

CE DVB

RO.VE.R.
BROADCAST

NEW!

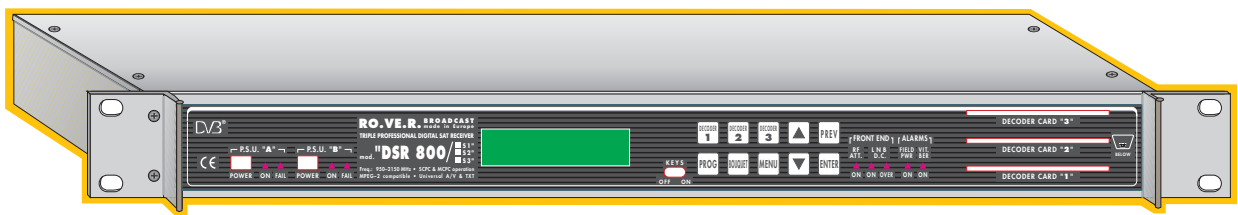
mod. **"DSR 800/..."**

TRIPLE PROFESSIONAL DIGITAL SATELLITE RECEIVER
— WITH **CONDITIONAL ACCESS** —

SCPC & MCPC, DVB-S & MPEG-2 FULLY COMPLIANT

FREQ.: 950-2150 MHz • Up to 3 simultaneously: TELETEXT & AUDIO-VIDEO PROGRAMS

- 1 UNIT 19" RACK ASSEMBLY
- EASY TO INSTALL AND USE
- CONDITIONAL ACCESS READER
- UP TO 20 BOUQUET AND MORE THAN 100 STORABLE PROGRAMS
- DIRECT ACCESS TO THE STORED BOUQUET OR PROGRAMS
- SUPERB PAL-SECAM-NTSC AUDIO/VIDEO QUALITY
- N. 2 ISOLATED VIDEO OUTPUTS
- BALANCED STEREO AUDIO OUTPUT
- RADIO ON SCREEN GRAPHICS
- WIDE MENU OF SIGNALS, MEASUREMENTS AND ALARMS



MAIN FEATURES & DESCRIPTION

The "DSR 800/..." is a digital satellite DVB receiver specifically designed and developed for broadcasting and CATV distribution applications.

Each part of the receiver was designed with care in order to guarantee high quality operation and an agreeable design. Special attention was shown to the mechanical, electrical and software design, applying them in a way that assures excellent performances in every working condition.

The "DSR 800/..." receives and decodes satellite signals with along DVB-S standard and can be tuned to any specific satellite channel frequency, polarisation and data rate.

All data can be selected from the front panel keyboard and is shown on the LCD back-light display panel with self-explanatory, easy-to-use menus.

The production testing procedures have been methodically and technically planned to obtain a maximum accuracy and reliability.

Before the final test stage the receiver undergoes temperature cycles, vibrations and accelerated ageing in special rooms.

The receiver can contain up to three MPEG-2 decoder boards and each board has:

- N.2 video outputs
 - N.1 balanced stereo audio output
- The unit provides 12 & 18 Vdc power and 22 KHz pulse to the LNB.
- The receiver is equipped with the following presettable alarms can close the relay:
- PSU failure
 - Absence or decrease of the received field.
 - B.E.R. increase.
 - Smart card related alarms: up-side insertion, card absence, no rights on the smart card.
 - MPEG-2 stalling (no video).
 - Programmable video muting: when one or more alarms are activated

The receiver can also do the following measurements, selectable on the front panel display:

- Field power in dBμV and dBm
- B.E.R. before and after viterbi
- SNR (C/N after digital demodulation)
- Receiver temperature in °C
- EB/NO
- Unlock counter
- FEC and SPECTRUM status: normal or inverted

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I.F. (DEMODULATOR)

