MULTI-FUNCTION RUGGED TABLET (MRT104) II
HIGHLY INTEGRATED & EXTREMELY RUGGED COMPUTING TABLET

The MRT104 II Computing Tablet incorporates Intel's Core i7 processor technology, as well as removable 2.5" solid state drives and an extensive array of external interfaces.

The MRT104 II utilizes an ultra rugged 10.4" XGA LCD that is directly bonded to a resistive, multi-touch touchscreen that meets harsh vibration and shock vehicle environments. The tablet provides the user with the flexibility to operate the tablet computer in both direct sunlight and extremely low-light level applications.

The MRT104 II is ideally suited for both fixed and mobile applications. Quick disconnect connectors and mounting latches coupled with two Lithium-ion batteries that incorporate technology for extreme temperature operation, provides the user with on-the-go capability. Operation in the toughest military, Department of Homeland Security (DHS), and industrial environments has been validated through an intensive qualification program and fielded operations.

The MRT104 II is ideally suited to meet computing, sensor integration, and video processing needs in mobile and harsh environments where reliability is critical. The architecture supports hosting of applications as well as collection and streaming of sensor data. The MRT104 II can operate multiple operating systems and virtual machines concurrently to support diverse applications.

A Capability Upgrade Bay (CUB) allows the MRT104 II to be customized to support customer specific I/O demands for any application. Several standard CUB card options are available for additional Ethernet ports, 802.11 wireless, etc.*

The MRT104 II incorporates a Trusted Platform Module 2.0 (TPM) as part of a comprehensive Embedded Security architecture based on advanced Trusted Computing technologies. The Hardware Root of Trust built by the MRT104 II Embedded Hardware Security subsystem provides a unique and advanced foundation for Cybersecurity threat protection.

*Custom configuration and capabilities available

MRT104 II

I/O Expansion Dock
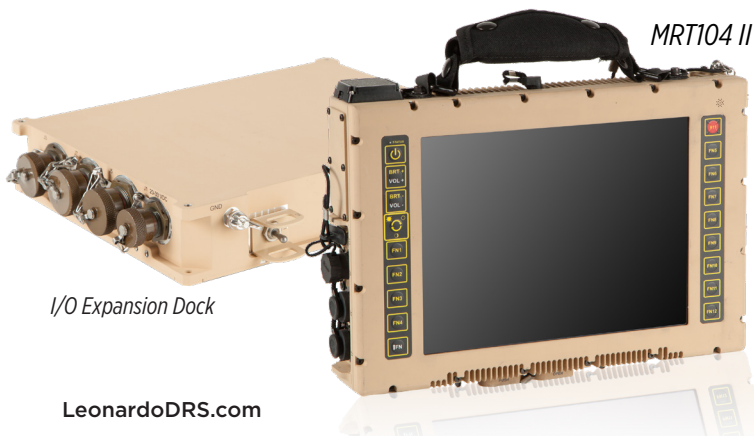
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MULTI-FUNCTION RUGGED TABLET (MRT104) II

MRT104 II CAPABILITIES

APPLICATION HOSTING

Dual core i7 processor allows the MRT104 II to run multiple concurrent native and virtual applications.

POSITION / TIME DISTRIBUTION

Commercial and Military embedded GPS card options enable internal use and external redistribution of Position, Time, TOD, and 1PPS information.

PORTABILITY

Quick disconnect features, internal batteries, low power draw, and small space claim are key features for maneuverability while in a mounted or dismounted configuration. The MRT104 II's capabilities are increased when utilized with the I/O Expansion Dock or DDUx II.

RUGGEDNESS

With a strong aluminum housing, industrial grade connectors, high performance batteries, and a robust display the MRT104 II can handle the harshest of environmental conditions.

VIDEO ACQUISITION / ENCODING / STREAMING / DVR

Video management software tools enable full management of the two RS-170 video inputs including capture, encoding, storing and sharing of this data over the network.

EMBEDDED HARDWARE SECURITY

The MRT104 II employs multiple embedded security options that provide substantial protection against modern hardware focused cybersecurity threats. Technologies such as a Secure BIOS architecture, per-computer unique BIOS password assignment, digitally signed BIOS updates, factory provisioned TPM, Measured Launch environment, and secure storage of customer pre-placed keys are just a few of the unique security options. Security Deployment tools enable fleet implementation of Secure Boot and Self-Encrypting Drive technologies to protect data integrity and prevent unauthorized boot media.

