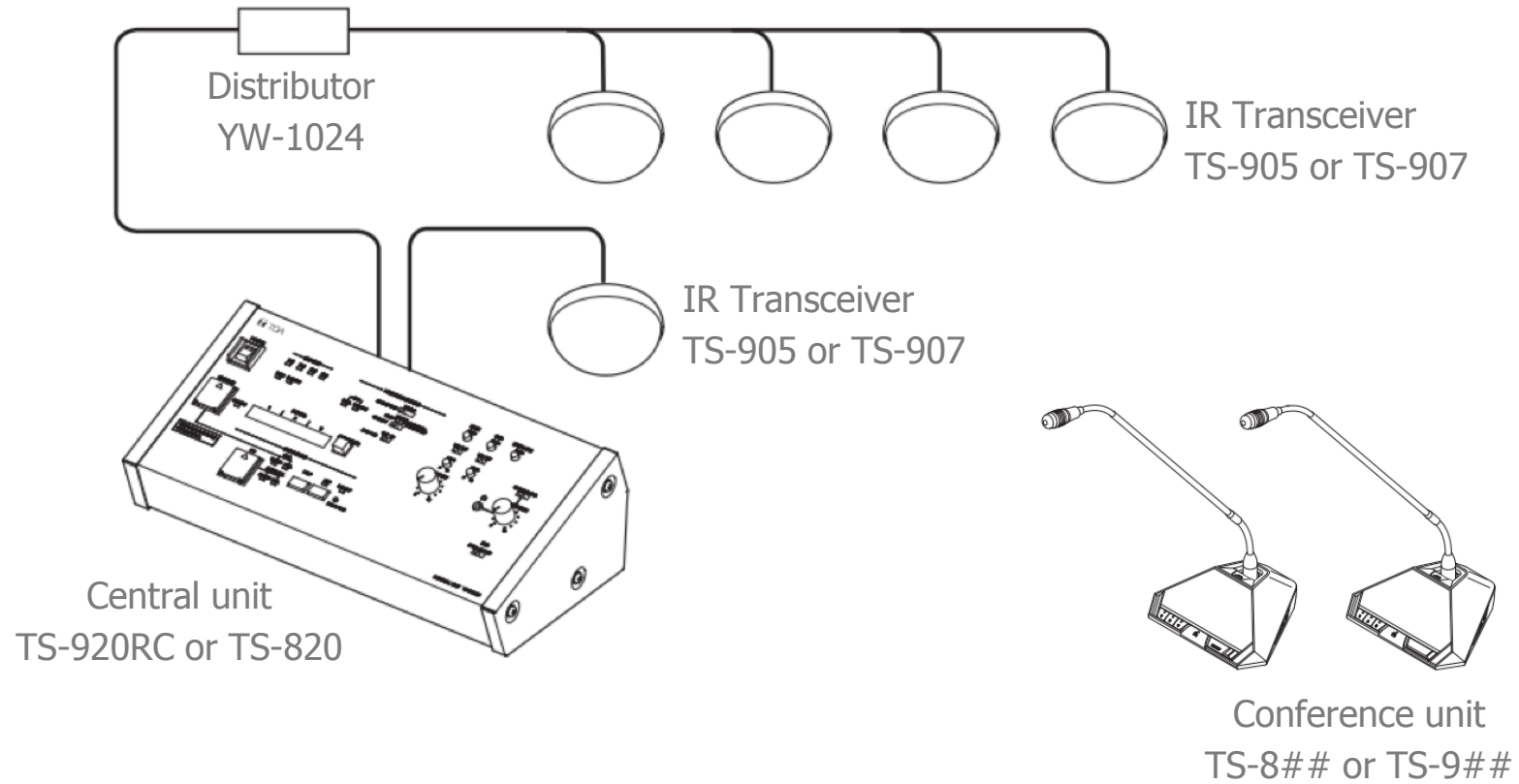
Power supply

Conference units powered
By battery or AC adapter.