- **Input frequency:**
950–2250 MHz
- **Input connector:**
"F" female
- **DC at IF IN:**
OFF, +12V, +18V, 22 KHz (protected)
- **Input impedance:**
75 Ω dissymmetrical
- **Return loss:**
≥12 dB typ. (8 min.)
- **Input level:**
from –65 to –20 dBm
- **Noise figure:**
9 dB typ. (11 max.)
with IF attenuator off
- **Image rejection:**
>35 dB
- **2nd I.F. bandwidth:**
36 MHz (or 53)
- **R.F. input attenuator:**
0/20 dB programmable
- **Symbol rate:**
from 2 to 45 MS/s
- **FEC:**
1/2, 2/3, 3/4, 5/6, 7/8
- **REED Solomon decoder:**
204/188
- **Transport stream interface:**
ISO 13818–1
- **Spectrum polarity:**
Normal/reverse/automatic selection

VIDEO

- **Analog video signal out (CVBS):**
PAL–NTSC SECAM (selectable)
- **Gain/frequency flatness:**
±0,5 dB typ. (1 dB max.)
between 25 Hz and 4,5 MHz
- **Luminance non-linearity:**
<2% (3% max.)
- **Sync compression:**
<1,5% (2% max.)
- **Luminance bar tilt:**
<1,5% (2% max.)
- **Base line distortion:**
<1,5% (2% max.)
- **2T K response:**
<1,5 % typ. (2% max.)
- **Chrominance/luminance ratio**
<2% typ. (5% max.)
- **Chrominance/luminance delay:**
<20 nS typ. (40 nS max.)
- **Chrom./luminance intermodulation:**
<1,5% (2% max.)
- **Differential gain:**
1,5% (2% max.)
- **Differential phase:**
1,5° (2° max.)
- **S/N videometric:**
≥60 dB W

- **Video signal outputs:**
N.2 per board (BNC connector)
1 V Video p adjustable
- **Video output impedance:**
75 Ω
- **VSWR video output:**
≥25 dB in the 25 Hz to 5 MHz band
- **Video output level:**
1 Vpp adjustable
- **Profile and level:**
@GENERAL resolutions
- **SEP type:**
I–P–B
- **Audio/video delay:**
≤2 mS
- **Teletext processing:**
yes, all lines

VARIOUS

- **Selection of the bouquet required:**
By the direct key on the front panel of the receiver with only the following data:
 - LNC setting: 12–18V & 22 KHz
 - LNC's local oscillator frequency
 - bouquet's RF frequency
 - Symbol Rate
 - FEC
- **Selection of program desired:**
using the direct key on the front panel
- The programme chosen as the programme to be received (Radio, TV or data) will be memorized in the receiver's first start–up memory.
- **Programmable via RS 232 (opt.)**

AUDIO

- **Audio outputs:**
No.1 stereo channel or
No. 2 mono channels per board
- **Output impedance:**
<20 Ω balanced
- **Output level (600 Ω):**
adjustable from 0 to +16 dBm
- **Compression layers:**
MPEG–2 layers 1 and 2
- **Sample rate:**
32 / 44.1 / 48 KHz
- **Bit Rate Mono/Dual Mono/
Stereo/Joint Stereo:**
32 ÷ 384 Kbit
- **Bandwidth:**
30 Hz ÷ 14500 Hz ±1 dB
- **Total harmonic distortion:**
at 0 dBm 1 KHz = 0.5%
- **Data rates:**
up to 448 Kbit/s
- **Connectors:** screw type
- **Cross talk:**
–60 dB typ.
- **Noise level to 0 dB:**
–70 dB typ. (60 dB min.)

ALARMS (LCD display)

- **PSU failure**
- **Absence or decrease of the field received:**
Adjustable threshold: –50 up to –25 dBm
When the alarm is activated the red LED on the front panel lights up and the field relay contacts close
- **B.E.R. increase:**
Adjustable threshold: 1×10^{-8} up to 2×10^{-4}
When the alarm is activated the red LED on the front panel lights up and the BER relay contacts close
- **Video programmable muting:**
Activated when the FIELD or BER, or both alarms are activated (sel. from keyboard)
- **Smart card:**
The receiver is able to detect and to highlight the absence of the smart card the possible uncorrect insertion the absence of rights on the smart card itself
- **Major problems:**
Due to MPEG–2 decompression process stall is also evidenced
- **Programmable video muting:** when one or more alarms are activated

MEASURES (LCD display)

- **Field power:**
dBμV and dBm
- **B.E.R.:**
before and after viterbi
- **SNR:**
C/N after digital demodulation
- **Receiver temperature:**
in °C
- **EB/NO**
- **Unlock counter**
- **FEC and SPECTRUM status:**
normal or inverted

