Reference to Figure 14 Audio Management System Overview

ATA 23 COMMUNICATIONS

23–51 AUDIO MANAGEMENT

AUDIO MANAGEMANT DESCRIPTION

System Layout

The audio management system provides the means for using:

- All the radio communication and radio navigation facilities installed on the aircraft:
  - In transmission mode: it collects the microphone inputs of the various crew stations and directs them to the communication systems.
  - In reception mode : it collects the audio outputs of the communication systems and the navigation receivers and directs them to the various crew stations.
- The flight interphone system:
  - Telephone links between the various crew stations in the cockpit.
  - Telephone links between the cockpit and the ground crew from the external power receptacle.
- The SELCAL (Selective Calling) system:
  - Visual and aural indication of calls from ground stations equipped with a coding device used by the aircraft installation.
- Certain calls:
  - Visual and aural indication of the ground crew and the Cabin Attendants' calls.

The system comprises:

- 1 AMU,
- hand microphone receptacles (CAPT and F/O),
- 2 loud speaker potentiometers with incorporated switches,
- 2 radio PTT switches at the sidestick,
- 1 jack for the ground crew
- 1 AUDIO SWITCHING selector switch
- 1 SELCAL code panel.
- 3–5 ACPs
- 1 headset jack (Fourth Occupant)
- 4 oxygen mask stowage boxes
- 3 jack panels
- 2 loud speakers which are part of the central warning system,
- 3 oxygen mask microphones which are part of the oxygen system,
- FLIGHT/GROUND information from the LGCIU.

SIDE STICK (F/O)
SIDE STICK (CAPT)
1
2

BOOMSET HEAD SET (3rd OCCUPANT)
BOOMSET HEAD SET (F/O)
BOOMSET HEAD SET (CAPT)
1
2
3

(3rd OCCUPANT)
(F/O)
HAND MICROPHONE (CAPT)
1
2
3

OXYGEN MASK (3rd OCCUPANT)
OXYGEN MASK (F/O)
OXYGEN MASK (CAPT)
1
2
3

Audio Control Panel (ACP)- 3rd OCCUPANT (20VU)
Audio Control Panel (ACP)- F/O (11VU)
Audio Control Panel (ACP)- CAPT (11VU)
CALL MECH ATT
VHF1 VHF2 VHF3 HF1 HF2 INT CAB
RAD VOICE RESET PA
VOR1 VOR2 MKR ILS MLS ADF1 ADF2

AUDIO MANAGEMENT UNIT (AMU)

SELCAL

LOUDSPEAKER
OFF MAX

LOUDSPEAKER (CAPT)

FLT INT
COCKPIT CALL
COCKPIT CALL RESET

EXTERNAL POWER CONTROL PANEL (108VU)

COM SYSTEMS
VHF 1,2,3
HF 1,2
CIDS DIR 1,2
CVR
RAD NAV SYSTEMS
(ILS,VOR/MKR,DME,ADF)
SATCOM

FWC

LGCIU

SELCAL CODE SELECTION
A A A A

(80VU)

LOUDSPEAKER
OFF MAX

LOUDSPEAKER (F/O)

Figure 14 Audio Management System Overview

Reference to Figure 15 Cockpit to Ground Crew Call System Overview

23–42 COCKPIT TO GROUND CREW CALL SYSTEM

CALL SYSTEM DESCRIPTION

General

The ground crew call system enables crew member–to–ground mechanic or ground mechanic–to–crew member calls.

It has also an aural warning function when the aircraft ison ground for the following:

- APU fire,
- ADIRS powered by batteries,
- Battery discharge on GND,
- Equipment ventilation faulty,
- ELT operation.

Power Supply

The ground crew call system is supplied with 28VDC power from the 28VDC HOT BUS 702PP.

Operation

The system operates on the ground only, with the left and right main landing gear shock absorbers compressed.

Ground Mechanic–to–Crew Member Call

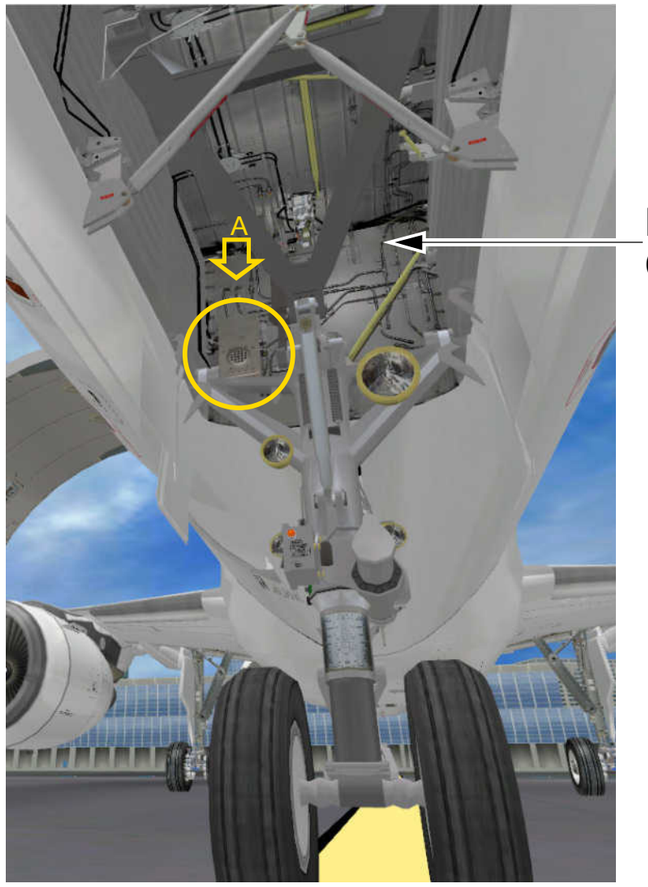
When pressing the COCKPIT CALL pushbutton switch a ground signal is applied to the FWCs triggering the buzzer circuit which feeds the aural warning signal to the loud speakers. This ground signal also causes the illumination of the MECH legend on the ACPs.

Cockpit Crew Member–to–Ground Mechanic Call

During all the time the pilot presses the CALLS/MECH pushbutton switch located on the overhead panel, the mechanic call horn sounds. The blue COCKPIT CALL indicator light comes on.