Overview



Example structure for TS-820/920



Accessories for TS-D1000



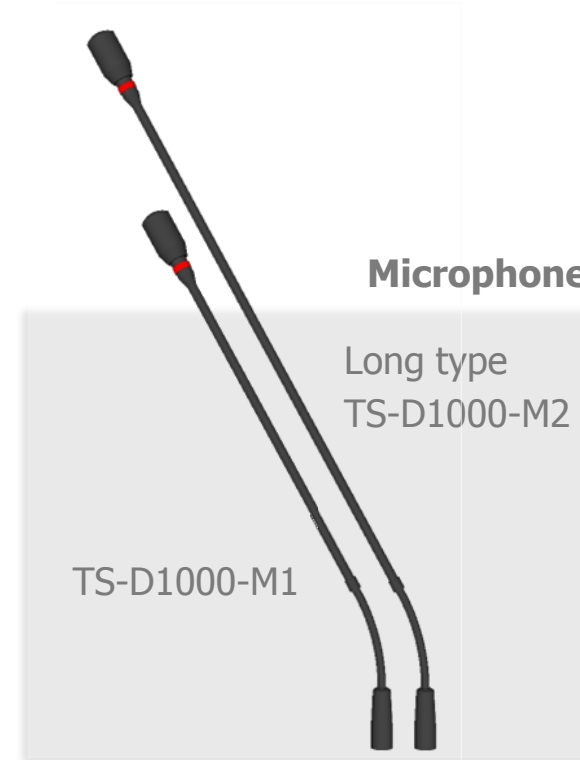
Sub control unit

Increase microphones by 48 conference units.



Extension unit

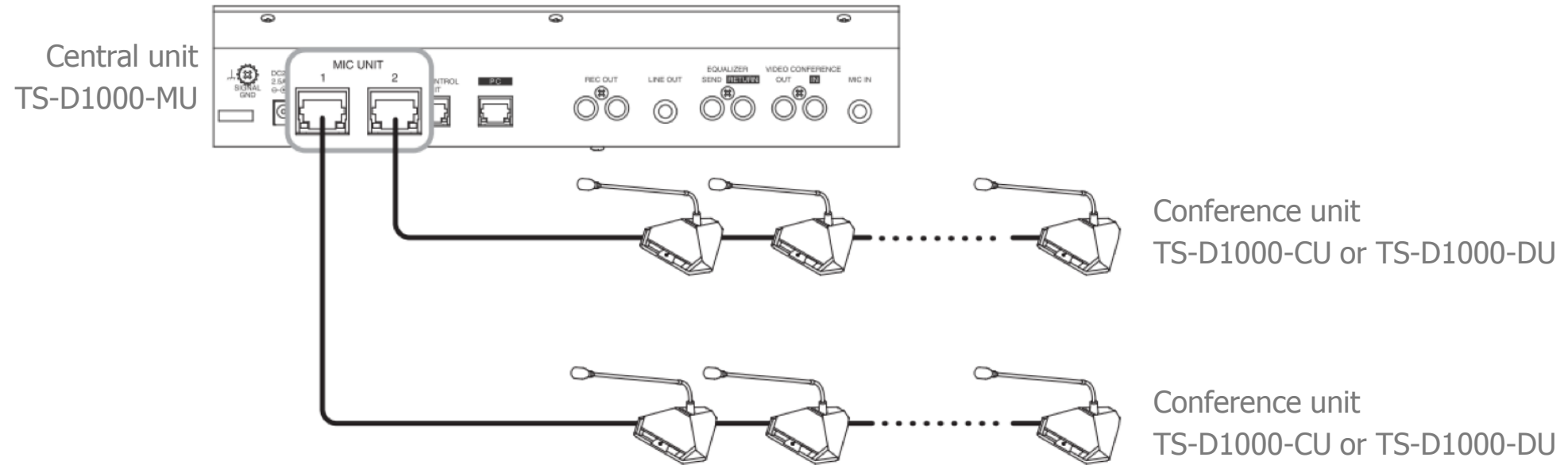
Used for long distance wiring.
Extends a line from 50m to 100m.



Overview



Example structure for TS-D1000



Functions



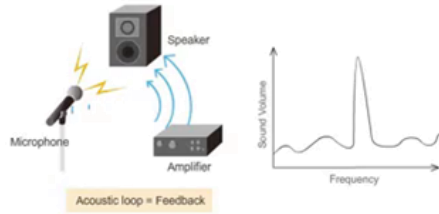
Speech Control



Voting (TS-920RC only)



FBS (Feedback Suppression)



Installation Test



Recording



External Control



Functions



Speech Control



Chairman's unit

Chairman's priority **Priority**

Chairman units feature a **Priority Speech Key** to interrupt delegate units.

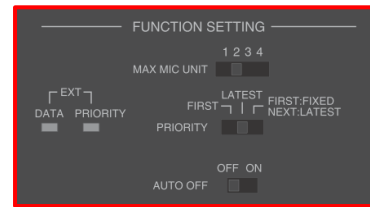


Number of open mics

Reduce chaos and confusion by limiting the Maximum number of active microphones.

