

INTERCOMMUNICATION SYSTEM SP-1450

The SP-1450 system is centralized, digitally controlled audio management system which provides:

- Control, amplification and interfacing for all external communications on the aircraft
- A sophisticated and flexible intercom network

The SP-1450 system installation utilizes fiber optics and appropriate wiring layout to reduce crosstalk and EMI to a minimum in order to satisfy the TEMPEST requirement.

Control is effected via MIL-STD-1553 B digital data links or dedicated Remote Control Panel to perform the switching function and via asynchronous serial bus between User's Unit and Central Switching Unit.

The system's configuration includes:

- Switching UNIT SP-1451
- Headset Interface Unit (H.I.U.) SP-1452
- Main Control Panel (M.C.P.) SP-1453
- Secondary User Unit (S.U.U.) SP-1454



- Direct Voice Output/Warning Tone Generator (DVO/WTG) SP-2049

A single Switching Unit support up to 8 Main Users, 4 Secondary Users provides interfacing and control for up to:

- 8 Transmitter-Receiver units
- 1 ANDVT Crypto Device Narrow Band
- 12 Nav/Mission Aids
- 4 Telebriefing/Ground Support Channels
- 2 Crypto Device for Wide Band

- 1 Link-11 Modem (for HF and V/UHF)
- 1 Sonar stereo

Different configurations for different aircraft types utilize common units and modules. Software controlled function selection and amplification ensure maximum operating flexibility adaptability and growth capability. Improved reliability and maintainability is achieved by continuous BIT (Built-in-Test) routines, and dual separated power supplies.

Basic features

- Tested to TEMPEST requirements according to AMSG 720/784
- Airborne applications in very hostile EMI/EMC environments
- Internal microprocessor control for monitoring and supervision of system's operation
- Microprocessor controlled BITE, with automatic identification of the faulty Line Replaceable Unit (LRU)
- Modular construction
- Extremely efficient thermal design and low power consumption
- Complete remote controlled by external computer (VIA MIL-STD-1553 B)
- Fully compliance with MIL-E-5400.



Technical description

The SP-1450 Inter-communication System (ICS) provides management and control of the external and internal communications onboard various aircraft.

The ICS functions allow:

- Use of any radio on any type of service (LINK-11 data, crypto/plain voice)
- Unlimited selection from the main user units, of any external/internal communication channel plus



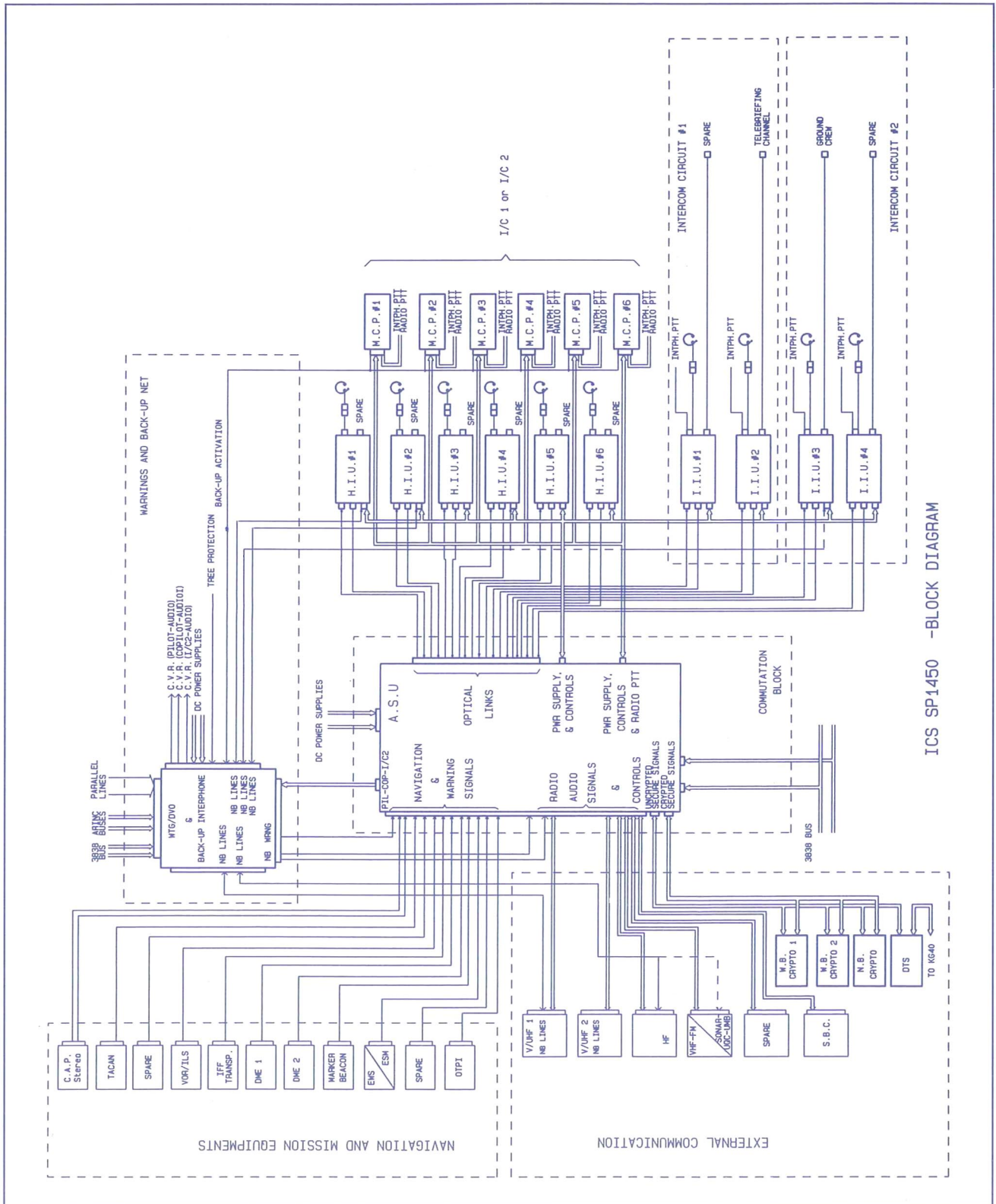
NAV-AIDS/SONAR/ESM, with facilities for simultaneous reception of all channels.

