

2met![®] DSR III Adaptable Satellite Telemetry Receiver

Release 2.4

SCISYS Deutschland GmbH offers the adaptable satellite Telemetry Receiver *2met![®] DSR III* to receive and process high-rate data streams up to 90Msymbols/sec from direct broadcasting Earth Observation satellites.

2met![®] DSR III operates on various modulation / coding formats and provides advanced monitoring capabilities.

The adaptable telemetry receiver – best value for your money

2met![®] DSR III



FUNCTIONS	ADVANTAGES
<ul style="list-style-type: none"> ▪ Handling of several missions such as EOS TERRA and AQUA, NOAA HRPT, Feng-Yun C-HRPT, METOP A-HRPT ▪ Reception of high-rate data directly broadcasted by Suomi NPP ▪ Supporting of BPSK / QPSK / OQPSK / 8PSK in NRZ modulation ▪ Configuration via editable text files extended rate (XR) version 	<ul style="list-style-type: none"> ▪ Simplified system layout ▪ Data output primarily by a 16-bit parallel interface ▪ Multi-mission capability ▪ CLK/NRZ output on RS-422 ▪ Parallel interface card drivers running on LINUX, SOLARIS or Windows operating systems

Description

The implementation of the 2met![®] DSR III allows for reception of several Earth Observation Satellites. It supports data rates from ~0.5Mbps up to ~80Mbps - pending on various modulation / coding formats: 45Mbps with Viterbi R=1/2, 67.5Mbps with Viterbi R=3/4, 78Mbps with Reed Solomon RS(255,233) only. The receiver supports advanced monitoring capabilities and comprehensive user programmability using various utility programs.

The main functions are

- standard IF input is 1-1.5GHz; others can be supplied as well, e.g. a fixed 720MHz IF
- Modulation BPSK / QPSK / OQPSK / 8PSK
- Software frame synchronisation to various standards, e.g. CCSDS or special formats
- Viterbi decoding for R=1/2 K=7 operation (ESA/NASA standard) in BPSK like "serial" mode (e.g. TERRA), or QPSK like "parallel" mode (e.g. MSG HRIT)
- Provision of monitoring information

After appropriate filtering, the IF input signal is processed by a dedicated I/Q de-modulator chip. Baseband filter and A/D conversion follow before an FPGA translate the samples to soft decision values. Supplied utility software allows mission settings to be downloaded and uploaded via a RS-232 serial link from user edited text files.

Data output is primarily by a 16-bit parallel interface (PCI interface card) and this can sustain up to 480Mbps in hard decision mode, or 120Mbps in 4-bit soft decision mode.

Tuning / search range is programmable up to +/-14MHz; thus, the system can easily cope with satellite frequency uncertainty and LEO Doppler shifts to beyond 30GHz carrier downlinks.

CLK/NRZ output is readable on RS-422 permanently. A matching selectable RS-422 input (both to 15Mbps by RS-422 standard) is available, either for legacy frame sync hardware or allowing an external decryption box to be inserted.

Technical Characteristics

IF Specifications

Input frequencies 1 – 1.5 GHz

Electrical Specifications

Supply Voltage 85-250 V AC

Power Consumption 80 VA

Technology Loss 0.4 dB typical

Interface Specifications

Connection 16-bit parallel or RS-422

Environmental

Temperature 0° ... + 40° C

Humidity 10% ... 95%

Mechanical Specifications

Size 2HU, 19" Form factor

Supported Missions/Models

QPSK parallel MSG HRIT

QPSK R=3/4 METOP A-HRPT

BPSK serial Terra MODIS

QPSK async Terra convolution coded part

QPSK R=1/2 SUOMI NPP

Ordering Information

2met![®] DSR III

This version receives data from all relevant HRPT missions and supports the reception of high-rate direct broadcast from Suomi NPP, AQUA and TERRA satellites.

Contacts

If you have any questions, please contact our Marketing and Sales Department at 2met@scisys.de



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