

ICS SPECIFICATIONS

PHYSICAL

Size: (width with mounting flanges x depth x height).
Crew Station – 5.75" x 5.78" x 7.875".
Emergency ICS - 2" x 3.8" x 2.58"

Weight:

Crew Station - 5.75 lbs.
Emergency ICS - 1.35 lbs.

Power Dissipation:

Nominal 19 watts @ 28 Vdc per Crew Position.

Input Power:

28 Vdc per MIL-STD-704A Notice 3 Category B.

MTBF:

Crew Station 15,074 hours
Emergency ICS 107,342 hours

MTTR:

System - < 8 minutes, BIT provides 95% isolation to single WRA.

Cooling:

Convection/Conduction.

Number of WRA Types:

One for ICS and one for Emergency ICS, there are no junction boxes or other active circuitry.

PERFORMANCE

System Capacity:

Up to 100 narrow band (4.0 kHz) channels.

Frequency Response:

(1 kHz Reference) ±1 dB from 200 to 4000 Hz.

Microphone Input:

0 to 700 mV (Trms) @ 100 ohms.

Headset Output:

1 W (Trms) nominal into 300 ohms for each earpiece. Other impedances can be accommodated.

Environmental

General: per MIL-E-5400 Class I.

Altitude: to 35,000 feet.

Temperature: -20°C to +55 C continuous.

Humidity: up to 95% relative humidity.

Tempest

Level 1 of NSTISSAM TEMPEST/1-92.

EMI

Per MIL-STD 461B Class A.1.b.

Shock/Vibration

Vibration meets MIL-STD-810E, Method 514.4, Categories 4 and 10

Shock meets MIL-STD-810E, Method 516.4, Procedures I and V (Functional & Crash)

FOR MORE
INFORMATION CONTACT:



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DIGITAL INTER-COMMUNICATIONS SYSTEMS (ICS)

**DEFINING AIRBORNE COMMUNICATIONS FOR THE
TWENTY-FIRST CENTURY**



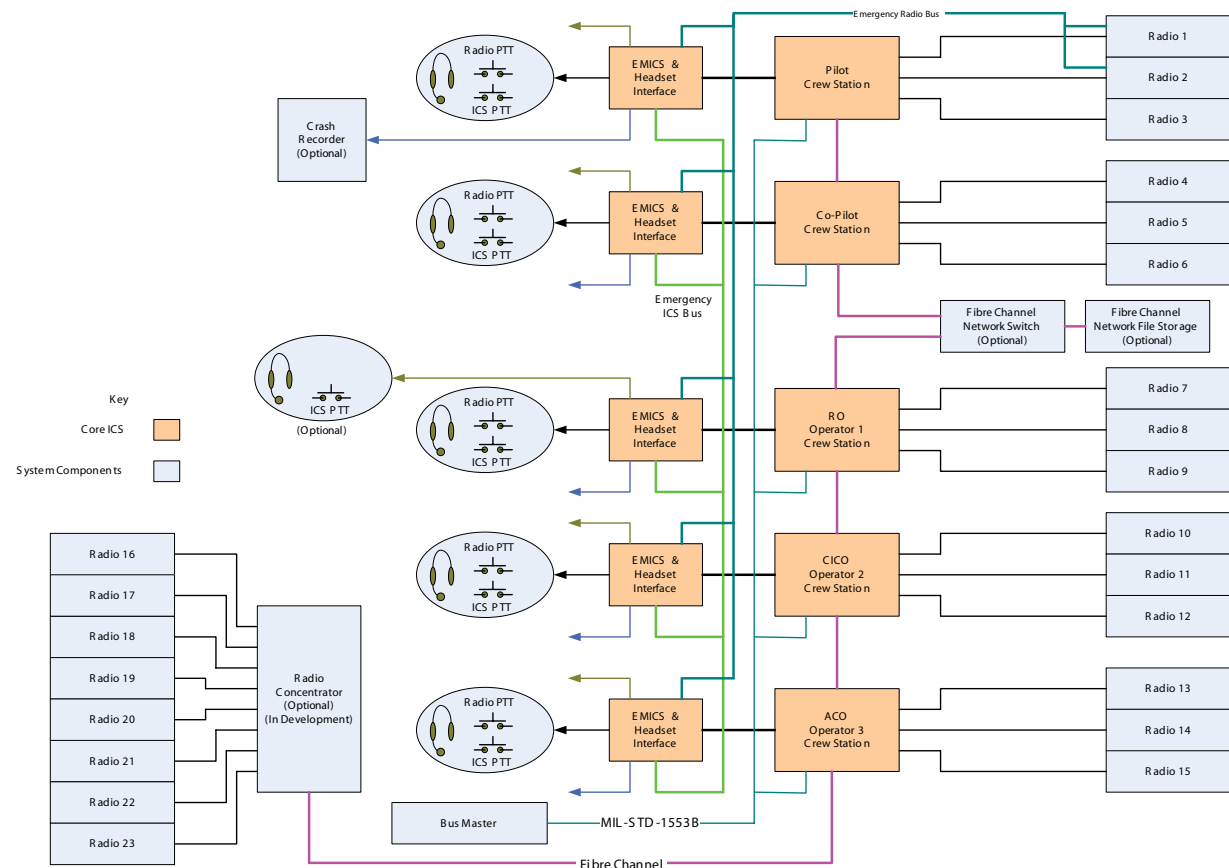
MATHTECH, Inc.