MRT104 II with Tablet Mount and I/O Expansion Dock

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FOR MISSION-CRITICAL APPLICATIONS IN THE MOST DEMANDING ENVIRONMENTS
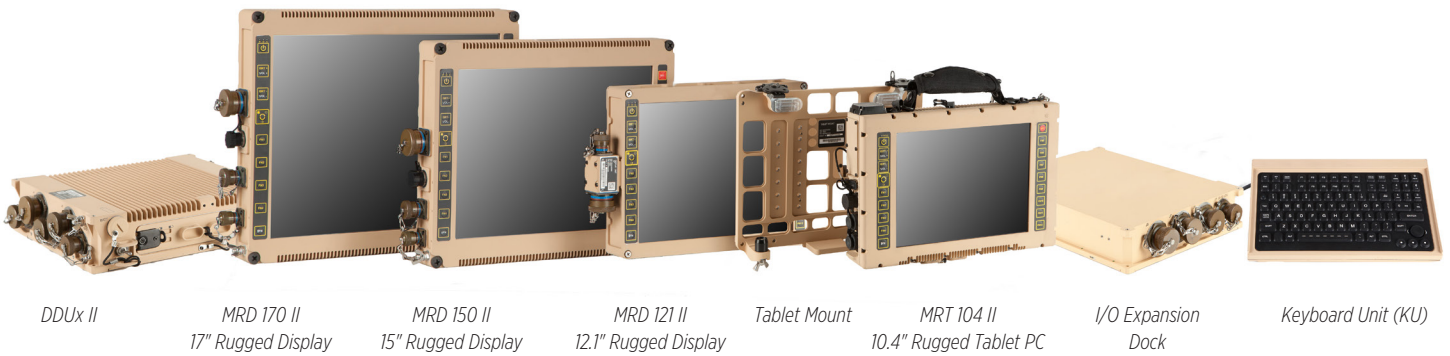

INDUSTRIAL

BORDER PATROL

MILITARY

SCALABLE FAMILY OF HARDWARE

The MRT104 II is the Tablet member of a scalable family of rugged computing solutions. It can be used in a standalone configuration or it can optionally be integrated with the I/O Expansion Dock, DDUx, or the 15"/17" Multi-Function Rugged Disply family members. All components are designed for interoperability, allowing flexible configurations to solve simple, complex, and evolutionary requirements.

| DDUx II | MRD 170 II | MRD 150 II | MRD 121 II | Tablet Mount | MRT 104 II | I/O Expansion | Keyboard Unit (KU) |
| | 17" Rugged Display | 15" Rugged Display | 12.1" Rugged Display | | 10.4" Rugged Tablet PC | Dock | |

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MULTI-FUNCTION RUGGED TABLET (MRT104) II

COMPUTING CAPABILITY

COMPONENT	DESCRIPTION
Processor	Intel Dual Core i7 @ 1.7 GHz (2.8 GHz Turbo)
Memory	16 GB Main DDR3 RAM, 4 MB Smart Cache
Storage	Two (2) removable Solid State SATA Drives (480 GB standard)
Hardware Security	TPM 2.0

SUPPORTED INTERFACES

INTERFACE	DESCRIPTION
Embedded GPS Options	Commercial GPS, SAASM GPS, MGUE
Ethernet Interfaces	Two (2) 10/100 at Tablet; One (1) Gigabit and Three (3) 10/100 at Dock
Video Interfaces	Two (2) Input RS-170 Ports, Low Latency; Simultaneous 2-Channel Video over IP Encoding and Distribution with Dual-Screen
Monitor Outputs	One (1) Display Port Output
Internal Display	10.4" XGA LCD
Serial Interfaces	Six (6) USB 2.0, One (1) USB 3.0/eSATAp, One (1) USB 2.0/eSATAp, One (1) RS-422, and One (1) RS-232 at Tablet; One (1) USB 2.0, One (1) RS-232, and Four (4) RS-422 at Dock
Expansion	Capability Upgrade Bay – Supporting modular add-on options cards for additional I/O and functionality such as 802.11 wireless, addition Ethernet ports, additional Serial ports, etc.
RFID	Embedded RFID Reader Option in Dock
Touch Screen	Pressure activated resistive multi-touch, touchscreen
Display Backlight	Adjustable backlight, 800 cd/m^2 high bright to 0.1 cd/m^2 for Night Vision Goggle (NVG) compatible operations
Audio	Integrated Speaker, Audio Out