- Selection from the secondary user units of the internal communication channels, with reception capability of the radio channels.
- The system also provides speech and tone warnings to

minimise pilot's workload and enhance flight safety.

- Relay function between HF and V/UHF channels.
- CASS/DICASS capability.
- Emergency functionalities in Back Up Intercom-Mode

Note: basic configuration with 6 Main Users and 6 T/R Radio



INTERCOMMUNICATION SYSTEM SP-1450

Technical characteristics

GENERAL

- **Asynchronous Serial Bus:**

Data Format

11 bit/word

Data Rate

9600 bit/sec.

Rise time

less than 10 m sec.

Level

0/5 volt

Impedence

100 Ω balanced

- **Audio Interface:**

Bandwidth

300 to 3500 Hz

Input Level (microphone)

250 m V/150 Ω

100 μ V/5 Ω

Output Level (headphone)

200 m W \pm 1.5 dB

into 8 Ω / 600 Ω

Primary Power

28 Vdc as per

MIL-STD-704B

Power Consumption

160 watt

ENVIRONMENTAL

- **Operating Temperature:**

-40 $^{\circ}$ C to 71 $^{\circ}$ C

- **Storage Temperature:**

-55 $^{\circ}$ C to 90 $^{\circ}$ C

- **Humidity:**

up to 95%

- **Altitude:**

70.000 feet

- **EMC:**

as per MIL-STD-461

and MIL-STD-462

- **TEMPEST:**

as per AMMSG-720 B

and AMMSG 784

PHYSICAL

- **Dimension (mm)/Weight (Kg)**

NH 90

M.C.P. 146W x 95H x 90D /

1 Kg

H.U. 150W x 60H x 90D /

0,7 Kg

H.I.U. 150W x 60H x 90D /

0,6 Kg

DVO/WTG ARINC 600:

2 MCU / 2,2 Kg

A.S.U. 1/2 ATR Short /

8,5 Kg.

EH 101

M.P.C. 146W x 133H x 90D /

1 Kg

S.U.U. 150W x 60H x 90D /

0,7 Kg

H.I.U. 150W x 60H x 90D /

0,6 Kg

B.U.I.U. 150W x 60H x 90D /

0,8 Kg

Sw.U. 1/2 ATR Short /

8,5 Kg.

INTERFACES

- MIL-STD-1553 B
or Remote Control Panel

RELIABILITY AND MAINTAINABILITY

- **MTBF**
(as per MIL-HDBK-217 D):
1400 hours
- **MTTR:**
15 minutes