When the pilot releases the CALLS/MECH pushbutton switch, the mechanic call horn stops but the indicator light remains on. This indicator light goes off when the mecanic presses the RESET pushbutton switch located on the panel 108VU or when the aircraft is in flight condition.

The MECH CALL Horn is located in the nose wheel compartment.



NOSE WHEEL COMPARTMENT

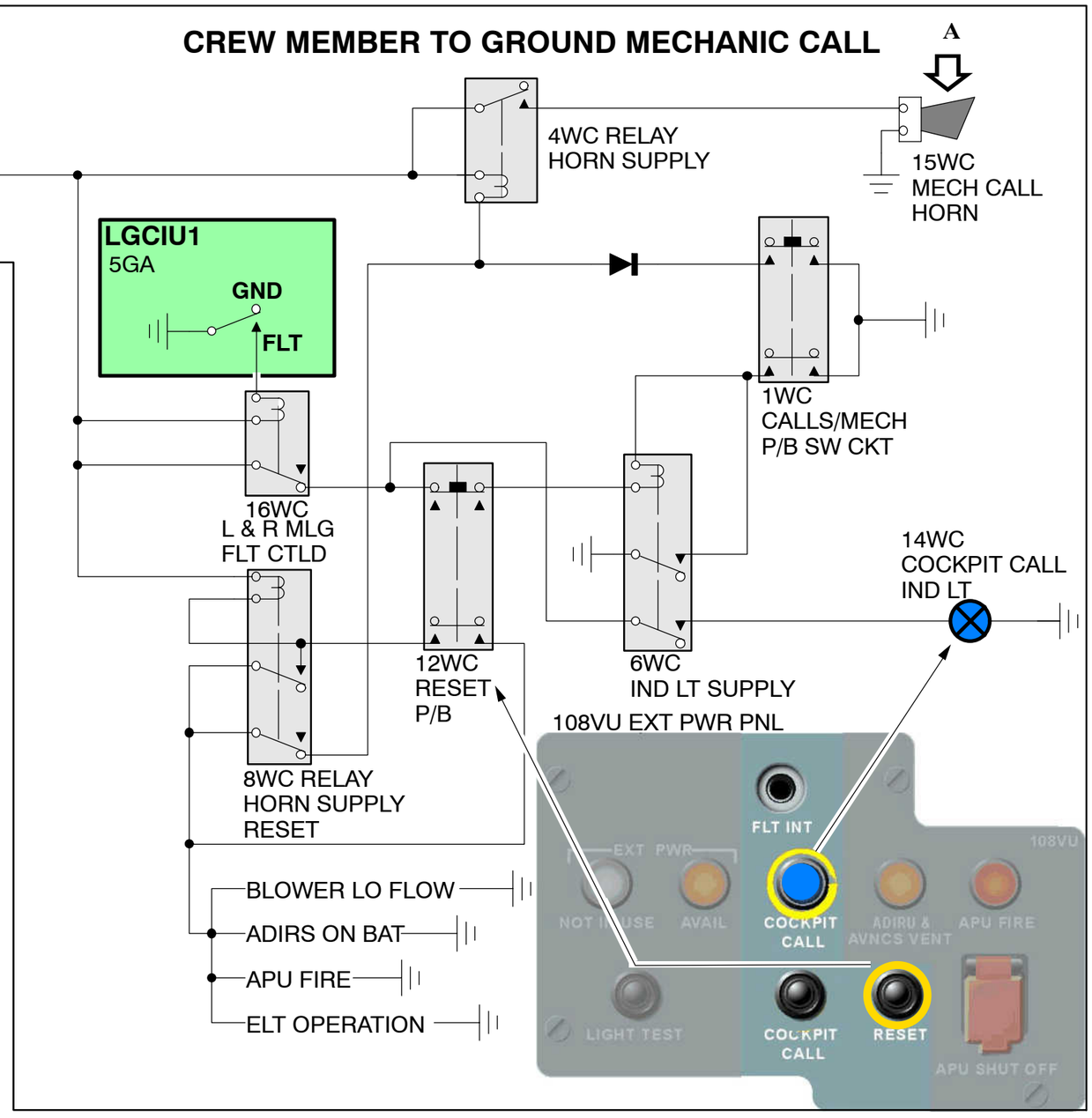


Figure 15 Cockpit to Ground Crew Call System Overview

Reference to Figure 16 Radio Managemnt System Overview

23–13 RADIO MANAGEMENT

SYSTEM DESCRIPTION

General

The radio management panels (RMP) centralize radio communication (VHF, HF) frequency control.

They can also serve as backups of the flight management and guidance computers (FMGC) for radio navigation frequencies control (VOR/DME, ILS, ADF(if installed)).

The aircraft is equipped with two or three RMPs which are identical and interchangeable.

RMP Description

1 Windows

There are 2 display windows :

- The ACTIVE window displays the operational frequency.
- The STandBY/CouRSE window displays the standby frequency or the course in back–up navigation mode.

The windows are liquid crystal displays with a high contrast.

2 Communication Keys

There are 5 pushbutton keys for the radio communication systems. When a key is pressed, the ACTIVE and the STandBY frequencies are automatically displayed in the dedicated windows.

3 SEL Indicator

The SEL indicator light comes on WHITE, when a non dedicated Radio Management Panel takes control of the system frequency selection.
The normal configuration is :

- RMP1 allocated with VHF1
- RMP2 allocated with VHF2
- RMP3 allocated with VHF3, HF1/2.

If VHF2 is selected on RMP1, the SEL light comes on WHITE on RMP1 and RMP2.

4 Dual Selector Knob

The DUAL SELECTOR KNOB is used for the selection of the frequency/course displayed in the STandBY/Course window.

5 ON/OFF Switch

The latching ON/OFF switch allows the crew to set the RMP on or off.

6 Transfer P/B

When the TRANSFER key is pressed, the operational frequency becomes the STandBY frequency and the STandBY frequency becomes the operational frequency.

7 Amplitude Modulation Key

The Amplitude Modulation (AM) key is associated with the HF system for communication with stations using amplitude modulation transceivers.

8 Navigation Receiver Keys

The NAVigation guarded pushbutton key allows the radio navigation systems to be selected, in back–up mode only, when the Flight Management Guidance Computers (FMGCs) are failed.

In radio navigation back up mode, navigation frequency/course selection is performed using the dual selector knob.

Operation

The RMPs have two modes of operation:

- the normal mode (VHF & HF tuning),
- the radio–navigation back–up mode.

