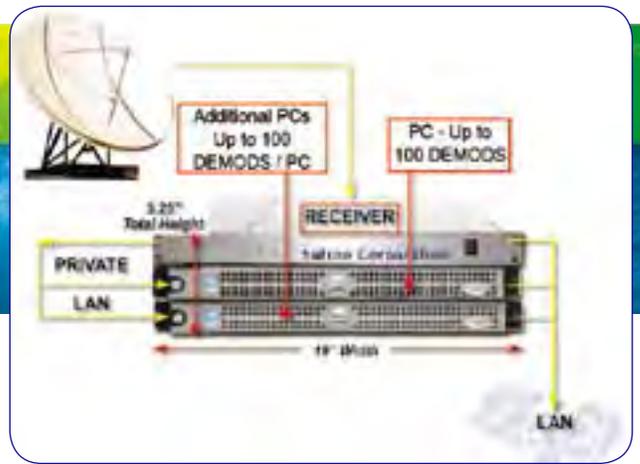


HIGH DATA RATE RECEPTION: 100-300-1200 BPS

GOES Digital Satellite Receiver Direct Readout Ground Station



Features

- ▶ GOES CS V1.0B & CS V2.0 compatible : Receives original & new 'V2' format messages.
- ▶ Supports all new V2 channels.
- ▶ Pilot tone (beacon) tracking & DCP demodulators are implemented completely in software on PCs.
- ▶ Dual Pilot Monitor Capability: Permits **UNINTERRUPTED** data reception in the event of loss of Pilot signal.
- ▶ Message Tracking Capability: In the event of 2 Pilot signal failures, the system will track the channel activity for the ultimate in station reception reliability.
- ▶ A single PC supports up to 100 channels of any baud (100, 300 or 1200).
- ▶ Multiple PCs can support 100 channels or more! Once the DSR II receiver is installed, standard PCs plus DSR software support as many channels as needed.
- ▶ User-defined software demodulators monitor any DCP channel (100, 300 or 1200).
- ▶ Software provided with the system performs all the system functions to setup and operate the DDRGS.
- ▶ User-friendly Windows set-up
- ▶ Monitor program provided to give a quick, detailed view of the status of the beacon tracking & each of the demodulators.
- ▶ DCP message data can be recorded on the PC or retrieved via a standard TCP/IP socket interface.
- ▶ NTP time synchronization

Pilot Tracking

Dual Pilot Tracking Support

The DRGS system tracks 2 pilot signals at the same time. In the event of a failure of the primary pilot signal, the system will perform a 'NO BREAK' transition to the backup pilot signal with no loss of data. Currently the system supports the original pilot signal in addition to the new pilot signal found below channel 1.

Failsafe Tracking Mode

The system operates continuously in the event of a failure in both pilots at the same time. In the event of dual failure, the system will track the channel frequency based on average frequency reception of the messages on the channel. This yields performance almost as accurate as the actual pilot based tracking and permits operation indefinitely until NESDIS corrects any problem with the Pilot. Once the Pilots return to service, the system automatically switches over to the original pilot with no loss of data.

Functions & Advantages

Functions	Advantages
Supports V1 and V2 GOES Messages	Compatible with all transmission types.
1 PC reception of up to 100 channels	Expansion to 266 channels (additional PCs)
Real-time acquisition of all channels	Demodulators do not use proprietary hardware.
Automatic reception quality control	Low maintenance, user-friendly training
User-friendly Windows programs	Compatible with PCBASE2 & XConnect software
Demodulators	Superior Performance
Configurable demodulator characteristics	Easier to install, support & expand
Output messages via LAN	Software runs on standard Windows XP PCs

Demodulators

- ▶ Implemented entirely in software on the PC
- ▶ No proprietary hardware used in demodulators
- ▶ Control via Windows program or LAN through socket protocol
- ▶ Output of received messages to disk or LAN through socket protocol
- ▶ User set modulation type (100, 300, 1200) and channel
- ▶ Low implementation loss
- ▶ User settable signal processing parameters: frequency, sweep range, natural frequency, AGC bandwidth, lock bandwidth, samples/symbol, preamble timeout
- ▶ User settable tracking parameters: natural frequency, PLL type, AFC parameters, damping factor
- ▶ Quality measurements of signal strength, frequency error, modulation index and parity errors
- ▶ Available debug output
- ▶ Available diagnostic output
- ▶ Simple to update



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7/12/2011

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GOES Digital Satellite Receiver Direct Readout Ground Station

Ordering

RS-0-R-16-PCMT

DSR Receiver, 16 channel software license, mini-tower PC with Windows XP, cables & installation aids

RS-0-R-16-PCRM

DSR Receiver, 16 channel software license, rack mount PC with Windows XP, cables & installation aids

RS-0-R-04-PCMT

DSR Receiver, 4 channel software license, mini-tower PC with Windows XP, cables & installation aids (use MT in place of RM for mini-tower PC)

RS--R-04-PCRM

DSR Receiver, 4 channel software license, rack mount PC with Windows XP, cables & installation aids (use MT in place of RM for mini-tower PC)

RS-0-0-16-PCRM

16 channel add-on software license, rack mount PC with Windows XP

RS-0-0-16-PCMT

16 channel add-on software license, mini-tower PC with Windows XP

RS-0-0-04-PCMT

4 channel software license mini-tower PC

RS-0-0-04-PCRM

4 channel software license rack mount PC

DDRGS-REC

DSR Receiver

5000-0140

Antenna, 5m, EL/AZ mount, manual

5000-0140-2

Antenna, 5m, EL/AZ mount, 0-85 deg, manual

5000-0141

Antenna, 5m, polar mount, manual

5000-0142

Antenna, 5m, polar mount, motorized

3911-1092

Feed/LNB, no filter

3911-1093

Feed/LNB, filter

4141-1003

RG-8 cable

3121-1357

Type N connectors (2 required)

6661-1141-1

Installation kit w/compass, inclinometer, cable ties & tape

Ordering Options

ICD DAPS DAMS

System compatibility with DAPS II Ingest Protocol

Analysis tools

Detailed monitoring of DCP channels. Included: data dump tools for capturing raw data, spectrum analyzer tool & time domain analysis tool for showing baseband signals, phase error, carrier & clock lock status, AGC values, etc.

DDS Protocol

Client/service protocol to transfer DCP data over a network. DDS is in wide use among agencies that operate DRGS and LRGS stations.

Required PC - 16 Channels

- ▶ Rackmount, desktop or mini-tower design
- ▶ 1 processor @3.0 GHz or dual processors @1.5GHz with hyper-threading
- ▶ 40 GB disk, 256 MB memory
- ▶ Dual 10/100 Ethernet cards
- ▶ Windows XP operating system

DSR Specifications

Size	Standard 19" rack mount (1HU)
Supply Voltage	85-250 VAC
Temperature	0 to 35C
Humidity	10-90%
1st IF	130-150 MHz standard 30-200 MHz optional
Final IF	13.75 MHz
Output	IF Monitor, BNC for monitoring the signal or connection to WEFAX or GVAR receivers 802.3 Ethernet with 16 bit I/Q complex samples
Time Sync	NTP



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