DIGITAL INTER-COMMUNICATIONS SYSTEM (ICS)

The digital inter-communications system was developed for airborne use in multi-place aircraft, but can be used on a variety of platforms where connections to many radios are necessary. This small, lightweight system exhibits increased performance, versatility, availability, reliability, and supportability at a lower ownership cost than any comparable ICS in the marketplace today. Currently being provided under contract to Northrop Grumman Corporation for the new E-2D aircraft, the ICS is the perfect system for both new construction and retrofit applications.

ICS Design Features

- Customizable Front Panel
- No Single Point of Failure Mode
- Improved EMI/TEMPEST Performance
- Open Architecture Fibre Channel data Bus
- Low Weight and Size
- Low Power Consumption Convection/Conduction Cooled
- High Reliability
- Continuous Built-in Test
- Firmware Reconfigurable
- Supports Mission Planning & Debriefing



ICS Features

Two WRA types, a Crew Station and an Emergency ICS, are connected to provide an operator with access to all internal and external communications assets. The Crew Station provides the operator with a control panel to select or monitor audio sources for radios, NAVAIDS, and the intercom network. Individual setup for each audio asset is provided through multi function switches and controls or through a network download from a mission planner. Individual and master volume controls, VOX sensitivity control, binaural sound control, and the ICS Block audio exclusion feature allow the operator to customize his own audio environment. Multiple combinations of radio relay and simulcast nets can be created from the front panel at any time.

System Features

- Up to 100 Channels
- Master and Individual Volume Control for Each Channel
- Radio Simulcast
- Radio Relay
- Optional Crypto and Modem Switching
- Simultaneous Red/Black Transmission
- VOX/Cold Microphone/PTT
- Binaural Sound
- MIL-STD 1553B data Bus Interface
- Dual Headset Interface
- Multiple Headset/Microphone/Oxygen Mask Compatibility
- Redundant Architecture – No Master Controller
- Manual Switch-over to Emergency Radios
- Automatic Switch-over to Emergency ICS upon Crew Station failure
- Periodic and Initiated BIT
- Audio Record and Playback



Optional Features (In Development)

- Optional Liquid Crystal Display
- Optional Radio Frequency Control
- Optional Synthetic Speech Cues
- Alternate Panel Designs
- Wireless Headset Interface

The Crew Station provides the connection between all communications assets and the ICS data bus. Each Crew Station has the capacity to provide connectivity for up to three transceivers or receive-only channels such as NAVAIID warning tone generators. An optional Radio Concentrator can be used to provide connections to additional radios.

The basic ICS consists of five identical Crew Station WRAs and five identical Emergency ICS WRAs. Each Crew Station/Emergency ICS pair is referred to as a Crew Position and performs autonomously or as connected through a Fibre Channel bus to provide several modes of system operation.