Normal Mode

The operating frequencies of all the transceivers can be displayed and modified on one RMP.

The RMPs exchange the various frequencies selected for the transceivers through dialogue buses.

Any new selection made on one RMP is taken into account by the others two.

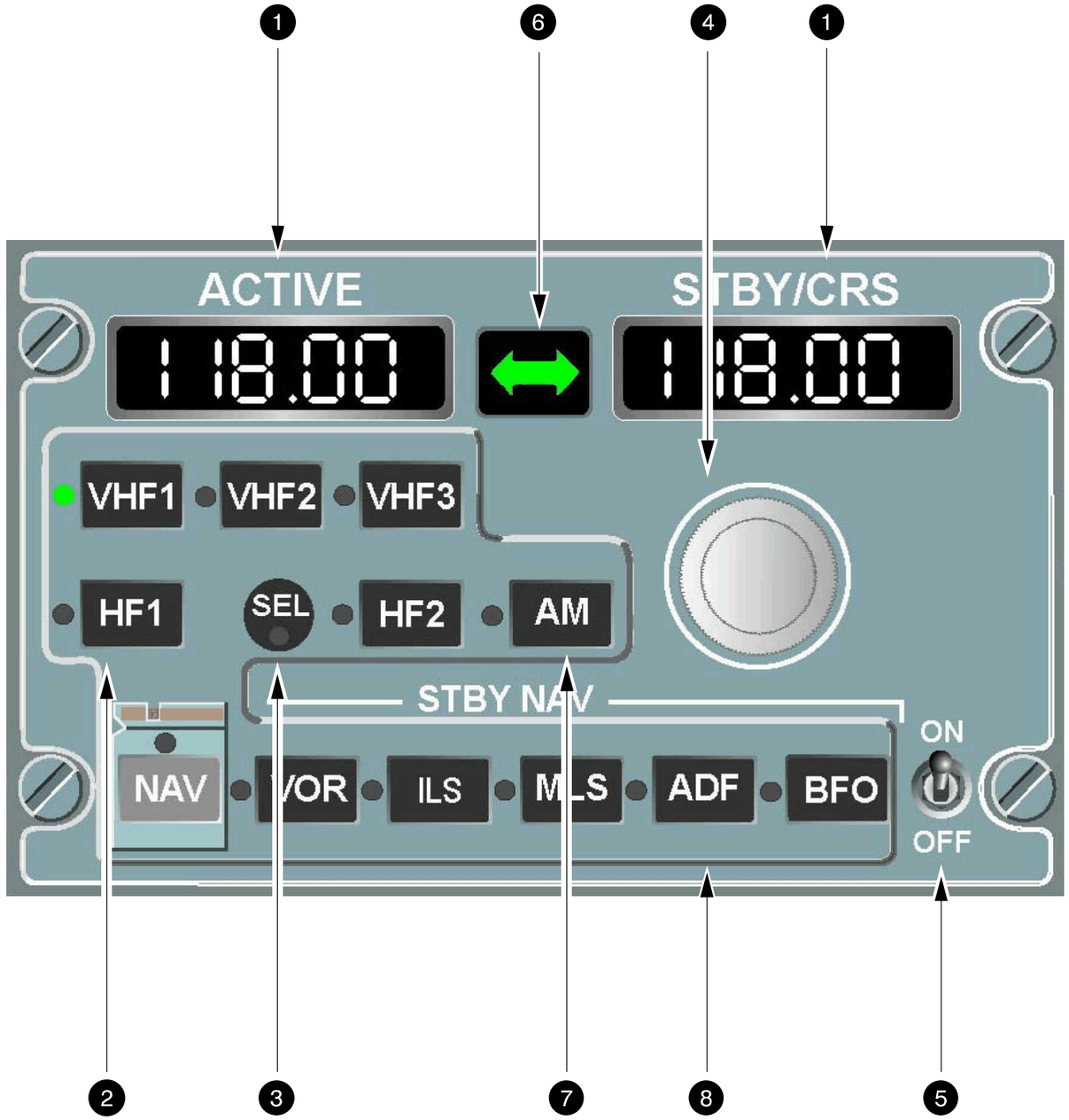
In addition, the RMP1 or the RMP2 (set to OFF) can be made transparent for the RMP3.

Radio–Navigation Back–Up Mode

This mode is selected in the event of failure of both FMGCs, on the RMP1 and the RMP2 only.

In addition to normal mode functions it also enables the frequency control of the radio navigation equipment :

- On Captain side (VOR1, DME1, ILS1, ADF1*) for the RMP1
- On First Officer side (VOR2, DME2, ILS2, ADF2*) for the RMP2.
  * = if installed



