LEONARDO ELECTRONICS

RW EP
RW ENHANCED PERFORMANCE GENERIC VEHICLE ARCHITECTURE (GVA) SMART-DISPLAYS

MODULAR MULTI-FUNCTION TACTICAL DISPLAYS

Based on the very latest Intel Core™ i7 CPU technology, the RW EP Range of high resolution, modular multi-function tactical smart displays provide leading edge computing and display capability for the most demanding ground vehicle environments.

The RW EP Range consists of HD displays in 4 different sizes – 10.4", 12.1", 15.0" and 17.3". All displays are direct sunlight readable and have a resistive touch-sensitive screen.

10.4"

12.1"

15.0"

17.3"
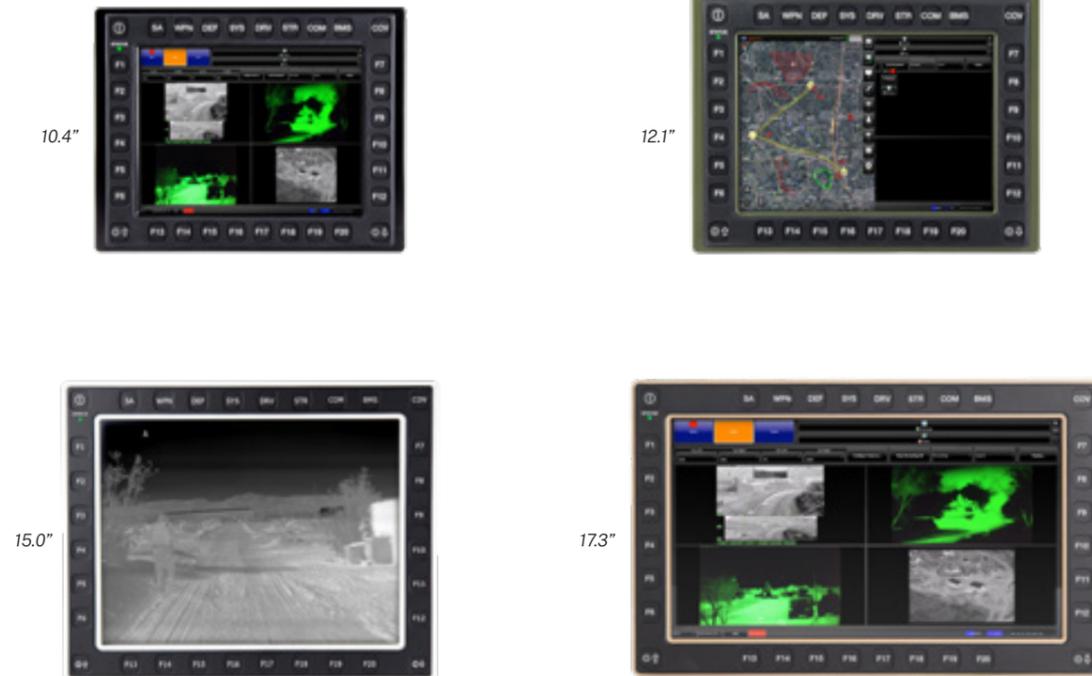
RUGGEDISED CONSTRUCTION

The RW EP Range is designed to withstand the harshest military environments including demanding 'on-gun' shock, water immersion and comply with the most stringent levels of EMC performance.

This makes them ideal for integration into potential sensitive electromagnetic installations.

Sunlight readable, resistive touch screen

Secure BIOS, Encrypted disk option & RAID 1

Tested and qualified for 'on-gun' shock

Operating temperature range -40°C to +71°C

EMC compliance ensures operation in hostile EMC environments

Immersible to a depth of 0.5m for 2hrs

VIDEO PROCESSING

The system provides low latency video inputs, video capture and DEF STAN 00-82 encoding and decoding.

DEF STAN 00-82 ENCODER

The company can supply software to provide DEF STAN 00-82 encoding on the RS170 video inputs in either PAL or NTSC formats. The software will allow up to 2 of the 4 available RS170 inputs to be encoded and streamed.

The encoder provides both native and thumbnail video streams to the DEF STAN 00-82 system in an uncompressed video format at the native RS170 video resolution (YCbCr encoded, 576i25). The encoder has been optimised to ensure low video latency across the workstation.