(Settings TS-820/920: MAX MIC UNIT 1, 2, 3, 4)

(Settings TS-D1000: MAX MIC UNIT 1, 2, 8)



Voice Activation (TS-D1000 only) **VOX**

Activate mic by voice instead of button (VOX function). Max. number of open mics is fixed at 8 units, priority is first in – first out.



Time Out

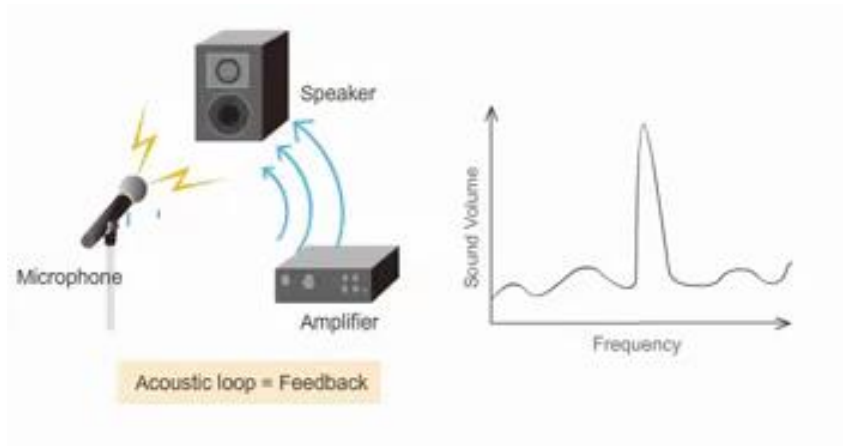
Optional automatic mic shutdown after 30s without input signal.

Functions

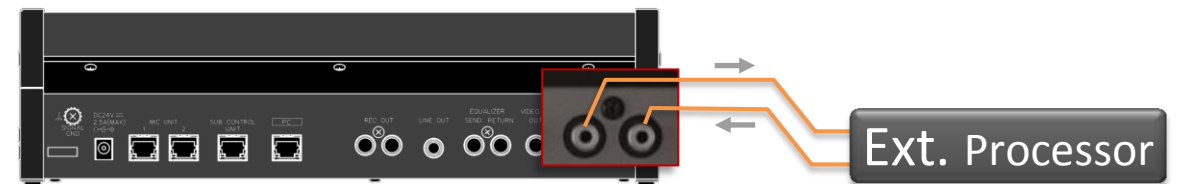


FBS (Feedback Suppression) **FBS**

A function which will automatically suppress and filter out acoustic feedback by 7-point DSP filter.



An external signal processor can be connected. The FBS route will be bypassed.



Functions



Recording **REC**



The TS-820RC/920RC and D1000 have a recording function integrated. The audio can be stored internally or on an external USB storage. All audio signals are recorded.

Storage and capacity

Internal memory: 1GB (approx. 18h40m)

External USB storage: Max. 32GB

(when connected, USB storage is prioritized for recording)

File format

mp3, fs=32kHz, 128 kbps

The recording is split every hour (54,9MB)

Playback and file management

Use PC to play, copy, delete, etc.

Functions



Voting (TS-920RC only) **VOT**



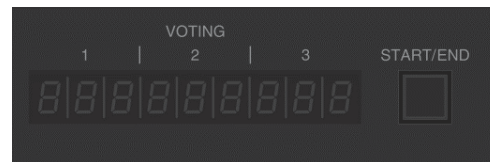
The TS-920RC and TS-92# units have a voting function.
Vote by using three keys on the unit.

Voting start

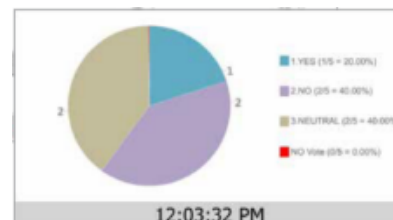
Voting can be started and terminated from the central unit or chairman unit.

Central unit: Press "Voting START/END" button for 1s or more.

Chairman unit: Press voting keys "1 & 2" simultaneously for 1s or more.

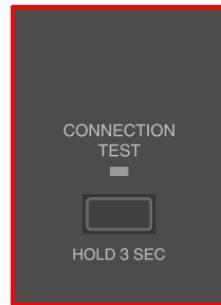


The results of the vote can be displayed in the custom made software or on the central unit.