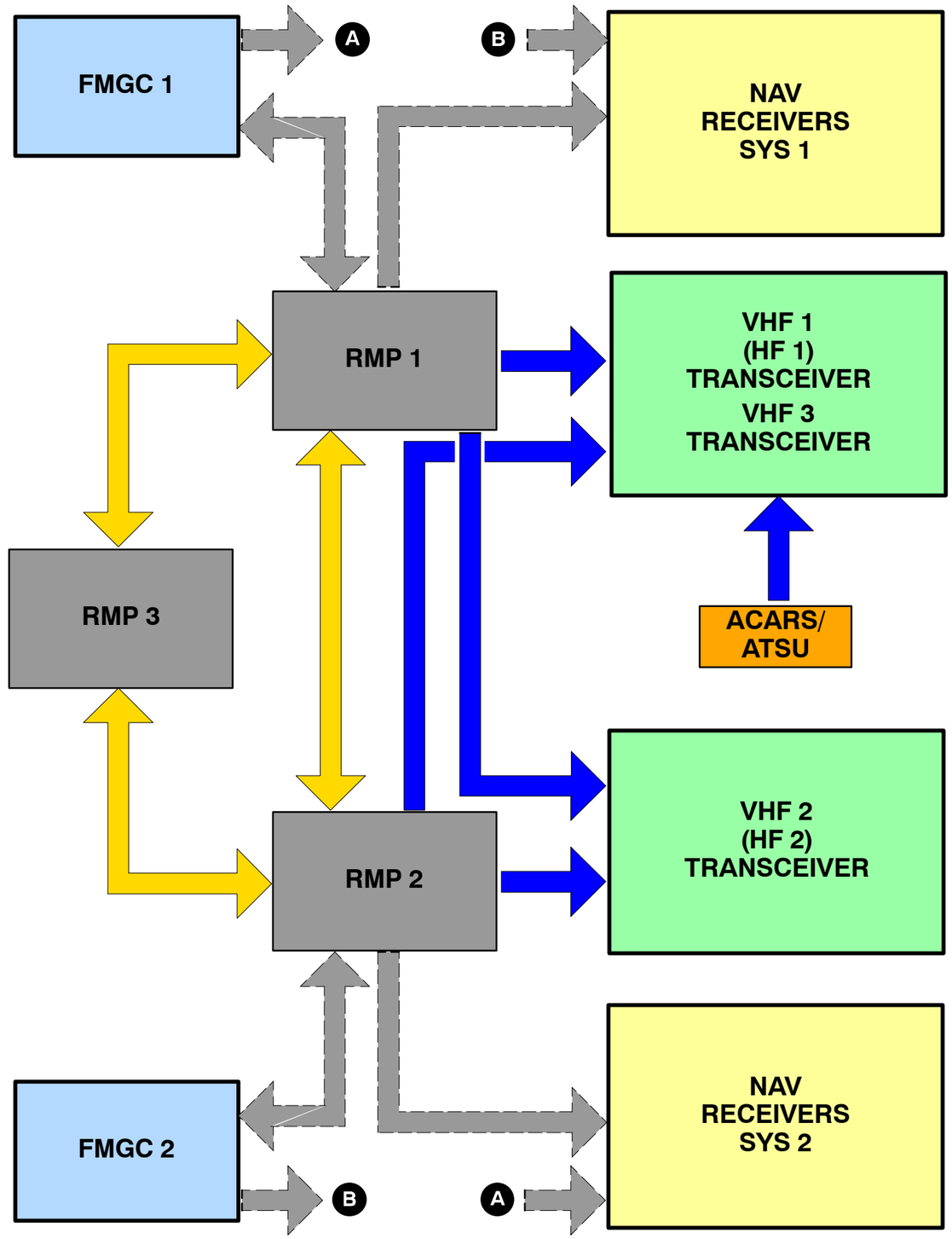


Figure 16 Radio Managemnt System Overview

Reference to Figure 17 VHF/HF System Overview

23–11 HF SYSTEM

HF SYSTEM DESCRIPTION

General

The HF (**H**igh **F**requency) system is used for all long–distance voice communications between:

- different aircraft (in flight or on the ground),
- the aircraft and
- one or several ground stations.

The HF system operates within the frequency range defined by ARINC 719 (i.e. 2.8 to 23.999 MHz, with 1 KHz spacing between channels).

System description

The HF system has (maximum):

- two HF transceivers,
- two HF couplers,
- an HF antenna.

The two transceivers send and receive HF signals to/from the same HF antenna through their related coupler.

HF System Interface

Each HF system has an interface with the following systems and components:

Radio Management Panels (RMP) - Frequency Select

Audio Management Unit (AMU) - Audio

Centralized Fault Display Interface Unit (CFDIU) - BITE

Landing Gear Control Interface Unit (LGCIU) - AIR/GND

System Data Acquisition Concentrator (SDAC) - HF EMITTING

Options when HF Digital Radio (HFDR) is used:

- *Air Traffic Service Unit (ATSU) or ACARS MU - DATA*
- *Air Data/Inertial Reference Units (ADIRU) - Time/POS*
- *Ground HF DATA LINK P/B - GND HF DATA LINK*
- *International Civil Aircraft Organization (ICAO) address*
- *Multipurpose Disk Drive Unit (MDDU) or Portable Data Loader (PDL) - HFDR Software*

23–12 VHF SYSTEM

VHF SYSTEM DESCRIPTION

General

The VHF (**V**ery **H**igh–**F**requency) system is used for all short–range voice communications between:

different aircraft in flight

aircraft (in flight or on the ground) and ground stations.

The VHF system operates within the frequency range defined by ARINC 716 (i.e. 118 to 136.975 MHz with 25 KHz or 8.33 KHz spacing between channels).

The aircraft is equipped with three identical VHF systems which are fully independent: VHF1, VHF2 and VHF3.

The VHF3 system may also be used to transmit data link messages (ACARS/ATIMS).

System description

Each VHF system is composed of:

- a transceiver
- an antenna.

Each VHF system has an interface with the following systems and components (same reasons as for HF):

Radio Management Panels (RMP)

Audio Management Unit (AMU)

Centralized Fault Display Interface Unit (CFDIU)

Landing Gear Control and Interface Unit (LGCIU)

System Data Acquisition Concentrators (SDAC)

Air Traffic Service Unit (ATSU) or ACARS MU.

RMP 1

RMP 3

RMP 2

VHF ANTENNAS

TUNING

VHF 1,2,3 TRANSCEIVERS

BITE

HF 1,2 TRANSCEIVERS

BITE

HF 1,2 COUPLERS

AIR
GND
LGCIU

CONT
EMMITING
SDAC

AUDIO
IN/OUT
AMU

ACPs

CFDS

HF ANTENNA

HF ANTENNA

Reference to Figure 18 ACARS Overview

23–24 ACARS

ACARS DESCRIPTION

General

The ACARS MU (**A**ircraft **C**ommunications **A**ddressing and **R**eporting **S**ystem **M**anagement **U**nit) is an equipment which permits exchanges of data between the aircraft and the airline.

The radio transmission/reception of messages is performed by the VHF 3 transceiver which is controlled (in frequency and in transmission activation) by the ACARS MU.

The main functions of the ACARS are:

- In transmission mode management of data delivered by the:
  - System Data Acquisition Concentrator (SDAC),
  - Flight Warning Computer (FWC),
  - Data Management Unit (DMU) or DMU part of the FDIMU,
  - Centralized fault display interface unit (CFDIU),
  - Flight Management and Guidance Computer (FMGC).
- Reception mode:
  - management of the reception, printing and display of the ground messages,
  - reception of the meteo data.