OTHERS

- **Power supply:**
230 Vac ± 05%
- **Power:** 30 W
- **Dimensions:**
432 x 483 x 45 mm
- **Rack units:**
19" Rack, 1 unit
- **Weight:** 3 Kg
- **Operating temperature:**
from 0 to +50°C

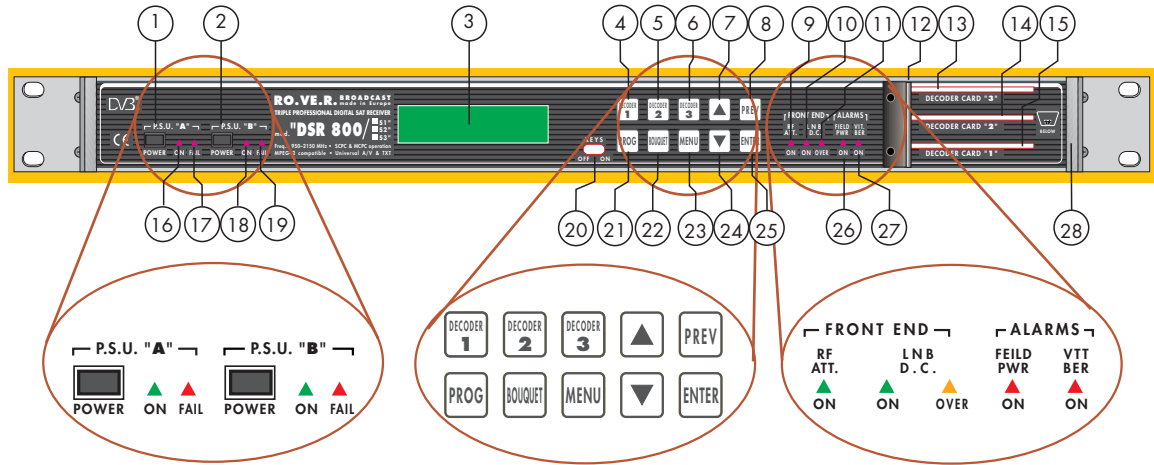
OPTIONS

- **PI Transport Stream Interface out**
- **2° L.P. video filter**
- **2° redundancy PSU with alarms**
- **Card reader (each programme)**
- **Viacess, Seca, Conax rights (each prog)**

ORDER

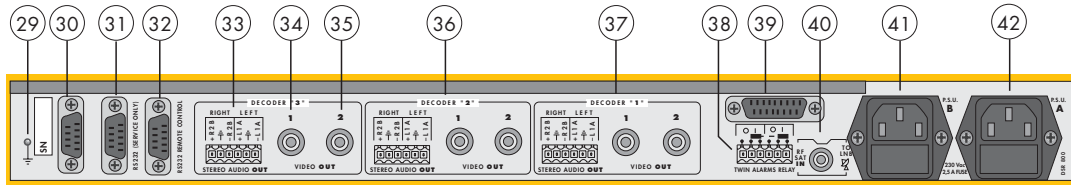
- **mod. "DSR 800/1"** (N.1 M–PEG board)
- **mod. "DSR 800/2"** (N.2 M–PEG boards)
- **mod. "DSR 800/3"** (N.3 M–PEG boards)