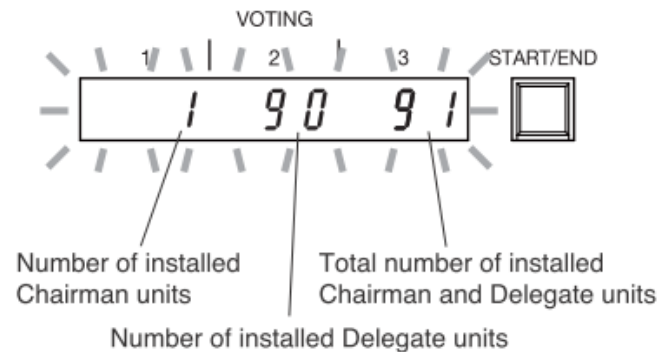
Installation test (general)

Installation status (connection test) for the units can be checked from the central unit. The test is started by key operation.



The "in-use" indicator on the chairman and delegate unit will start to flash if the device is connected properly.

On the TS-820/920 you can additionally check the number of connected units on the voting display.



Functions

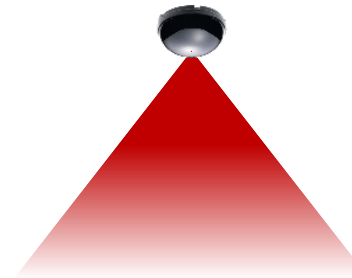


Installation test (wireless units)

The installation test has additional features when using the TS-820/820RC and 920RC wireless conference system.

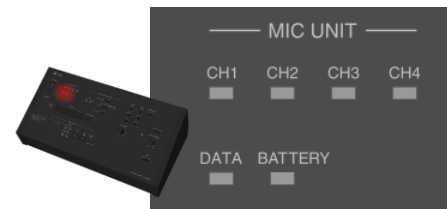
When the conference unit is out of the transmission area, the talk and power LED will start to flash.

Out of service area



Low battery

If there is a unit with low battery level, the LED of that unit and the central unit will flash.

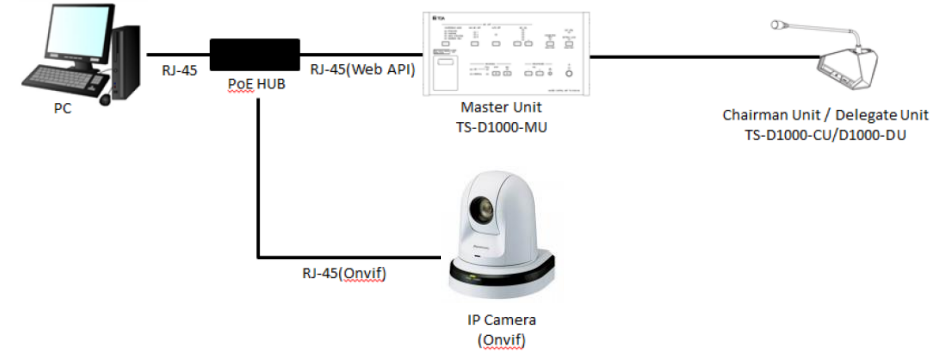


Functions



External control

The system can be controlled from external equipment such as PC.
It can also send status information to external controller.
A function to use ONVIF cameras is integrated and usable soon.



To central unit

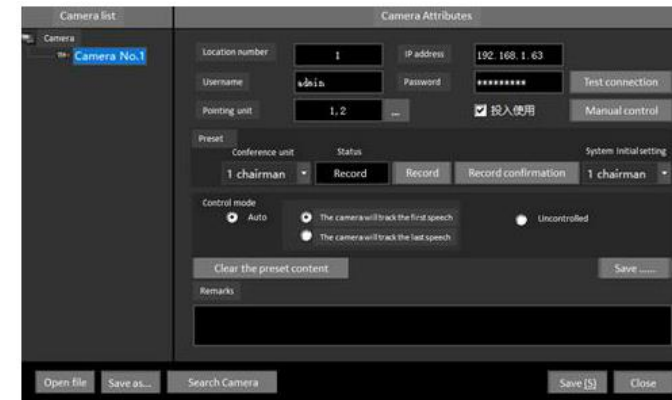


- MIC on/off
- Speech request cancellation
- Installation test start/stop
- Total input volume adjustment
- Setting query
- Speech status query
- Speech request status query
- Voting results (TS-920RC only)
- etc.

From central unit



- Setting change
- Function operation status
- Total input volume adjustment
- Battery alarm
- MIC on/off
- Speech request
- Speech request cancellation
- Chairman priority speech on/off
- etc.