ACARS Interfaces

The ACRAS MU has interfaces with:

- the VHF3 transceiver,
- the RMPs
- the Flight Management Guidance Computers 1 and 2 (FMGC),
- the Data Management Unit (DMU),
- the System Data Acquisition Concentrators 1 and 2 (SDAC),
- the Centralized Fault Display Interface Unit (CFDIU),
- the Flight Warning Computers 1 and 2 (FWC),
- up to three Multipurpose Control & Display Units (MCDU),
- the multi-input cockpit printer

Operational connection with the VHF3 XCVR

The ACARS MU tunes the VHF3 XCVR when it has control provided by the selection on the RMP.The MU can resume control of the VHF 3 after a time interval of 2 minutes has elapsed since the last VHF 3 push–to–talk activation.

An audio input, an audio output and a transmission control discrete (data keyline) are linked between the two units.

Operational connection with the DMU

Each report generated by the DMU can be programmed individually for transmission to the ACARS MU either automatically or manually. The MU informs the DMU when each report has been duly transmitted to the ground.

The ACARS MU can also require generation and transmission of any report by the DMU.

Operational connection with the CFDIU

All the fault messages and all the warnings recorded by the CFDIU can be transmitted automatically to the ACARS MU as soon as the CFDIU receives them from a system or a Flight Warning Computer.

The CFDIU can transmit the post–flight report automatically to the ACARS MU at the end of the flight. This report can also be transmitted to the ACARS MU manually.

Any page displayed by the CFDIU on one MCDU, which is a resultant of the dialogue in menu mode between the CFDIU and a system, can be transmitted manually to the ACARS MU.

Operational connection with the FMGCs

The ACARS MU is linked to the FMGC1 and 2.

The FMGCs transmit the following messages to the ACARS MU either automatically or manually:

- request for flight plan initialization
- request for wind messages
- pre–flight report or in–flight report
- the FMS Post–flight report.

The ACARS MU transmits the following messages to the FMGCs either automatically or manually:

- Flight plan initialization
- Wind message
- Advisory message related to a ”request not transmitted to the ground”
- Request for a pre- or post–flight report

ACARS messages on the ECAM

The ACARS MU provides the FWC1 and 2 with data indicating four ACARS configurations. The corresponding indications on the memo zone of the upper ECAM display unit are:

- ACARS MSG: indicates reception of a ground message ,
- ACARS STBY: indicates loss of communication with the ground,
- VHF3 : VOICE: indicates that the VHF3 transceiver is not controlled by the ACARS,
- ACARS CALL: indicates reception of a voice communication demand with the ground.

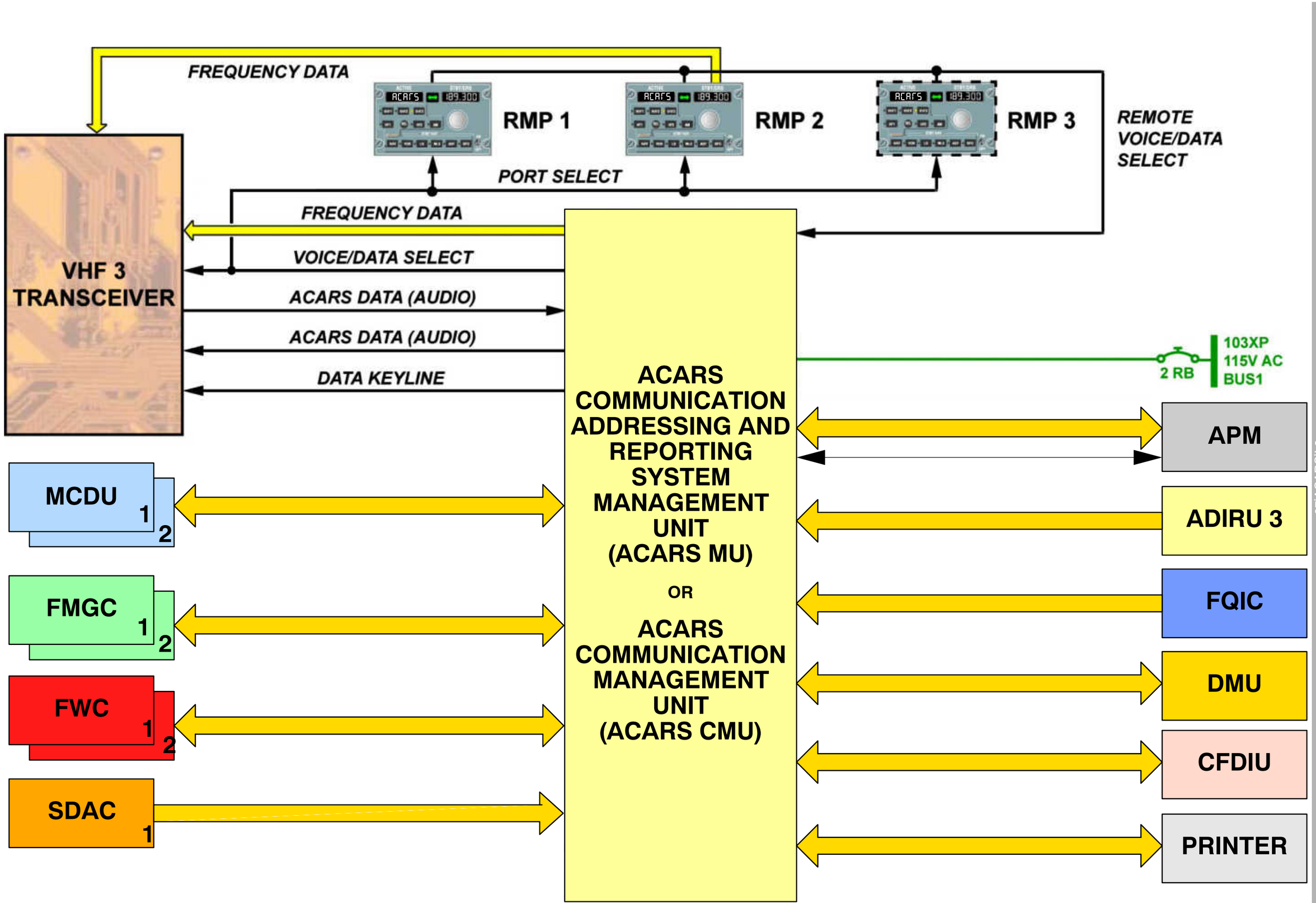


Figure 18 ACARS Overview

Reference to Figure 19 CIDS Overview (Non Enhanced Technology)

23–73 CIDS

CIDS DESCRIPTION (NON ENHANCED TECHNOLOGY)

General

The CIDS is used to operate, control, monitor and test various cabin functions. The functions are managed by CIDS dependent on the configuration of the aircraft and the CIDS software.

