

Digital Scan Converter

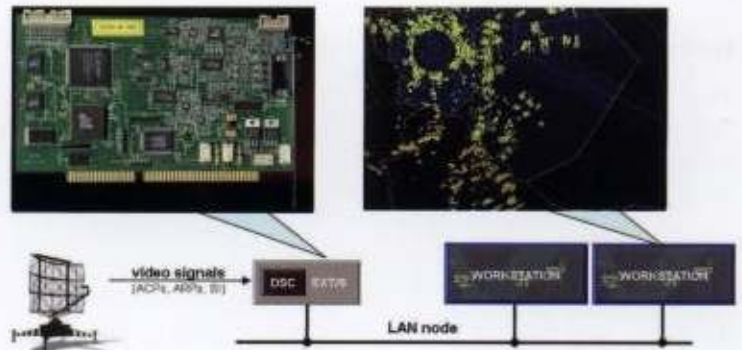
CSA952

DSC provides you with digital raw video information - synthetic video via LAN in special compression format

The Digital Scan Converter (DSC) is intended for conversion of raw video information to digital form by primary radar video processing. The DSC is designed to accommodate scan rates and signal bandwidths of both short and long-range radars and utilize two video channels. After parallel A/D conversion of radar video signals the radar echoes parameters are determined by DSC. Output information is compressed and through LAN is distributed to RDD workstations by LETVIS RDD software. Single DSC provides information for all RDD workstations connected to the LAN. DSC software enables a remote control of video signal processing parameters. DSC is capable to process all information coming from radar meteor channel and to split it into 6 levels depending on input signal amplitude. The number of output levels is selectable whereas the update rate of meteor information depends on the number of levels (N antenna revolutions are required for N levels).

DSC Characteristics

- Processing Channels: Parallel independent processing of two video channels with range-azimuth gating
- Radar Video Sampling: 8-bit A/D conversion; 0.25 to 10.0 MHz sample rate
- Range accuracy: selectable from 165 to 480m (7,5m step)
- No. of range quantum processed: 1600 (3200)
- Detection Capacity: Up to 2,000 detections per second
- Accommodation to a wide variety of radar types and site requirements
- Weather channel processing: 6 output levels of meteor channel
 - Reports real-time weather contours from primary radar video signals
 - Provides accurate mapping of ground clutter for optimal weather detection
 - Provides a local or remote display of weather data and controls for maintenance and fault monitoring



Radar Data Extractor

The Radar Data Extractor (RDX) extracts digital target information by primary radar video processing. The RDX is designed to accommodate scan rates and signal bandwidths of both short and long-range radars and utilize both normal and MTI video signals. After parallel A/D conversion of a radar's normal and MTI video signals, the RDX performs non-coherent integration and applies fixed and adaptive thresholds to maintain a constant false alarm rate. It detects targets via M-of-N sequential observer process derived from a rank-value background-normalizer and high-resolution clutter map. This eliminates "splitting" a single range-extended target, and "merging" two targets occupying adjacent azimuth cells. All processing functions are fully configurable to satisfy specific customer needs.

In addition to providing high quality digital primary reports, the RDX will:

- Accept digitized beacon radar (SSR & MSSR) inputs and perform primary-secondary target correlation
- Reduce false alarms from ATC and Air Defense radars
- Output track data or track-filtered plot data
- Upgrade easily and integrate with a variety of systems for accurate, effective and rapid site optimization.

RDX Characteristics

- Processing Channels: Parallel independent processing of normal and MTI video with range-azimuth gating
- Radar Video Sampling: 10-bit A/D conversion; up to 20.0 MHz sample rate
- CFAR Processing: Ordered-statistic background normalize; range-varying threshold map; integral clutter map
- Detection Capacity: Up to 1,000 detections per second
- Adaptation processing: Automatic adaptation to environmental conditions
- Target Capacity: Up to 1,000 reports per scan
- Accuracy Performance:
 - Range accuracy = 30 m;
 - Azimuth accuracy = 0.2° (for 1.5° beamwidth)