Infrared system (TS-820/820RC and 920RC)

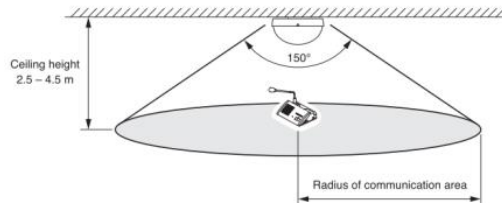
Maximum number of conference units



The max. number of conference units installed is **192** (TS-920RC), respectively **64** (TS-820/820RC).

There is no limitation on chairman or delegate units as long the max. number of conference units isn't exceeded.

Infrared service area



It must be taken into account during planning that the system has sufficient IR coverage.

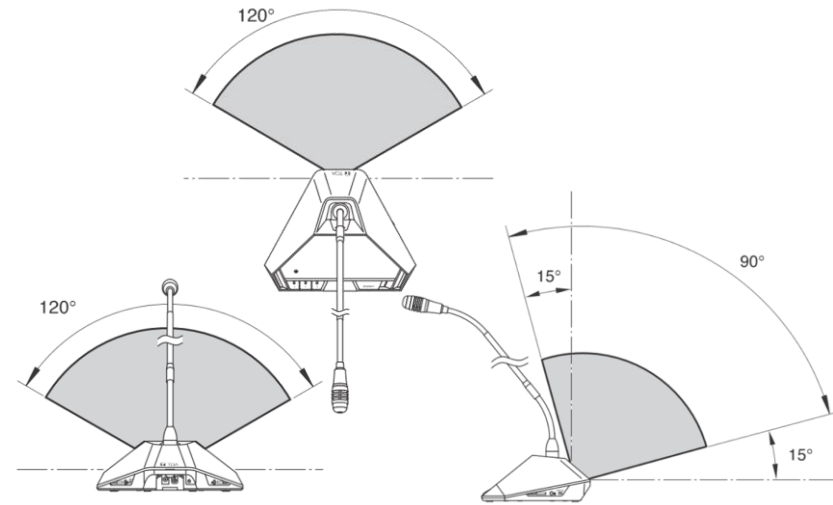
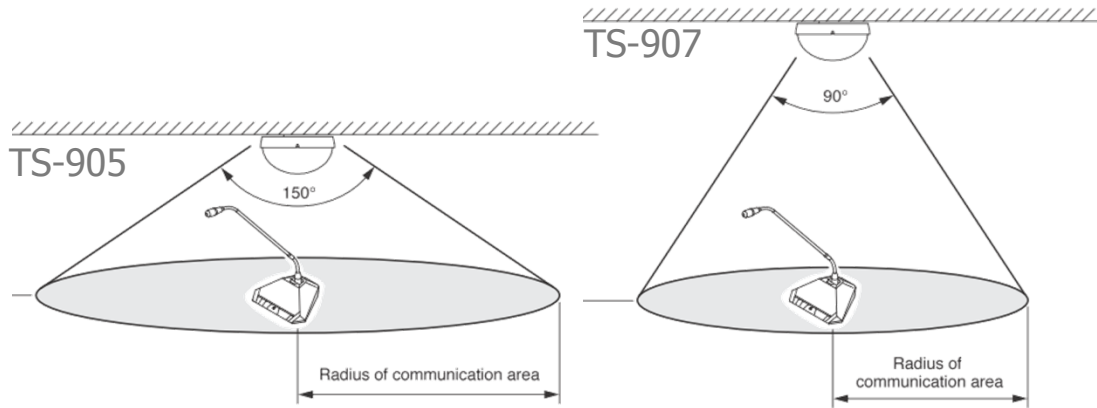


System design



Infrared system (TS-820/820RC and 920RC)

IR service area of transceiver and conference units



! TS-907 is high power for high ceiling, however the coverage area is narrow.

Model	Ceiling height	Radius of communication area
TS-905	2.5 m	Approx. 7.0 m
	3.0 m	
	3.5 m	Approx. 6.5 m
	4.0 m	
TS-907	4.5 m	Approx. 6.0 m
	5.0 m	
	5.5 m	
	6.0 m	
	6.5 m	
	7.0 m	



The conference unit's IR communication port is located on the back. The line of sight to the transceiver must not be interrupted.