The basic CIDS manages these cabin functions:

- the Passenger Address (PA),
- the Cabin and flight crew interphone,
- the Passenger Call system,
- the Passenger lighted signs,
- the General illumination,
- the Lavatory smoke cabin warnings,
- the Service interphone,
- the testing of the emergency lighting equipment.

OPTIONS:

- *the temperature indication of cabin compartment zones,*
- *the boarding music and pre–recorded announcements,*
- *the passenger entertainment system,*
- *the escape slide bottle pressure monitoring,*
- *the door bottle pressure indication,*

CIDS Components

The main components of the CIDS are:

- two CIDS directors with On–board Replaceable Modules (OBRM) inside,
- up to 32 Decoder Encoder Units (DEU) type A,
- up to 8 Decoder Encoder Units (DEU) type B,
- the cabin & attendant equipment cotroled by the DEUs,
- a Programming and Test Panel (PTP) equipped with the cabin assignment module (CAM),
- the Forward Attendant Panel (FAP),
- the Aft Attendant Panel (AAP),
- the Attendant Indicating Panels (AIP).

CIDS Interfaces

The CIDS Directors are connected to:

- the Audio Management Unit 1,
- the Cabin Pressure Controller 1 & 2,
- the PASS INFO relay 19WR,
- the Centralized Fault Display Interface Unit,
- the Cockpit door switch 310LG,
- the EVAC horn,
- the CTL PWR SPLY relay 8WL,
- the Flight Warning Computer 1 & 2,
- the Board–ann LT test & interfaces (1LP & 9LP),
- the Landing Gear Control & Interface Unit switches,
- the ENG Oil pressure warning system,
- the Service interphone ovrd switch and jack sockets,
- the Slats and Flaps Control Computer 1 & 2,
- the Smoke Detection Control Unit,
- the System Data Acquisition Aoncentrator 1 & 2

CIDS Function

The CIDS director is the central control and interface component of the CIDS.

The CIDS director does these functions:

- control of data bus lines,
- control of CIDS units,
- control of the system function of connected cabin systems,
- control of the cabin programming function,
- control of the test function,
- activation of emergency mode with minimum power consumption

Forward Attendant Panel (FAP)

The FAP is installed in the forward entrance area of the aircraft.

The FAPI performs these functions:

- indictaion of the FWD & AFT cabin temperature,
- control of the cabin illumination,
- control of the boarding music & prerecorded announcements
- control of miscellaneous items like water & waste quantity indication or LAV Smoke warning reset.

Decoder Encoder Units (DEU)

Two types of DEUs are used, type A and type B. The director transmits address coded data to all DEUs of one type, but only one DEU A responds.

The addressed DEU serves as an interface between the encoded bus data and the connected cabin systems and components.

Programming & Test Panel

The PTP is located at the FWD attendant station, behind a hinged access door next to the FAP.

For correct CIDS operation, the CAM must be installed inside the PTP.

The functions of the PTP are as follows:

- To program & change the CIDS properties and cabin layout & zoning information,
- monitoring & indication of CIDS failures
- to activate CIDS component tests

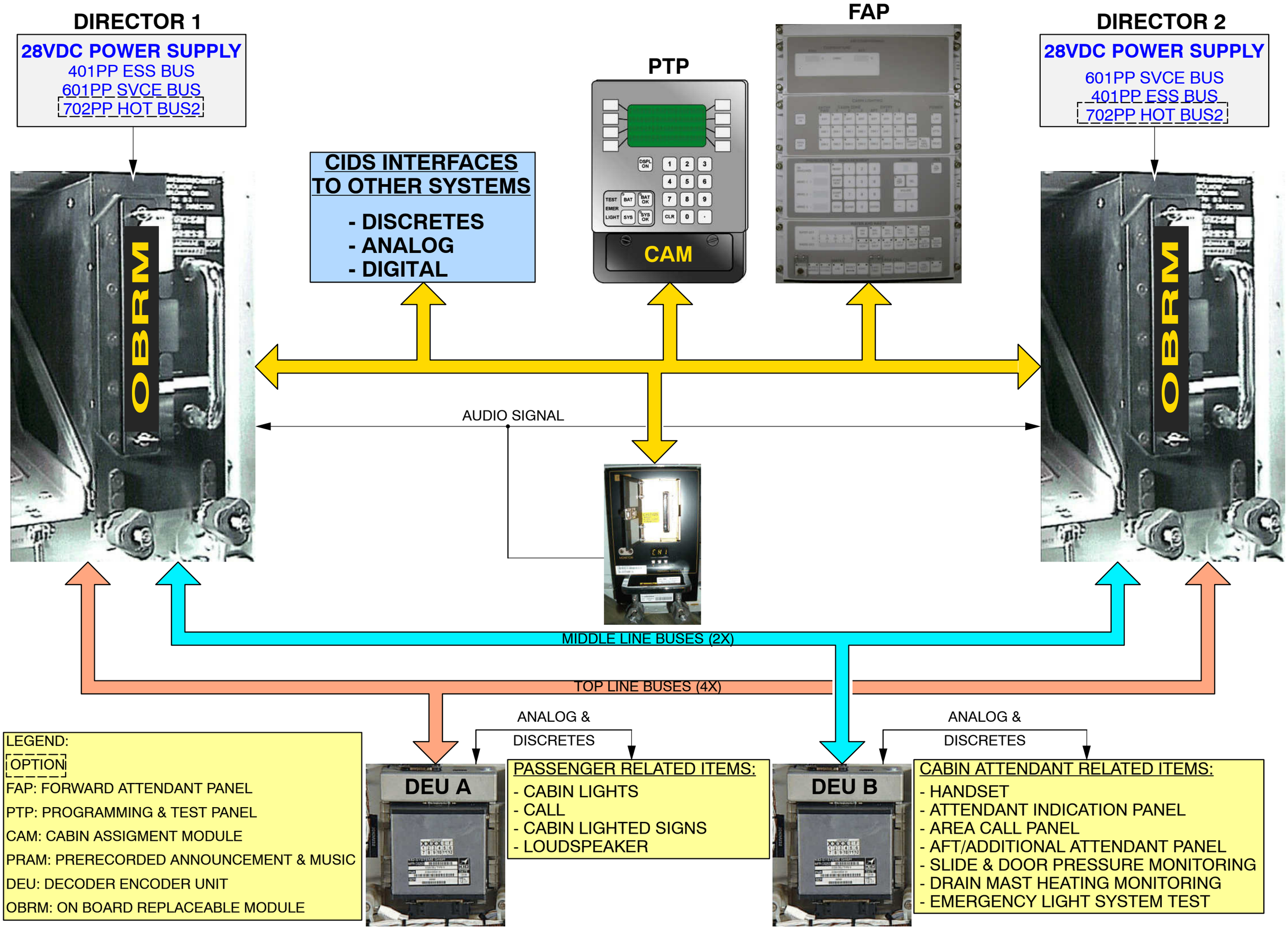


Figure 19 CIDS Overview (Non Enhanced Technology)

