KAREL

SHIP ENTERTAINMENT & ALARM & ANNOUNCE SYSTEM

Ship Entertainment & Alarm & Announce System is divided into 2 different system as AAS(Alarm Announce System) and GES (Ship Entertainment System) that work together in an integrated form . Ship Entertainment & Alarm & Announcement System has modular structure composed of multiple products integrating each other. AAS(Alarm Announce System) has functions so that alarms that are region-based can be sounded, announcements can be made toward selected regions and music can be broadcast on Radio-CD, Audio Jack and Media server.System has a DC-DC power supply that supplies the power of the whole system from a single point, can be configured to different power requirements. Power supply has special filters designed to prevent noise.The amplifier units can controlled and managed from General Control Unit (GKB) .

Video On Demand and TV broadcasts can be watched by using panels on entertainment system. Also, musics selected from the server and other music sources can be listened on the panels. Alarms and announcements are displayed and announced on the entertainment system panels.

The entire system can be configured easily and monitored for fault conditions by using software. System designed according to MIL-STD 461E and MIL-STD-810F military standards.

The system uses military connectors to take some preventions against corrosion, vibration and other deterioration. The system is suitable for easy installation and maintenance. Because of the modular structure, defective units can be easily changed without deteriorating system integrity.

The units of Ship Entertainment & Alarm & Announcement System has shown below :

- Alarm / Announcement Control Rack
  - General Control Unit (GKB)
  - Music Control Unit (MKB)
  - Loud Speaker Control Unit (LSCB)
  - Alarm Announcement Station (AAI)
  - Media Selection Unit (MSU)
  - Central Computer Unit(CCU)
  - Program Selection Unit (PSB)
- Horn type speakers
- Built-in speakers
- Speaker Sound Adjustment Units
- Entertainment Panels (with 7 different mounting panels)
- Ethernet Network Distribution Units (NDU)
- Mini Hi-Fi Unit
- Uninterruptible Power Supply (PDU)
- Antenna Distribution Unit (ADU)
- DVD Recorder, TV Units and connection sockets
- Antenna

Fundamental Features

Alarm / Announcement Control Rack

Alarm / Announcement control rack is composed of General Control Unit (GKB),Music Control Unit (MKB),Loud Speaker Distribution Unit (LSCB),Alarm Announcement Station (AAI),Media Selection Unit (MSU) and Central Computer Unit (CCU) . General Control Unit is central processing and control unit of the system. All operation are performed by software on General Control Unit in the system. The transmission of the alarm / announcement information is transmitted to the ship's general area or the selected areas on General Control Unit.The electronic cards that perform some related functions are placed according to the appropriate configuration in General Control Unit. General Control Unit was designed to be scalable. More than one GKBcan be connected in a cascade structure together according to system requirements . Backplane card has an interface with 2 processor (CPU) cards that are spared ,MODBUS Interface card, AAI Control Card, Radio & CD Control Card and 7 + 1 amp units control cards. General Control Unit is integrated into ship communication switching system on MODBUS card.

Music Control Unit (MKB) is composed of Broadcast selection interface card and and auto tape.The general purpose of Music Control Unit is to transmit audio broadcasts coming from an auto tape (AM, FM or CD) / media server (saved music files) or external audio connection.

Loud Speaker Control Unit (LSCB) provides a connection between General Control Unit and all internal and external horn speakers in the system. The volume control units that will be used for horn speakers are also connected directly to the Speaker Distribution Unit.

Alarm Announce Station(AAI) ,Announcements can be made toward selected zones and desired alarms can be given through the keys on AAI. Alarm types and area descriptions are flexible and new alarm types can be specified and easily added to the system.

Media Server Unit(MSU), is the server of ship entertainment system. MSU consist of COTS Media Server, Mini PC (Single Board Computer) unit, TV / Radio Tuner (Antenna / USB converter) and Ethernet Switch units.The subunit of MSU which has an ETH interface with CCU,GKBand ND subunits,has RF interface with ADU.The RF signal coming from the ADU interface is multiplied by 4 with ¼ splitter. One of these signals is sent to GKB and the rest of 3 signals are sent to the Antenna / USB transducer located in the MSU subunit .Also, 2 cascade ethernet switches located in MSU, are used to distribute all signals on these units.

Central Computer Unit(CCU) is control unit of the central system. CCU is composed of a PC unit that is a type of COTS.CCU consists of asoftware, server web interface, and another sofware that enables to covert to the recorded audio / video files to the desired format. GKB-configuration can be displayed with a software and regional assignments can be made for the ILS and HLS loudspeakers in the system. At the same time, alarm termination times can be set. The operations of naming, sorting, deleting, loading, etc are performed for Audio / Video files in the MSU.

Network Distribution Unit(NDU), is a unit that contains 2 cascade-connected ethernet switches.It is used to make distribution between EPs and PSU's with MSU.

Program Selection Unit (PSB),There are 3 units in the system. PSB is a unit connected to MSU through ND's like EP's. TV units connected to PSU's can access t Live / Audio / Media broadcasts placed in MSU to watch and listen with PSBremote control. PSB contains a Mini PC (Single Board Computer) unit and two input modulators. The modulator card receives and modulates DVD and Satellite transmissions and transmits them to ADU.PSB receives TV broad-casts and recorded videos coming from Ethernet on MSU and sends them to TV units from HDMI port. There is a connection between PSB and HIFI to silence HIFI units during incoming alarm signal.

Entertainment Panels, has 7 different mounting panels in system.EP's that consist of COTS panel PC units are part of the entertainment system. It connects to MSU through ND. EPs can select Live/Audio/Media to listen and watch on MSU.This information is shown on EP's during Alarm/ Anounce.

Power Distribution Unit (PDU),has 220VDC interface.It converts 200VDC coming from the ship to 48 VDC that is supply voltage of subunits and distribute it on its interfaces.Battery pack is located in PDU unit. It contains LED indicator which shows that the supply voltage comes from ship or battery.The information that the supply voltage comes from the ship is transmitted to GKB.Also, there are circuit breakers and LED indicators related to distribution interfaces.

Antenna Distribution Unit (ADU), collects signals coming from PSB's and antenna with 1/16 splitter, ICS Mono block and RF signal collection card that are located in ADU and then transfers these signals to output connectors.It provides a connection with MSU,TV units,HIFI units and DVD's through output connectors.All RF signals are shut down with the incoming signal coming from "ICS Mute" connector that is found on ADU unit.

Environmental Features

All devices except COTS devices are compatible with EMI EMC standards specified in MIL-STD-461E in system.

Storage and Transport Temperature Features: All devices located in the system except COTS devices can be stored at temperature values between -30 ºC / + 70 ºC according to the test methods specified in MIL-STD-810F .

Storage and Transport Humidity Features: All devices located in the system except COTS devices can be stored at 40 ºC and 95% relative humidity conditions according to the test methods specified in MIL-STD-810F.

Operating Temperature Features : All devices located in the system except COTS devices can be operated at temperature values between -10 ºC / + 55 ºC according to the test methods specified in MIL-STD-810F.

Air Pressure: All devices located in the system except COTS devices can not be affected as physically and functionally by pressure chnages which may occur at any time, between 0.8 bar and 1.4 bar.

Noise Level: Generated noise can exceed 49 dB (A) at a distance of 0.5 meters when the system is 'standby' mode .

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