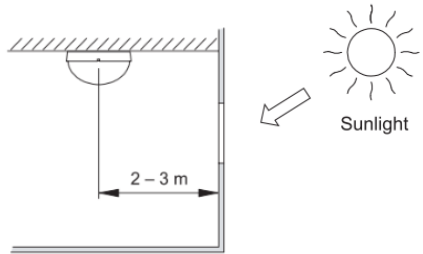
System design



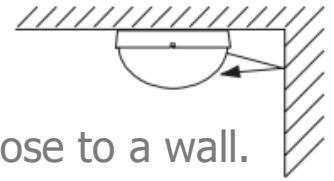
Infrared system (TS-820/820RC and 920RC)

IR service area of transceiver and conference units

Install the transceiver unit away from windows.



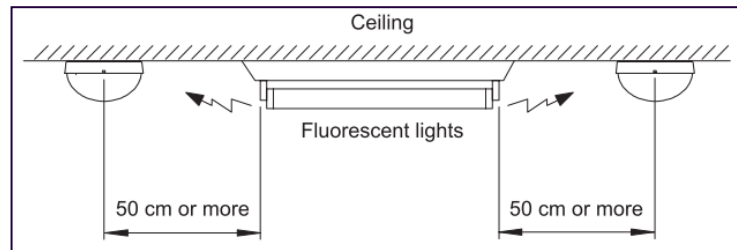
Keep the unit 2 – 3 meters away from the nearest window. Direct sunlight might affect the data transmission.



No installation close to a wall.

Avoid installations near the wall, column or obstacles. The unit could malfunction by detecting the own reflected signals.

Keep distance to fluorescent lights.



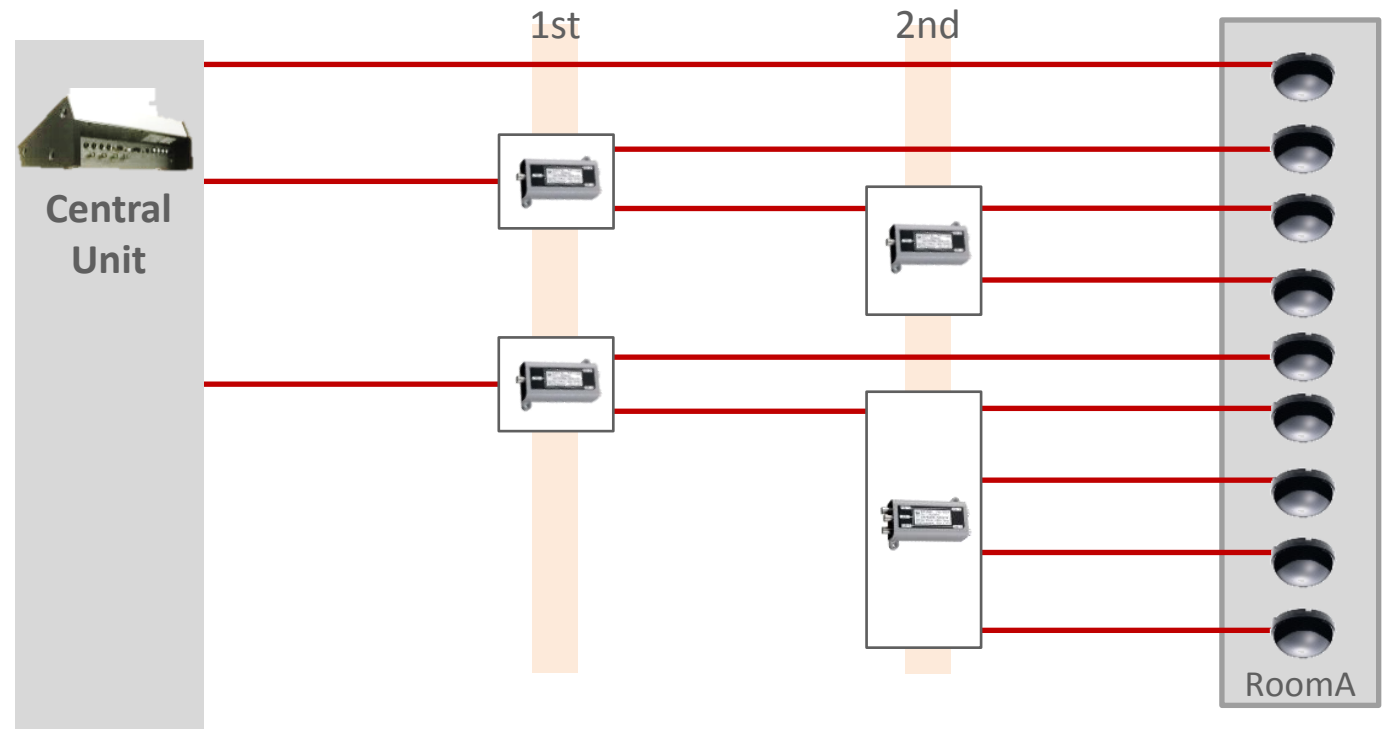
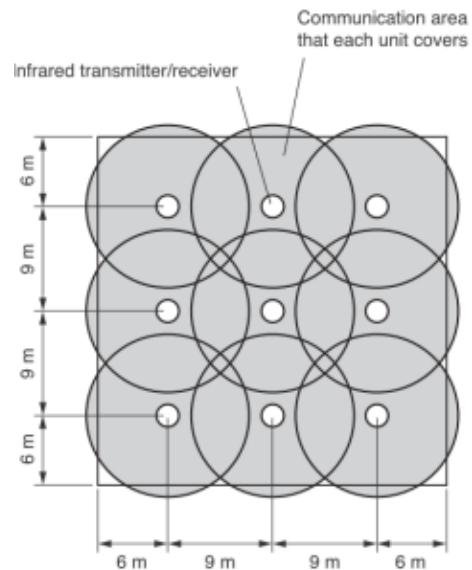
Keep a distance of 50 cm or more between the lights and the transceiver. Fluorescent lights may affect signal stability.