FRONT PANEL



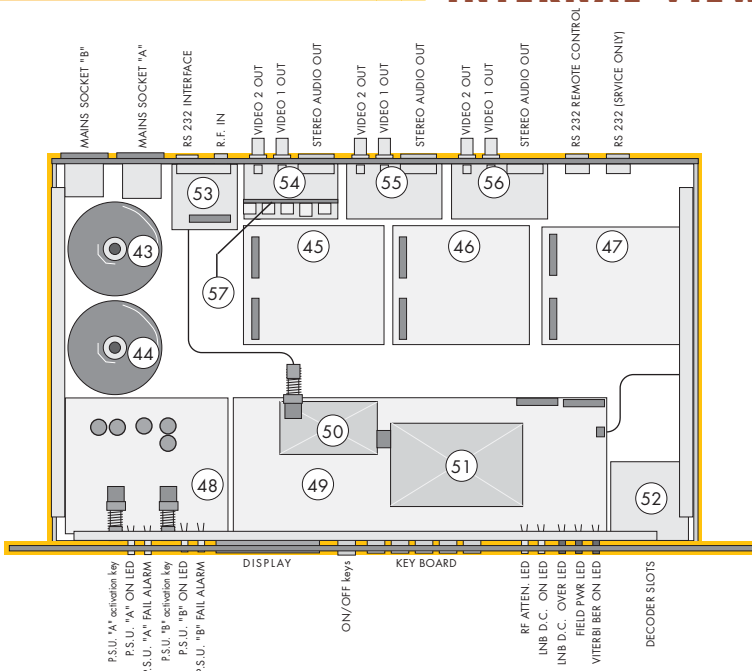
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|---|---|
| <ul style="list-style-type: none"> 1 P.S.U. "A" activation key 2 P.S.U. "B" activation key 3 Back-light liquid crystal display, 2 x 16 4 M-PEG board 1 selection key 5 M-PEG board 2 selection key 6 M-PEG board 3 selection key 7 UP ▲ selection key to increase 8 PREV previous parameter key 9 20 dB RF attenuator ON (green LED) 10 LNB DC ON indicator key (green LED) 11 OVERLOAD indicator key (yellow LED) 12 DECODER CARD holder 13 DECODER CARD "3" slot 14 DECODER CARD "2" slot | <ul style="list-style-type: none"> 15 DECODER CARD "1" slot 16 P.S.U. "A" ON (green LED) 17 P.S.U. "A" FAIL (red LED) 18 P.S.U. "B" ON (green LED) 19 P.S.U. "B" FAIL (red LED) 20 Keys ON/OFF (to deactivate front panel keys) 21 PROGRAMME selection key 22 BOUQUET selection key 23 Menu selection key 24 DOWN ▼ selection key to decrease 25 ENTER to confirm parameters key 26 ALARM status (red LED) 27 ALARM status (red LED) 28 19" Rack handle |
|---|---|

