MAG_150/DCS-L

MAGALI DATA CRUNCHER STATION

DESCRIPTION

MAG_150/DCS-L is an ultra portable rugged station dedicated to test data extraction and analysis in all environments, even the harshest .

MAG_150/DCS-L extracts test data from various media : recorder, flash memory, data file… . and from various sources such as Telemetry (IRIG 106, CE83, CCSDS, MIL-STD-1553, ARINC 429 formats), Analogue, Serial, Ethernet, Video and Voice.

MAG_150/DCS-L manages numerous protocols and data formats

After extraction **MAG_150/DCS-L** stores the data onto disk with standard formats.

KEY FEATURES

- **PCM, MIL-STD-1533, ARINC 429, Video, Voice, analogues** extraction and replay
- All **major protocols** and **data formats**: Irig-106 Chapter 10, ENERTEC, DATaRec3...
- **Synchronisation** between all sources with high accuracy
- **Real time** and **Post processing** analysis of all parameters
- **3D** Visualization option

SPECIFICATIONS

CONTROLLER

Functional

Processor	Intel® CoreTM2 Duo L7400, 1.5GHz processor, 667 MHz FSB , 4MB L2 cache
Memory and memory	SATA 250GB HDD ; 2GB DDR2 expandable to 4GB
Display	15.0” SXGA (1440 x 1050) TFT, sunlight readable LCD
VGA Controller	Intel® Graphics Media Accelerator 950, 128MB shared memory
Keyboard	Waterproof mechanical membrane keyboard
Pointing Device	Touchscreen
I/O Ports	DC in x 1 ; USB 2.0 x 2 ; Docking port x 1 ; Serial port (RS-232) x 2 ; Network (RJ-45) x 1 Modem (RJ-11) x 1 ; External VGA x 1 ; IEEE1394b or PS2 x 1 ; Audio output x 1 ; Microphone x 1
Expansion Slots	PCMCIA Type II x 2 or Type III x 1
Multimedia Bay	Super multi DVD
Power	AC adapter (90W, 100-240V, 50/60Hz) ; Li-Ion smart battery (7800mAh)
Integrated Communications	10/100/1000 base-T Ethernet ; 56K ITU V.92 modem ; WLAN 802.11 a/b/g (Intel WiFi Link 5100) ; Bluetooth (v2.0 class 2)
Operating System	Windows 7 32-bit
Rugged Features	MIL-STD 810G and IP65 compliant

Environmental

Operating Temp	0°C to 60°C
Storage temp	40°C to 70°C
Humidity	5% to 95% RH, non-condensing

Issue : Dec. 2016

FUNCTIONNALITIES

CONTROL MODULE

The control module communicates with the device, or other supports : memory card, disk, to transfer data blocks.
A control window controls the recorder/reader and display information : read, stop, backwards, forwards, positions on block, events, records or time. The time, event and running record are displayed.

- SCSI control
- Ethernet control
- Position
- Time display
- Intuitive Interface

DATA TRANSFER

During transfer, MAG 150 reads data blocks, extracts packets from the different sources, parameters and block information (IRIG time).
Data blocks and extracted source packets can be stored onto disk for replay or post processing. Included parameters will be extracted and visualized from the file created.

TEST CONFIGURATION

The test configuration details the format of contents and data. It is organized as input masks on a logic graphic tree diagram, with respect to canal organization, and related decommutation modules.
For each channel, the main elements to define are : the contents, frame structure according to format (PCM, 1553, ARINC-429, …), parameter list to extract, with : its definition (position, number of bits, type…) and conversion function in engineering value.
With this module, graphic displays can also be defined to display data during reading or replay.

- Canal selection
- Frame definition
- Parameter definition
- Graphic display
- Processing channel
- Alarms

ANALOGUE EXTRACTION MODULE

The module extracts analogue packets. Channels included in these packets are available for processing.

VOICE EXTRACTION MODULE

The voice is extracted from the tape and generated from the PC speakers. The audio tape is transmitted synchronously with other data sources and video. This function is available when reading is at real speed 1:1.

- Synchronous transmission
- WAV storage format

VIDEO EXTRACTION MODULE

This module extracts video packets from the tape. The video streams can be viewed in real time or in replay mode.
The display is synchronized with the parameter display issued from the other sources (PCM, 1553, analog…) using the dating of the recording. Dating or parameter value can be inserted in video display.
Several video channels can be visualized; each of them are synchronized. All channels can be displayed on the same monitor, or distributed on different ones including PAL monitors.