Reference to Figure 20 CIDS Overview (Enhanced Technology)

CIDS DESCRIPTION (ENHANCED TECHNOLOGY)

General

On the enhanced CIDS are several new main items:

- The Flight Attendant Panel replaces the old FAP, PTP & PRAM and is a touchscreen.
- PRAM, CAM & OBRM are now flashcards inserted in the new FAP.
- The Smoke Detection Function (SDF) replaces the old SDCU.
- The Vacuum System Controller Function (VSCF) replaces the VSC.

The CIDS consists of these components:

- two identical CIDS Directors,
- Decoder/Encoder Units (DEU) type A,
- Decoder/Encoder Units (DEU) type B,
- Passenger Interface and Supply Adapters (PISA),
- Stand–Alone Passenger Interface and Supply Adapters (StA PISA),
- Flight Attendant Panel (FAP) including the CAM, OBRM, PRAM,
- Additional Attendant Panels (AAP),
- Attendant Indication Panels (AIP),
- Area Call Panels (ACP),
- Handsets,
- Passenger Service Units (PSU) including the loudspeakers, passenger call/reset pushbuttons, NS & FSB signs & the passenger call light

The CIDS directors have a data bus interface to the:

- DEU type A,
- DEU type B,
- Flight Attendant Panel,
- System Data Acquisition Concentrator 1+2,
- Flight Warning Computer 1+2,
- Centralized Fault Display System,
- Air Conditioning System Controller (ACSC).

The CIDS directors have a discrete interface to the:

- Slat Flap Control Computer 1+2
- Landing Gear Control and Interface Unit 1+2
- Cabin Pressure Controller 1+2 (CPC),
- Cabin pressure relay,
- Indicator Light Control Box (ILCB),
- Cockpit call panel,
- Service interphone override switch,
- Exit signs relay,
- Cockpit door switch,
- System Data Acquisition Concentrator 1+2,
- Flight Warning Computer 1+2,
- Top lines cut off relay,
- Engine Interface Unit,
- Motor start relay vacuum generator,
- NS/FSB panel.

The CIDS directors have audio and discrete interfaces to:

- Audio Management Unit
- Cockpit handset,
- Service interphone boomsets.

CIDS Function

The CIDS provides these system functions:
(enhanced functions in **bold** font)

- Passenger Address System (PA),
- Cabin Interphone System,
- Service Interphone System,
- Prerecorded Announcement and Boarding Music (PRAM) System,
- Passenger Lighted Signs,
- Passenger Call,
- Cabin Illumination,
- Reading Lights,
- **Lavatory Smoke Detection,**
- **Cargo Smoke Detection,**
- **Cargo Fire Extinguisher Monitoring,**
- Cabin Ready Signaling,
- **Cabin temperature adjustment,**
- Potable Water Indication,
- Potable Water Indication & Preselection,
- Waste Indication,
- **Vacuum System Control Function (VSCF),**
- Doors and Escape Slides Pressure Monitoring,
- Emergency Power Supply Unit testing,
- Drain Mast Control Unit monitoring & testing,
- **CFDS Emulation on FAP.**

Flight Attendant Panel (FAP)

The FAP is used to control different cabin systems and the CIDS, to indicate the status of different systems and for on–board changes of the CAM data (e.g. cabin layout and no smoking zones).

It can also be used for emulation of CFDS reports when the aircraft is in the ground status.

Decoder Encoder Units (DEU)

The enhanced DEU type A have now digital interfaces with the enhanced ballast units and the PISAs.

The enhanced DEU type B have now additional discrete & analog interfaces to the:

- Flush Control Unit (FCU),
- Liquid Level Transmitter & Sensor (LLT/LLS),
- Water and waste service panel,
- Vacuum generator, Fan phase off & Vacuum power control relay,
- Water preselection unit.

DIRECTOR 1

28VDC POWER SUPPLY
401PP ESS BUS
601PP SVCE BUS
[702PP HOT BUS2]

DIRECTOR 2

28VDC POWER SUPPLY
601PP SVCE BUS
401PP ESS BUS
[702PP HOT BUS2]

FLIGHT ATTENDANT PANEL

PRAM **CAM** **OBRM**

CIDS INTERFACES TO OTHER SYSTEMS

- **DISCRETES**
- **ANALOG**
- **DIGITAL**

MIDDLE LINE BUSES (2X)

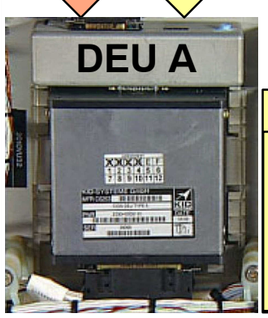
TOP LINE BUSES *(2X)*

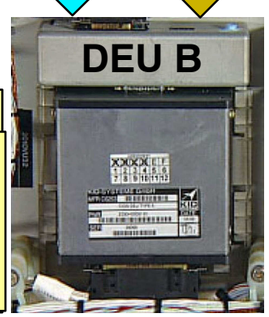
BALLAST UNIT

MAX *8*

MAX *6*

PISA





PSU

PASSENGER RELATED ITEMS:
- READING LIGHTS
- ATTND CALL,
- CABIN LIGHTED SIGNS
- LOUDSPEAKER

DIGITAL, ANALOG & DISCRETES

CABIN ATTENDANT RELATED ITEMS:
- HANDSET
- ATTENDANT INDICATION PANEL
- AREA CALL PANEL
- AFT/ADDITIONAL ATTENDANT PANEL
- SLIDE & DOOR PRESSURE MONITORING
- DRAIN MAST HEATING MONITORING
- EMERGENCY LIGHT SYSTEM TEST
- *LAVATORY SMOKE DETECTION*
- *FLUSH CONTROL UNIT (FCU)*
- *LIQUID LEVEL SENSOER (WASTE TANK)*
- *LIQUID LEVEL TRANSMITTER (WT)*