Infrared system (TS-820/820RC and 920RC)

Wiring for transceiver units

Once the quantity is decided, consider using distributor units to connect with the central unit.

- Central unit has 4 coaxial ports.
- Up to 2 distributor units can be installed per line.
- Max. number of transceiver units: 16 (all TS-905)
12 (TS-907 or mix)



System design

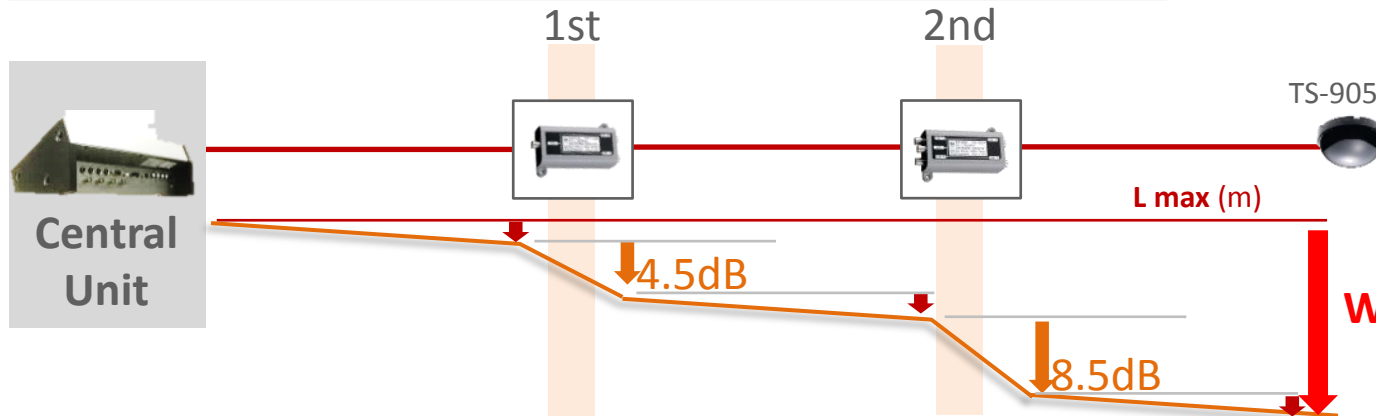


Infrared system (TS-820/820RC and 920RC)

Wiring for transceiver units – maximum length

Coaxial Cable Loss : CCL (/100m)		YW-1022	YW-1024
RG-59/U	3.3 dB	 ↓4.5dB	 ↓8.5dB
RG-6/U	2.7 dB		
RG-11/U	2.0 dB		

The signal level passing through the coaxial cable is attenuated by the line resistance and by passing through a distributor unit. The attenuation (wiring loss = WL) must be kept below 20 dB.



$$WL \text{ (dB)} = \frac{CCL \text{ (dB)}}{100 \text{ (m)}} \times L_{\max} \text{ (m)} + 4.5 \text{ (dB)} + 8.5 \text{ (dB)}$$