PHYSICAL FEATURES

CHARACTERISTIC	MEASUREMENT
Weight	Tablet Weight: 9.9 lbs max, Dock Weight: 6 lbs, Tablet Mount Weight: 2.5 lbs
Dimensions	Tablet Dimensions: 13.23" x 9.3" x 2.4", Dock Dimensions: 13.5" x 9.8" x 2.1", Tablet Mount Dimensions: 11.6" x 10.96" x 2.1"
Input Power	20-33V, Compliant with MIL-STD-1275 (Reverse polarity protection, Operate through: 6V IES, 16V Cranking, 250V spike, etc.)
Power Consumption	40W (batteries charged)

ENVIRONMENTAL

COMPONENT	DESCRIPTION
Temperature	Operating, -46°C to +71°C; Storage, -51°C to +71°C
Altitude	Compliant with MIL-STD-810G, 500.5, Proc I, II, & III (15K ft – operational, 50K ft – storage, 8K to 40K ft - rapid decompression)
Sand and Dust	Compliant with MIL-STD-810G, 510.5, Proc I, II (blowing sand at 40-65 MPH for 6 hrs at ambient + 6 hrs at max operate, blowing dust at 17-23 MPH for 1.5 hrs)
Water Tightness	Compliant with MIL-STD-810G, 506.5, Proc I, and 512.5, Proc 1 (No water penetration during: driving rain: 4 in/hr at 40 MPH for 30 min, 30 PSIG water from 5 ft.)
Driving Rain	Compliant with MIL-STD-810G, 506.5 Proc I (4"/hr @ 40 MPH)
Water Jet	25 PSIG from 5 ft
Immersion	Compliant (1") with MIL-STD-810G, 125.5 Proc II
Humidity	Compliant with MIL-STD-810G, 507.5, Proc II
Fungus	Compliant with MIL-STD-810G, 508.6 (materials resist to fungal growth)
Explosive Atmosphere	Compliant with MIL-STD-810G, 511.5, Proc I (will not cause ignition of explosive gaseous mixture while operating)
Salt Fog	Compliant with MIL-STD-810G, 509.5, Proc I (resistance to salt-fog atmosphere for 48 hrs)
Solar Radiation	Compliant with MIL-STD-810G, 505.5, Proc I, hot-dry climate (operate through three 24 hr exposure cycles)
Vibration	Compliant with MIL-STD-810G, 514.6, Custom procedure (Operate through: 15 min/phase/axis of Ground Mobile Wheeled Vibration Profile, M113 Crew Compartment Wall Profile, and 150 min/phase/axis Bradley Sponson Vibration Profile)
Shock	Compliant with MIL-STD-810G, 516.6, Proc I, while hard mounted (Operate through: 40g at 6ms, 50g at 10ms, 200g at 1ms, 575g at 0.5ms)
Drop	Compliant with MIL-STD-810G, 516.6 Proc IV (Tablet, Keyboard, Hard drive operate after 26 drops from 48 inches onto plywood)
EMI/EMC	Compliant with MIL-STD-461F, CE-102, CS-101, CS-114, CS-115, RE-102, and RS-103 (fully configured system, fully cabled)
ESD	Compliant with IEC 61000-4-2 Levels 1 & 4 (2KV to I/O pins, 8KV to chassis, 15KV to non-conductive surfaces)
Reliability	Demonstrated MTBF Reliability of 1572 hrs IAW MIL-HDBK-781A, minimum of 10 system for 30 days (exposure: +49 to -32°C, 24 – 30 VDC)
High Altitude Electromagnetic Pulse	Compliant with MIL-STD-461F RS105 and CS116
Near Lightning Strike	Compliant with MIL-STD-464

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