LEGEND:
[OPTION]
CURSIVE TEXT: NEW FUNCTION OR COMPONENT
CAM: CABIN ASSIGMENT MODULE
PRAM: PRERECORDED ANNOUNCEMENT & MUSIC
OBRM: ON BOARD REPLACEABLE MODULE
DEU: DECODER ENCODER UNIT
PISA: PAX INTERFACE SUPPLY ADAPTER
PSU: PAX SERVIRCE UNIT

Figure 20 CIDS Overview (Enhanced Technology)

Reference to Figure 21 Cockpit Voice Recorder System Overview

23–71 COCKPIT VOICE RECORDER (CVR)

SYSTEM DESCRIPTION

General

The Solid State Cockpit Voice Recorder (SSCVR) is designed to record crew conversations and communications into Crash Survivable Memory Unit (CSMU) in flight and on ground.

The recorder is a four–track system and all tracks are recorded simultaneously.

The SSCVR provides storage for 2 hours of consecutive recording for each of the four audio input channels.

When the CSMU is fully recorded, the system progressively erases recordings made in the previous 2 hours and simultaneously records new information. Only information recorded in the last 2 hours of operation is retained. The recorded information can be intentionally erased when the aircraft is on the ground with the parking brake on, locked and electrically powered. Bulk erasure is also possible during manual operation of the system.

CVR Power Supply & Components

The CVR is recording when it is powered by the AC ES SHED BUS. The power interlock logic energizes the CVR in the following situations:

- first 5 minutes after aircraft electrical system power up,
- one engine is running,
- the aircraft is in flight condition regardless if engine is running or not,
- 5 minutes after last engine shut down on ground,
- when the springloaded RCDR GND CTRL P/B is pressed on the overhead panel in the cockpit.

The cockpit voice recorder system consists of:

- the Solid State Cockpit Voice Recorder 1RK
- the remote CVR microphone 16RK for monitoring direct conversations between crew members and aural warnings in the cockpit.
- an amplifier 18RK which amplifies the microphone signal,
- Circuit breaker 2RK supplying the CVR with 115VAC ESS SHED BUS power,
- RCDR/GND CTL pushbutton switch 11TU providing manual control of the CVR on ground,
- RCDR/CVR ERASE pushbutton switch 3RK which provides complete erasure of the recorder data from the memory block unit.
- RCDR/CVR TEST pushbutton switch 5RK which provides recorder test,
- CVR/HEAD SET jack 22RK connected in parallel with the socket on the CVR,
- the relays 6RK, 8 RK, 10RK, 14RK, 20RK, 12TU & 13TU

CVR Description

The SSCVR is located in the aft section of the aircraft.

An Underwater Locator Beacon (ULB) is mounted on a bracket attached to the recorder. The ULB is a battery–operated device which radiates a pulsed acoustic signal into the surrounding water upon activation of its water–sensitive switch. It consists of a self–contained battery, an electronic module and a transducer.

An Automatic Test Equipment connector provides an interface for a portable device.

Inside the recorder the CVR consists of three Shop Replaceable Units not including the basic system chassis, an interface and Control board, a crash survivable memory unit, and a power supply.

The interface and control board is a single circuit card which controls all states and modes of the system performing the record, erase, and test functions of the system.

For erasure the parking brake and the landing gear relays must be closed, and the ERASE pushbutton switch in the cockpit must be pushed for a minimun of 2 seconds and released.

Test

For testing the CVR must be energized.

Two test procedures are possible:

- an Operational Test of the CVR and the CVR Channel Recording via the CVR/HEADSET JACK 22RK on the maintenance panel,
- a Test via the RCDR/CVR TEST P/B.

For testing via the Test P/B parking brake and the landing gear relays must be closed. The operational test via the Headset Jack is always possible when the CVR is energized.

NOTE: The CVR has no connection to the CFDIU and can not be tested via the MCDU.

801XP
115VAC
ESS
SHED
2RK

Power Interlock Logic

16RK
CVR MIC

Preamplifier
Attenuator
18RK CVR MIC Amplifier

801PP
28VDC
ESS
SHED

102GG
PRK BRK ELEC
CTRL VALVE

12GB Relay
LGCIU 2

R&L Gear
Compressed

RCDR
CVR ERASE
3RK
CVR Erase
P/BSW

14RK Relay
Parking BRK CTLD

CVR
HEADSET
22RK
CVR/Head Set Jack

VERSION
WXR
PWS Warning

7WW CAPT
Loudspeaker

Audio
Mixing
Box
15WW

TCAS

8WW F/O
Loudspeaker

CVR TEST
5RK
CVR Test

20RK Relay
CVR Test

801PP
28VDC
ESS
SHED

Audio
Management
Unit
1RN

CAPT
F/O
CM3

Power Supply 115VAC
CVR Operates, when
powered.

Power Supply (18VDC)

Channel 4

A/D
Transformer

Erase Out

Bulk
Erase

Erase In

CSMU

Digital
Mixer

CPU

Audio Monitor
& D/A Output
Transformer

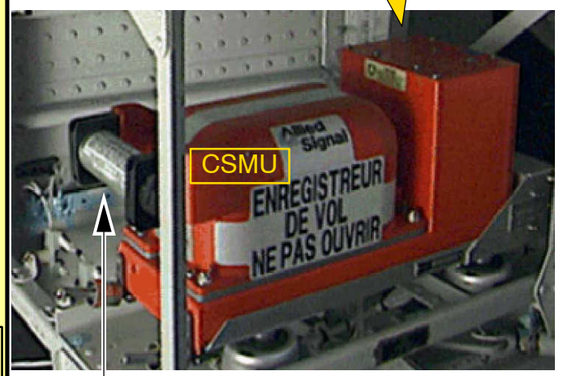
Test Circuit

A/D
Transformer

Channel 1
Channel 2
Channel 3

1RK Cockpit
Voice Recorder

CVR Location



Underwater Locator Beacon

Figure 21 Cockpit Voice Recorder System Overview