



DLP Data Link Processor



Redondo Systems Incorporated (RSI) has been a leading provider of products and services in the areas of tactical data link and radar interface processing for over 30 years. RSI's product lines include fielded tactical data link and radar communications systems, radar and data link simulation systems, as well as stand-alone software packages and custom hardware solutions. RSI's major customers include:

- ♦ U.S. Army
- ♦ U.S. Air Force
- ♦ U.S. Navy
- ♦ U.S. Marine Corps
- ♦ Raytheon
- ♦ Northrop Grumman
- ♦ Lockheed Martin
- ♦ Rockwell Collins
- ♦ Thomson CSF
- ♦ EADS
- ♦ BAE
- ♦ SAIC

RSI's Data Link Processor (DLP) is an off-the-shelf PC based front end tactical data link communications processor. DLP allows one or more host systems to simultaneously participate on (or monitor) multiple external data links through a common message based interface. The common interface is implemented using RSI's Normalized Message Set (NMS) and is routed over an Ethernet link.



DLP Interface Capabilities Include:

◆ Data Links

♦ Link 16
MIL-STD-6016D
MIL-STD-6016E
STANAG 5516 Ed.4

Interfaces:
LVT Platforms J/A/D
Satellite J
Class 2H (1553B)
Class 2M (ADDISI)
JREAP-C (LAN)

♦ Link 11
MIL-STD-6011C
MIL-STD-6011D
STANAG 5511 Ed.5

Interfaces:
NTDS (Parallel)
ATDS (Serial)

♦ Link 11B
MIL-STD-6011C
MIL-STD-6011D
STANAG 5511 Ed.5

◆ RSI's Normalized Message Set Functions:

♦ For C² Units
Platform Situational Awareness
Air Surveillance
Surface Surveillance
Subsurface Surveillance
Land Surveillance
Space Surveillance
Ballistic Missile Defense Operations
Electronic Warfare
Weapons Unit
Air Controlling Unit
Command
Sam Controlling Unit

♦ For Non-C² Units
Platform Situational Awareness
Intercept/Strike
Bomber
Support
Mission Commander
Electronic Warfare
Combat Search and Rescue
Sam



Redondo Systems, Inc.
4025 Spencer St..
Suite 104
Torrance, CA 90503

Voice (310) 542-6730
Fax (310) 542-6771
WWW.RedondoSystems.com

Contact Marketing at:
RSI@RedondoSystems.com

DLP System Features

Hardware Configuration

- ♦ Ruggedized MIL-Spec chassis
- ♦ MIL-STD 820G Compliant
- ♦ MIL-STD 810F Compliant
- ♦ Rack mount option
- ♦ Off-the-shelf I/O Cards

Common Host Interface

- ♦ NMS messages
- ♦ DLP can be configured to meet any common interface requirements

Link 16 Terminal Interface

- ♦ Processes JTIDS network data load files
- ♦ DLP can be configured to meet any common interface requirements

Link 11 Circuit Control and Monitoring

- ♦ Equipment configuration and monitoring (DTS, receivers, transmitters, power amplifiers, filters, antennas)
- ♦ DTS controls (transmit/reset, radio silence, picket/NCS, net mode, waveform, data rate, receive mode, diversity, Doppler, sync, error correction, response times)
- ♦ Discreet statuses (receiver, transmitter, power amplifier)

Track Database

- ♦ 2000 objects (minimum)

Network Support

- ♦ Multiple workstations
- ♦ Integrated situation awareness

GPS Interfaces

- ♦ GPS Sync, IRIG-B

Automatic Initialization

- ♦ Turn-key operation
- ♦ User defined adaptation parameters
- ♦ JTIDS network download files

Data Recording

- ♦ All message traffic

DLP System Description

NMS allows the DLP to be installed in a separate, ruggedized commercial MIL-Spec hardware chassis, providing redundant power supplies, removable hard disk data storage, and space for up to 9 external interface cards (selection of chassis is configurable based on customer requirements). One slot may be used for a GPS card as required. Host systems may implement the message

RSI's Normalized Message Set Functions:

<ul style="list-style-type: none">♦ Time (Included GPS Card) GPS Antenna IRIG time source System time.♦ Host Unit Data ID (track number) Elevation/Altitude Exercise Indicator Displaced Position Network Participation Status Force Tell Indicator Emergency Indicator C² Indicator Simulation Indicator Time Quality Geodetic Position Quality Elevation Quality Strength Mission Correlator Voice Call Sign Platform Type Platform Activity Platform Situational Awareness Voice Frequency/Channel	<ul style="list-style-type: none">♦ Host Unit Data Continued Control Channel Active Relay Indicator Missile Unit Indicator Variable Track Quality Track Number Block Track Auto Initiate Status Correlation Parameters: Correlation State ID Conflict Resolution Mode II Restriction Auto Xmit Correlation Message Window Size Multiplier Min. Window Size Max. Window Size Restricted Track Quality Course Differential Speed Differential Min Geodetic Pos. Quality Max. Geodetic Pos. Quality
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in the host systems native processing environment using an available Ethernet port (assuming processing and memory availability are sufficient to support DLP processing in addition to native host processing)

On power up, the DLP software verifies the hardware environment and health and waits for control messages and status requests from the connected host(s). When one or more external data links are configured and activated, the DLP will translate incoming data link messages from the activated external interfaces, into the NMS and relay them to the host system. NMS messages from the host system(s) are conversely translated to the appropriate external interface message sets and protocols for output. The DLP maintains internal track and link databases to facilitate compliance with external interface standards and the host selected C2 or Non-C2 functions to include received message validation, transmit message construction (including message construction and number of required transmits, transmit timing, etc.), track data and status, track correlation, command and response processing, etc.

Built in Test (BIT)

<ul style="list-style-type: none">♦ SBIT (Startup BIT) GPS Result Amplification Serial Card (Protogate) Result Amplification	<ul style="list-style-type: none">NTDS Card (Sabtech) Result Amplification ATDS Card (Sabtech) Result Amplification	<ul style="list-style-type: none">♦ CBIT (Continuous BIT) External interface State Transmit Count Received Count Received with errors	<ul style="list-style-type: none">GPS Result Amplification Time Locked
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Under host control, the DLP can record all transmitted and received messages including all NMS messages. A standalone tool is available to reduce the recorded data file into a human readable format if necessary to support analysis.

