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AIRCRAFT VIDEO/VGA DISPLAYS

MONA-2200-01

9" HIGH RESOLUTION CRT DISPLAY WITH IMAGE ENHANCEMENT, NVG & SOFTKEY OPTIONS



The MONA-2200-01 Video Monitor incorporates outstanding reliability and superb picture quality essential in demanding airborne surveillance operations. The MONA-2200-01 is a picture evaluation monitor incorporating an HR (High Resolution) Trinitron® CRT that provides an excellent centre resolution of 450 TV lines. It is equipped with a component and composite video input facility and can also accept both 4:3 and 16:9 aspect ratio signals.

FEATURES INCLUDE

- Very high resolution display ideal for demanding FLIR/ Thermal Imaging applications airborne reliability
- Optional VGA interface to enable both Video & VGA signals to be displayed on separate channels
- Optional Video enhancement module- NVG filter available
- Optional soft keys for control of other on-board equipment

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Stable Colour Reproduction

Black level stability is a very significant parameter in professional monitoring and when used with FLIR and thermal imaging cameras. To achieve this stability, these monitors have a beam current feedback circuit. This stabilizes the CRT drive by checking the cathode current at low-light signal levels. This effectively corrects black level drift, giving stable reproduction over a long period of time and compensating for changes in CRT characteristics.

Input Facilities

Component (Y/R-Y/B-Y or RGB) Input To maximize operational convenience and versatility, a component (Y/R-Y/B-Y or RGB) input is included. This enables the direct connection of equipment such as a Camera Control Unit (CCU) or a Betacam™ VTR. In addition, the use of component signals ensures that a high quality picture is available for picture evaluation.

Y/C Input

In addition to composite inputs, a Y/C input is also provided so that luminance/ chrominance video signals can be accepted. This minimizes cross colour/dot interference and realises high quality video pictures.

External Sync

These monitors can accept external sync signal for synchronization with other equipment. The external sync can be set so that it will automatically switch according to the input selected.

OTHER PRODUCTS

AIRCRAFT VIDEO/VGA DISPLAYS

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- » 6.5" Display
- » 8.4" Display
- » 9" CRT Display
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- » 12.1" Display
- » 15" Display
- » 18" Display
- » 20.1" Display

EMBEDDED PC SMART DISPLAYS

AIRCRAFT VIDEO RECORDERS

- » Hard Disk Digital Recorder
- » Compact Flash Recorder
- » SHVS Recorder

MOVING MAPS

DIFFERENTIAL GPS

- » Differential GPS (DGPS)
Standard & High
Performance System

VIDEO / RADAR CONVERTERS

- » RDR 1500 Radar
Converter
- » VGA To Video Converter
- » VGA To STANAG 3350 Converter

AIRCRAFT

INSTALLATION / BRACKETS

- » NVG Cockpit Equipment
Modifications
- » Camera Brackets &
Equipment Consoles

MICROWAVE LINKS / DATALINKS

- » Long Range Automated Steerable Tracking Datalink
System
- » Low Cost Short Range Omni-Direction System

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AIRCRAFT VIDEO/VGA DISPLAYS

AUTOMATIC VIDEO CONTRAST ENHANCEMENT (OPTION)

- Automatic contrast enhancement
- Real-time processing
- For monochrome and colour
- Composite video signals (CCIR/RS170)
- Very low noise
- Adjustable area of interest
- Eliminates haze and flare in long range observation.

The Video enhancement module optimises an incoming video signal for maximum image contrast. To optimise the performance for each application it is possible to select one of ten windows of interest for local contrast enhancement. The device auto selects according to 625 line CCIR or 525 line EIA standards, monochrome and colour video signals. The VIDEO ENHANCEMENT MODULE automatically produces brilliant and crisp images from virtually any video signal. Demanding diagnostic, process and defence imaging requires video images of the highest possible quality. Some Surveillance cameras do not perform well when operating under low contrast conditions. The Video contrast enhancement module resolves this in a cost effective manner. The composite video output signal of the camera is processed by the module to give maximum contrast in a user defined observation window. The module has been designed for integration in high end imaging platforms.

The Application Range Includes: SURVEILLANCE

The VIDEO ENHANCEMENT MODULE eliminates the effects of a hazy atmosphere due to fog and/or sunlight scattering. Gives your camera system the capability to "see through fog". Even in diffused scenes where no details are visible a remarkably detailed picture is presented. In near dark applications the automatic gain control gives "an acceptable picture far beyond normal CCD sensitivity". The installation of the Video Enhancement Module in existing surveillance systems is simple and will significantly improve their performance.

DEFENCE IMAGING

Long range surveillance in helicopters, vehicles, border patrol and UAV's
Automatic contrast control in solid state and CRT cockpit displays
The module eliminates to a large extent effects of haze in the atmosphere

INDUSTRIAL IMAGE PROCESSING AND MEASUREMENT SYSTEMS

A camera system in combination with the VIDEO ENHANCEMENT MODULE mounted in the monitor can be used for a variety of vision applications like contactless measurement, character recognition and surface inspection. It is capable of displaying very low contrast images for instance "letters written with milk on a white sheet of paper". Image contrast levels of down to 2.5% will be displayed at 100 % contrast. The video bandwidth is such that it can achieve a horizontal resolution corresponding to more than 1000 TV-lines even operating at a maximum gain. This allows operation with high resolution video cameras.