BACK PANEL



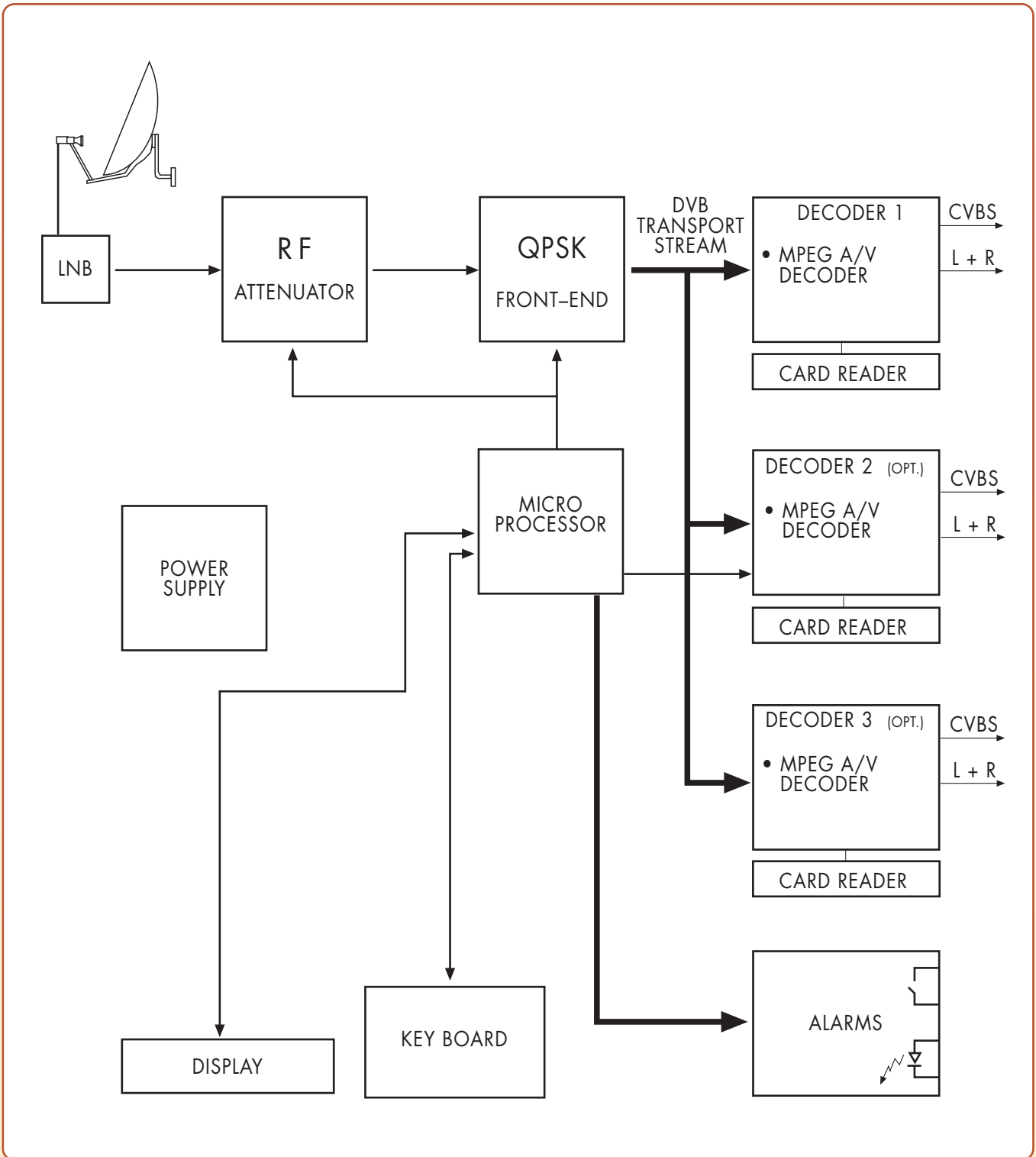
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| <ul style="list-style-type: none"> 29 Ground screw 30 RS 232 interface 31 RS 232 interface (SERVICE ONLY) 32 RS 232 interface (REMOTE CONTROL optional) 33 Board "3" audio out (+R2B - GND / -R2B / +L1A - GND / -L1A connectors) 34 Board "3" video output 1 (BNC connector) 35 Board "3" video output 2 (BNC connector) | <ul style="list-style-type: none"> 36 Board "2", the same as board "3", see points 33 to 35 37 Board "1", the same as board "3", see points 33 to 35 38 Twin alarms relay (ON/OFF - OFF/ON contacts) 39 PI Transport Stream Interface (opt.) 40 RF SAT input (F female connector) 41 Mains socket and fuse "B" 42 Mains socket and fuse "A" |
|--|--|

INTERNAL VIEW



- 43 Mains transformer
- 44 Mains transformer (opt.)
- 45 M-PEG board 1
- 46 M-PEG board 2
- 47 M-PEG board 3
- 48 Switching power supply board
- 49 Front-end board
- 50 RF input attenuator
- 51 Tuner
- 52 Card readers 1, 2 and 3
- 53 PI Transport Stream Interface board (opt.)
- 54 Audio/Video processor board 1 and related audio/video level adjust. trimmer
- 55 Audio/Video processor board 2 and related audio/video level adjust. trimmer
- 56 Audio/Video processor board 3 and related audio/video level adjust. trimmer
- 57 2° L.P. video filter (opt.)

BLOCK DIAGRAM



The functions and specifications are subject to change without notice

D1 RO.VE.R.-SAT

SERIE 500 RACK

Serie 400 MATV-SMATV & D.T.H. Modular Head-Ends

DSR 400 MPEG 2 Modular Digital SAT Receiver with Modulator QPSK to QAM transmodulator

19" Rack Analog & Digital CATV Head-End

D2 RO.VE.R. INSTRUMENTS

DL5 RD-TV-SAT & V.SAT Multi-function Analog & Digital Analyzer

TS1 Professional RD-TV and Telecommun. Spectrum Analyzers

TDA RADIO-TV & CATV Digital and Analog Level Meters/Analyzers

D3 RO.VE.R. BROADCAST

DSR 901 MPEG 2 Professional Digital Satellite Receiver

Serie T9 Satellite and Television Re-broadcasting Equipment

4 mt Professional SAT Ground Stations for broadcasting & Monitoring with De-icing