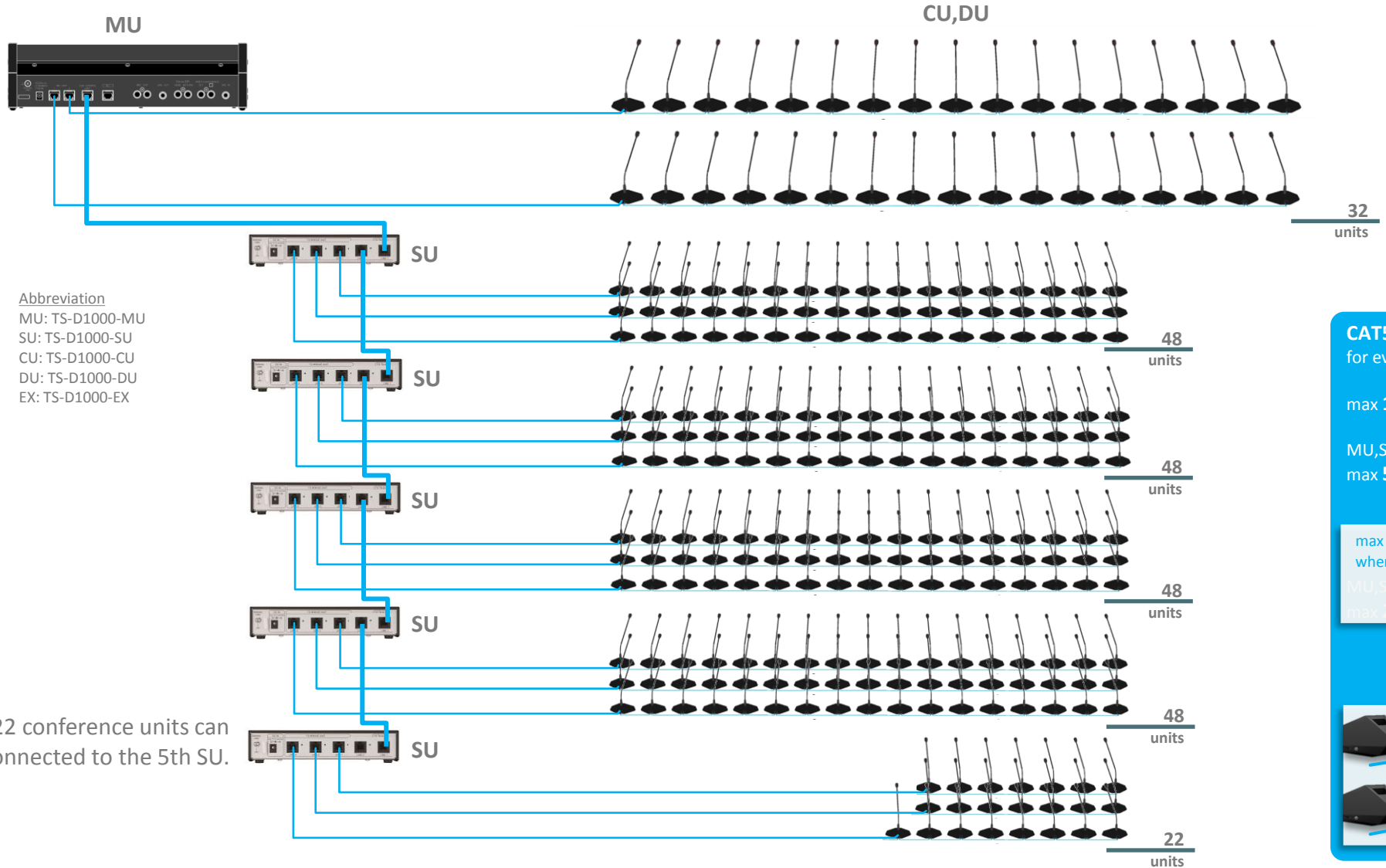
$$WL < 20 \text{ (dB)}$$


$$L_{\max} \text{ (m)} < \frac{100 \text{ (m)}}{CCL \text{ (dB)}} \times [20 \text{ (dB)} - 4.5 \text{ (dB)} - 8.5 \text{ (dB)}]$$

System design



Wired system (TS-D1000)



 Only 22 conference units can be connected to the 5th SU.


CAT5e STP
for every line

max 16 CU,DU /line

MU,SU - terminal CU, DU
max 50m /line

max 100m/line
when -EX is used.

MU,SU - SU
max 2m /line



There are 2 ports (RJ45), which can be used.



Thanks for your attention!

Q & A

TOA EXPORT ACADEMY

UPCOMING...

Voice Evacuation System VM-3000

Application & Project Design

Date: **02.12.2020**

Time: **11am – 12am** (German Time)