COMMON CPU/INPUT-OUTPUT

The RW EP Range shares a common CPU/Input-Output processor module which is integrated with either a 10.4", 12.1", 15.0" or 17.3" HD display.

This gives systems integrators the flexibility to mix and match smart displays while maintaining a common processing architecture. Due to modular nature of the design and the internal mini PCIe slots these displays are easily customised to meet specific customer requirements.

The MSATA slots can also be configured as mini PCIe positions, allowing extra facilities and interfaces. Existing examples are Firewire, additional Ethernet and Dual CAN bus. The displays are equipped with 30 programmable function keys which conform to the requirements of the GVA human-factors standard as defined by DEF-STAN 23-09.

MODULAR CONSTRUCTION

The processing module (rear) of the RW can be fitted to 10.4", 12.1", 15.0" and 17.3" displays giving the same funtionality and features across a variety of display sizes, resolutions and aspect ratios.

MID-LIFE UPGRADES

Modular Design simplifies mid-life upgrades and reduces through-life costs.

THROUGH-LIFE SUPPORT SERVICES

The company provide through-life support services by continually monitoring and reporting obsolescence issues. Extensive technical support services are also provided, ranging from calibration to a spares and repairs service.

Processing Module (rear)

10.4" 12.1" 15" 17.3"
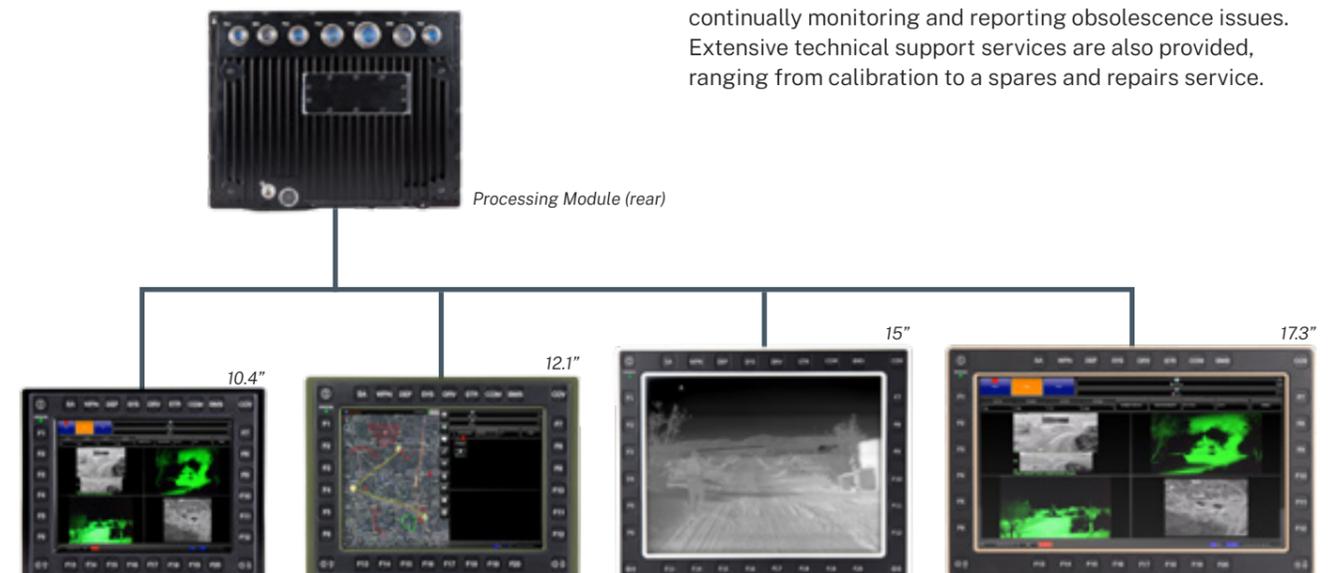
EXTREME SHOCK AND VIBRATION

The RW EP Range uses an innovative, patented internal vibration and shock system to provide shock protection to internal components. This system allows mounting without the need for additional, expensive anti-vibration kits.

The shock protection system has been qualified for tracked, wheeled, trailered and on-gun operation. On-gun applications are available with bespoke designed installation kits to suit the shock profile of particular guns.

STORAGE AND SECURITY

A variety of storage options are available. The display can accommodate up to 3x MSATA SSD devices and an option for a removable 1.8"/2.5" drive. RAID 1 is supported on the MSATA interfaces.

