

MULTIFUNCTION WORK STATIONS FOR SUBMARINE AND SURFACE COMBATANT APPLICATIONS



**RUGGEDIZED OR MIL-SPEC,
FULLY QUALIFIED
PRODUCTION UNITS**

MULTIFUNCTION WORK STATION

- VME CHASSIS
- HIGH PERFORMANCE (1024 X 1280 RESOLUTION GRAPHICS)
- VIDEO (TV/INFRARED)
- RADAR SCAN CONVERTER
- VARIOUS CPU TYPES AVAILABLE
- SOFTWARE
 - REAL TIME OPERATING SYSTEM
 - ADA ENVIRONMENT

INTERFACES

- OPERATOR INTERACTIVE DISPLAY SURFACES
- OPTIMIZED HUMAN/COMPUTER INTERFACE, (TOUCH INTERACTIVE CRT AND SWITCH MATRIX)
- FDDI, ETHERNET AND NTDS COMPATIBLE

APPLICATIONS

- SENSOR DISPLAY AND CONTROL
- DATA FUSION/CORRELATION
- TARGET MOTION ANALYSIS
- WEAPONS CONTROL
- NAVIGATION TACTICAL PLANNING

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INTRODUCTION

Librascope's MultiFunction Work Station (MFWS) is a ruggedized universal operator display console and work station that can be configured for Surface Ship, Patrol boat and submarine as well as Maritime Patrol Aircraft applications. The MFWS was developed for international Navies and for coproduction in the customer country.

The MFWS consists of one or two high resolution color monitors, a desk set for operator entry, and an electronics cabinet incorporating CPU, memory, graphics engine, power supplies, and any optional special purpose interfaces. The desk set houses the programmable electroluminescent panel with touch overlay, a numeric keypad, a trackball and four shaft encoders.

MFWS OPEN ARCHITECTURE

The MFWS is designed to operate either as a component of a distributed processing system or as a dedicated terminal of a central system. The primary interface is a single Ethernet connection using TCP/IP protocol. Because of the flexible open architecture, any other specific interface such as a NTDS, RS-422, MIL-STD-1553B or FDDI can be provided.

The MFWS employs an open VME backplane architecture which allows it to be easily configured to customer applications. This allows for customer requirements to be met at minimum cost and provides for easy future growth and expansion.

A typical configuration, shown in the accompanying figure, illustrates the flexibility of the architecture. The minimal configuration consists of an Ethernet interface, a single CPU, graphics engine, and monitor. This allows the work station to act as a terminal on a central CPU system. Adding the application processor and a

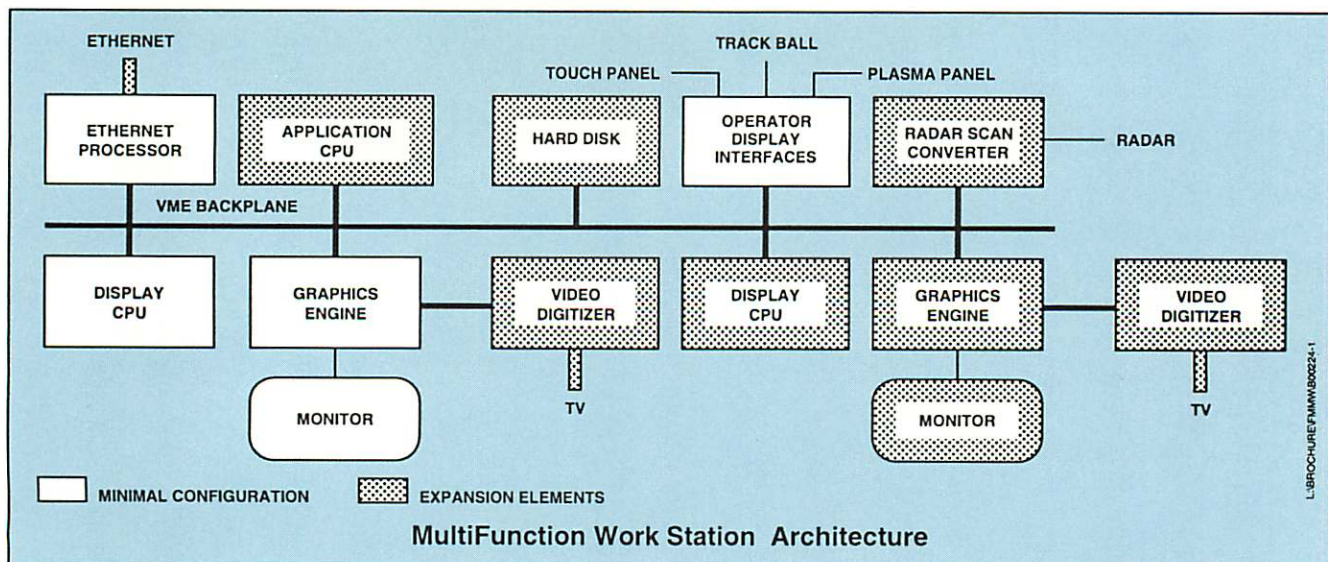
mass storage device converts it to a full work station capable of running the various applications programs internally.

Depending on the specific platform requirements, other display interfaces can be added. TV video from a gun camera or periscope, radar from a search radar or fire control radar, and others require simply adding a single card to the VME backplane.

The MFWS design provides all of the real-time processing and high speed color graphics resources required for tactical system operations including navigation, sensor control, communications, command and weapon control.

MILITARY HARDWARE

The MFWS modular design allows customers to choose equipment configurations based on commercial components or equipment constructed with full MIL-STD components. If required, militarized hardware equivalents can be supplied which qualify the MFWS for surface ship and submarine military environments. The MFWS was designed under the guidelines of MIL-E-16400 and operates continuously and reliably in the ambient air temperature range of 0 to 50° C and at atmospheric pressure ranges of 750 to 1250 millibars of mercury. It also meets the shock requirements of MIL-STD-901C, the vibration requirements of MIL-STD-167-1 in the frequency range of 4 to 33 Hz, the structureborne and airborne noise requirements of MIL-STD-740, and the electromagnetic interference control requirements of MIL-STD-461B. The MFWS is available in both water and air cooled versions, has a Mean Time Between Failures (MTBF) in excess of 750 hours, and due to built-in performance monitoring and fault localization, a Mean Time To Repair (MTTR) of less than 30 minutes.



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