ABOUT US

Skyquest Aviation supply industry leading video display, video distribution, video recording and video transmitting technology for airborne surveillance aircraft. Our customers typically include police, customs, coastguard, border patrol, military, search & rescue, MOD and government agencies. We also supply directly to OEM's and prime contractors worldwide, as well as most of the world's leading aircraft manufacturers.

AIRCRAFT LCD MULTI-FUNCTION MISSION DISPLAYS

Skyquest offer a wide range of multi-function rugged LCD displays for aircraft. Designed for use with FLIR and long range daylight video cameras, moving maps, computers and radar. Our current range extends from 4" through to 20.1" units.

RUGGED VIDEO RECORDERS FOR AIRCRAFT APPLICATIONS

Skyquest provide a solution for high quality video recording from airborne surveillance cameras, radar and moving maps in all video formats and to match even the most demanding applications.

RADAR & VIDEO CONVERTERS

Skyquest Aviation supply video converters to convert unconventional or specialist signals to more common types to enable standard displays to be used where previously custom designed units needed to be installed.



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AIRCRAFT VIDEO/VGA DISPLAYS

APPLICATION DATA

Video in/out RS170 and/or CCIR Composite, monochrome and colour

Gain control Automatic, 0 — +30 dB Speed, Level and Peak/average adjustable

Black level control Automatic, 0 — 100%

Exposure control Automatic, user definable window

Contour correction Selectable 'on'/'off'

TECHNICAL DATA (typical at 25°C)

Resolution > 1000 TVL

Bandwidth > 10 MHz. (- 6dB)

Signal to noise ratio > 60 dB (max. gain)

Gain Automatic, 0 - + 32 dB (max. gain can be limited to 4, 10 or 40 times)

Black level Automatic, 0 - - 100 %

Gamma =1

Synchronization Automatic

Video standard CCIR or EIA STD

Temperatures Operating

- 10 to + 40°C Storage

- 30 to + 80°C

Humidity 20 to 80%, non-condensing

ENHANCEMENT CONTROL FUNCTIONS

Contrast Enhancement on / off, window only / full image

Measurement window 10 predefined window positions and sizes

Edge Enhancement/Contour on / off (+ 5 dB at 3MHz.)

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Specifications

PHYSICAL CHARACTERISTICS

Mass: Approx. 8.2 kg (18 lb without batteries (No options fitted))
 Dimensions: Approx. 217 (W) x 217 (H) x 352.5 (D) mm (8 5/8 x 8 5/8 x 14 inches)

INPUTS VIDEO INPUT

LINEA/LINE:
 Composite Video: Loop-through BNC 1 Vp-p ±6 dB, sync negative, automatic 75 W? termination*2
 Y/C: Loop-through Mini DIN 4-pin Y (luminance):1 Vp-p ±6 dB, sync negative, automatic 75 W? termination*2 C (chrominance):NTSC: 0.286 Vp-p ±6 dB, automatic 75 W? termination*2 PAL: 0.3 Vp-p ±6 dB, automatic 75 W termination*2

LINE B:
 Composite Video: Loop-through BNC 1 Vp-p ±6 dB, sync negative, automatic 75 W?termination*2 RGB/COMPONENT (Y, R-Y, B-Y) BNC Red/R-Y: Non-composite: 0.7 Vp-p ±6 dB, sync positive, 75 W Sync on Green/Green/Y: Composite: 1.0 Vp-p ±6 dB, sync negative Non-composite: 0.7 Vp-p ±6 dB, sync positive, 75 W Blue/B-Y: Non-composite: 0.7 Vp-p ±6 dB, sync positive, 75 W

AUDIO INPUT

LINE A/LINE: Loop-through Phono/RCA, -5 dBu, high impedance
 LINEB: Loop-through Phono/RCA, -5 dBu, high impedance
 RGB/COMPONENT Phono/RCA, -5 dBu, high impedance
 (Y, R-Y, B-Y): Loop-through BNC 4.0 Vp-p ±6 dB, sync negative, automatic 75 W ?termination*
 External Sync: XLR 4-pin [Pin 1 0V (12V): Pin20V (28V): Pin 3 28V: Pin 4 12V]
 DC: Mini DIN 8-pin (with Tally)

Remote:
OUTPUTS
 Speaker Out: 0.5 W, monaural

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Specifications

Colour System:	PAL/SECAM/NTSC/NTSC4.
CRT Type:	MONA-2200-01 - 220 mm (9-inch) HR Trinitron Tube, viewable area 191 mm (8-inch) measured diagonally, 70° deflection, AG pitch 0.25 mm
Resolution:	MONA-2200-01 - Composite video: 450 TV lines at centre
Frequency Response:	6.0 MHz (-3 dB)
Aperture Correction:	-4.0 dB to 6.0 dB (at 3.0 MHz)
Synchronization:	AFC time constant 1.0 ms
Normal Scan:	6 % overscan
Underscan:	3 % underscan
H Linearity:	Less than 5 % (typical)
V Linearity:	Less than 5 % (typical)
Convergence:	Central: 0.43 mm (typical) Corner: 0.53 mm (typical)
Raster Size Stability	H: 1.0 %, V: 1.5 %
HV Regulation:	3.0 % (cut off to high light)
Colour Temperature:	D 65
Operating Temperature:	0 to 35° C (32 to 95° F)
Storage Temperature:	-10 to 40° C (14° F to 104° F)
Humidity:	0 to 90 % (no condensation)
Power Requirements	AC: 100 to 240 V, @ 0.7 to 0.4 A, 50/60 Hz DC: 28V @2A 12V @3.7 A
Power Consumption:	AC: 43 W DC: 40 W

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