Secure and encrypted versions of the SSDs are available, whereby the security level of the data on the SSD is reduced by two levels when power is removed. It is also possible to provide secure or customised BIOS.

TECHNICAL SPECIFICATION

FEATURES	RW104 EP	RW121 EP	RW150 EP	RW173 EP HD
Display (sunlight readable & NVIS)	10.4" 1024 x 768	12.1" 1280 x 800	15.0" 1024 x 768	17.3" 1920 x 1080
Processors	Intel® Core™ i7			
Touch Screen	Resistive Touch Screen, option for resistive multi touch			
Bezel Keys	Def-Stan 23-09 GVA layout			
Storage	3x MSATA devices – 4x USB 3.0 devices – 1x removable 1.8"/2.5" device (Encryption options available) *Customer connector versions available			
STANDARD INTERFACES				
Ethernet	2x 1000Mbit LAN Interfaces			
USB	4x USB 2.0 Interfaces; 2x USB 3.0 Interfaces			
RS 232/422/423	1x RS232, 1x RS422/485, 2x RS232/422/485			
MilCAN	1x MilCAN interface			
Video In	Up to 4 high resolution Video Inputs – RS170, NTSC Video capture on all inputs			
Video Out	VGA			
Discrete I/O	4x IN and 4x OUT I/O lines			
Audio	PC line IN/OUT, MIC IN			
Power	28V DC to Mil-Stan1275D			
OPTIONAL INTERFACES				
CAN	Single or Dual CAN			
IEEE1394 (Firewire)	Single IEEE1394 (Firewire) Interface			
Audio	8W Speaker Drive			
Ethernet	2x 1000Mbit LAN Interfaces			
USB	2x USB 3.0 Interfaces			
GPS	Supports GPS, GLONASS, Galileo, and QZSS. NMEA, UBX and RTCM protocols			
MECHANICAL				
Dimensions (w x h x d)	294mm x 236mm x 78mm	349mm x 241mm x 84mm	380mm x 310mm x 100mm	405mm x 350mm x 100mm
Weight	4.75Kg	5.5Kg	7.5Kg	8Kg

ENVIRONMENTAL SPECIFICATION

REQUIREMENT	LEVELS
EMC	MIL-STD 461F to CE102, CS101, CS114, CS115, CS116, RE102 & RS103
Operational Shock	MIL-STD 810G Method 516.6 Proc I, 40g 11ms
Vibration	Tracked (hard mounted): DEF-STAN 00-35 Part 3 Iss 4, Chapter 2-01 Annex A, Figures A22 & A23 Wheeled
Temperature	Operating -40°C to +71°C MIL-STD-810G Method 502.5 Procedure II; MIL-STD-810G TABLE 501.5 Procedure II Storage -50°C to +71°C; MIL-STD-810G Method 501.5 Procedure I and 502.5 Procedure I
Humidity	MIL-STD-810G Method 507.5 Procedure II, +60°C & 95%Rh
Dust	MIL-STD-810G Method 510.5 Procedure I
Sand	MIL-STD-810G Method 510.5 Procedure II
Driving Rain	MIL-STD-810G Method 506.5 Procedure I
Temperature Shock	MIL-STD-810G Method 503.5 Proc I-D
Icing/Freezing Rain	MIL-STD-810G Method 521.3
Transit Shock	MIL-STD-810G Method 516.6 Proc IV
Solar Radiation	DEF STAN 00-35 Part 4 Iss 1
Explosive Atmosphere	MIL-STD-810G Method 511.5
Immersion	MIL-STD-810G Method 512.5, 0.5m for 2hrs
Altitude	MIL-STD 810G Method 500.5 for: Procedure I Storage at 40,000ft; Procedure II Operation at 15,000ft Procedure III Rapid Decompression from 8,000ft to 40,000ft Procedure I Storage at 40,000ft Procedure II Operation at 15,000ft; Procedure III Rapid Decompression from 8,000ft to 40,000ft
Crash Shock	MIL-STD-810G Method 516.6 Proc V, 75g 6ms
Salt Atmosphere	MIL-STD-810G Test 509.5
Mould Resistance	MIL-STD-810G Test 508.6
Chemical Contamination	MIL-STD-810G, Method 504.1, Table 504.1-I

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