- Up to 8 videos
- Source synchronization
- Video synchronization
- Multi-monitor distribution
- VGA or PAL monitors

PCM Extraction Module

This module extracts data from the PCM streams.
Data is received in bit streams. It is necessary to apply first a decommutator module to obtain the minor frame, then to apply a decommutation module to extract the parameters (for example : IRIG 106 decommutation module).

- PCM/MERGER canal
- Source synchronization
- Conversion in engineering units
- IRIG 106, CE83, CCSDS, DANIEL
- Several datation modes

Decommutation module

The decommutation module allows both synchronization and extraction of the minor frames included in the input bit stream. This synchronization is made on a search strategy – control – lock. It allows a tolerance on the number of error bits and slip bits (16 max). From the minor frames, various decommutation modules can be applied: IRIG 106, CE83, CCSDS…
The main features are :

Word length	3 to 32 bits
Minor frame length	2 to 16383 words
Major frame length	1 to 1024 minor frames
Bit order	MSB/LSB first
Synchronization	Up to 64 bits
Sync error tolerance	0 to 15 bits
Sync slip tolerance	0 to 15 bits

IRIG 106 decommutation module :

The module decommutes PCM streams in IRIG format. It is active in real time (during transfer or acquisition) and in post processing (after data storage) modes.
The module manages decommuted, sub-commuted or super-commuted parameters as well as embedded messages. The parameters included in the minor frames can be decommuted and converted into engineering values.

MIL-STD-1553 Conversion Module

This module extracts data from MIL-STD-1553 channels. Messages are extracted from blocks and are decommuted and time-stamped as on the tape.
They are then stored onto disk. All parameters included in the messages can be decommuted and converted into engineering unit values.

ARINC 429 Extraction Module

This module extracts data from the ARINC 429 channel. Packets are extracted from the blocks and different channels are decommuted and dated as on the tape.
All parameters included in the messages can be decommuted and converted into engineering values.

SerialExtraction Module

This module extracts data from the Serial channel (RS232, RS422, …).
If data is in standard format, parameters can be extracted, converted into engineering values, and visualized and processed with MAG150 functions. Packets are stored onto disk in raw data format.

Ethernet Extraction Module

This module extracts data from an Ethernet stream.
If data is in standard format, parameters can be extracted, converted into engineering values, and visualized and processed with MAG150 functions.
Packets are stored onto disk in raw data format.

ARINC-664 EXTRACTION MODULE

This module extracts data from an ARINC-664 stream.
If data is in standard format, parameters can be extracted, converted into engineering values, visualized and processed by MAG150 functionalities.
Packets are stored onto disk in raw data format.

ORDERING INFORMATION

MAG_150	MAGALI software for Visualization, Analysis and Tools Communication module with DATaRec and chapter 10 recorders or files *Including PCM sync, analog and voice*
MAG_150/PACK	Bundle sofware package including : . MAGALI software for Visualization, Analysis and Tools . Communication module with DARATEC and chapter 10 recorders . PCM sync, analog and voice . IRIG decommutation module, class 1 and class 2 . 1553 decommutation module . ARINC 429 decommutation module . Serial input async RS232 - standard format . Ethernet acquisition - standard format . Video stream extraction and replay MPEG/JPEG . Voice extraction
MAG_150/IRIG(1)	IRIG decommutation module, class 1 and class 2
MAG_150/CE83	CE83 decommutation module
MAG_150/CCSDS	CCSDS decommutation module
MAG_150/1553(1)	1553 extraction module
MAG_150/ARINC429(1)	ARINC 429 extraction module
MAG_150/IENA	Ethernet acquisition - IENA format
MAG_150/VIDEO	Video stream extraction and replay MPEG - 4 channels
MAG_150/3D_VIRTUAL	3D Visualization - With standard 3D mobile and 3D terrain
MAG_150/ZDSMEM	Extraction from ZODIAC DS memory card
MAG_150/ACRAMEM	Extraction from MEM/003/004 ACRA memory card
MAG_150/TTCMEM	Extraction from MSSR2000 TTC memory card

(1) Included in MAG_150/PACK bundle

NEXEYA FRANCE
Route d'Elne
66200 MONTESCOT - France
Phone: + 33 (0) 4 68 37 36 35
Fax: + 33 (0) 4 68 37 36 34
E-mail: sales-tis@nexeya.com
www.magali.com