



Location Telemetry Module (LTx)

For the DMC 3000™ Dosimeter

Part of the Orion™ RTLS ecosystem, the purpose of the Location Telemetry Module (LTx) is to provide an additional real-time location feature and to transmit worker data (worker information, gamma radiological data and setpoints) to WRM Telemetry Systems. LTx module is also backward compatible with WRM2™ Telemetry system and can be used as an enhanced telemetry module with capabilities for localization.



ORION RTLS COMPONENT

Allows direct connection to existing populations of DMC 3000 dosimeters (G3 Version 7.8.x or greater)

- Integrates directly with the dosimeter therefore, the workers do not need to wear separate cards or equipment for transmission of location tracking data
- Communicates with both Orion RTLS anchors and existing WRM systems
- Configurable for the WRM3 Protocol allowing it to transmit the DMC thresholds, wearer name, ID, RWP and task
- Omnidirectional Antenna for the Ultra-Wideband (UWB) Technology used for accurate tracking
- Transmits radiological information, in pre-configured intervals to WRM receivers
- Independent module power supply: AAA battery
- Designed for ruggedness and durability
- Waterproof IP67 (1 m 1 hour)

DESCRIPTION

Orion RTLS enhances the established technology of the DMC 3000 dosimeter, when fitted with an LTx module. The LTx module supports the transmission of WRM radiological information and location coordinates, tracking the wearer's location. The dosimeter with the LTx module communicates dose rate and location data with Orion Studio Software to facilitate real-time visualization.

Orion Real-Time Location System, or RTLS, helps support Critical Path activities by tracking people and the primary assets required for these activities. It reduces radiation exposure by providing better tracking of personnel and dose rates. It supports better ALARA planning by providing accurate time and motion information along with dose, rate, and location status of workers.

Although the LTx module has been specifically designed as the most advanced addition to the Mirion Telemetry family, it features seamless communication with all existing WRM telemetry receivers for telemetry only functionality.

RELATED PRODUCTS

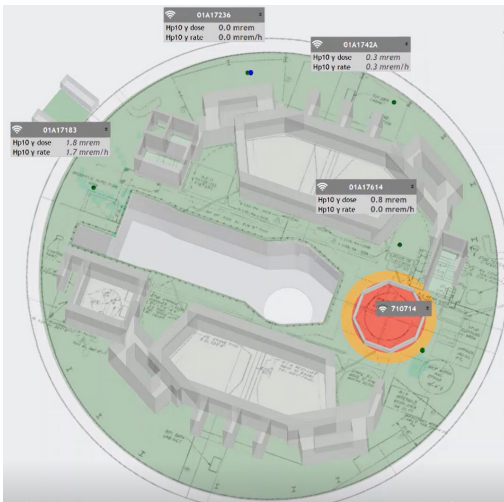
- Mirion WRM™ Telemetry systems
- Orion™ RTLS Anchors
- Readers: LDM 3200™, LDM 320D/W™, LDM 1000™
- Software: Orion™ Studio, HIS-20™, DosiServ™, LDMAccess™, Sentinel, DMCUser™, TeleView 3000™ and TelemetryStudio™

PERFORMANCE

Ultra-Wideband Location Technology

- FCC/IC Certified
- Complies with FCC Part 15.250
- Power Output/Range: 0.9 mW/100 m line of sight
- 6178.9 MHz to 6731.4 MHz
- Highest emission peak 6544.5 / 6644.4 MHz
- Data Rate: 6.81 Mbps
- Peak Gain (dBi) 1.4

When used as part of an appropriately configured Orion Anchor network, a location resolution of 1 m in the Orion Studio software is achievable.



PRODUCT CHARACTERISTICS

Alarm Features and Communication

- Telemetry data communication by transmission of WRM compatible data
- Positioning data communication via UWB to Orion Anchors
- Geofencing alarm for high rad area or user configurable area (Orion Studio configuration)
- Support for Orion Studio Messaging data and alerts sent from Orion system operator to the dosimeter display



Compatibility

- Compatible with DMC 3000 firmware V7.8 or higher
- Compatible with WRM2 or WRM3 system (AWM and more)

WRM TRANSMITTER CHARACTERISTICS

- **Transmit power output and sensitivity:**
 - 125 mW (900 MHz)
 - Sensitivity: -106 dBm (900 MHz)
- **Frequencies:** 900 (902-928) MHz
- **Transmission interval:** Adjustable 4, 8, 20, 30 and 60 seconds
- **Transmission range:** 0.5 to 1 mile (750 m to 1600 m) line of sight
- Meets the EPRI Low power guideline of <4 V/m at 1 ft

ELECTRICAL CHARACTERISTICS

- **Internal power:** AAA Alkaline battery (LR03)
- **Battery life:**
 - 900 MHz at 4 seconds Transmit with UWB at 10 Hz location >12 hours
 - 900 MHz Total Battery Life without UWB at 10 Hz location >40 hours

MECHANICAL CHARACTERISTICS

- Rugged, high impact polycarbonate-ABS case
- Dimensions with DMC 3000 dosimeter:
 - 141 x 60 x 21 mm (5.6 x 2.4 x 0.8 in.) max. without clip
 - 141 x 60 x 28 mm (5.6 x 2.4 x 1.1 in.) with standard clip
- Weight with DMC 3000 and battery: 168 g (5.9 oz)
- Weight LTx module only: 85 g (3 oz)

ENVIRONMENTAL CHARACTERISTICS

- **Temperature range:** -10 °C to 50 °C (14 °F to 122 °F)
- **Storage:** -20 °C to 71 °C (-4 °F to 160 °F)
- **Shock, vibration and drop resistant**
- **IP67 protection:** 1 m (39 in.) during 1 hour
- **EMC:** The DMC 3000 with the LTx exceeds the requirements of MIL STD 461-RS103 (pulsed electric field); exceeds 120 V/m from 80 MHz to 5 GHz - MIL STD 461-RS101 (magnetic field 30 Hz to 100 kHz)
- **Agency approvals:** FCC (900 MHz) (USA), IC (Canada)

