

# ESS 3000

Multi-Mode Satellite Receiver

## FEATURES

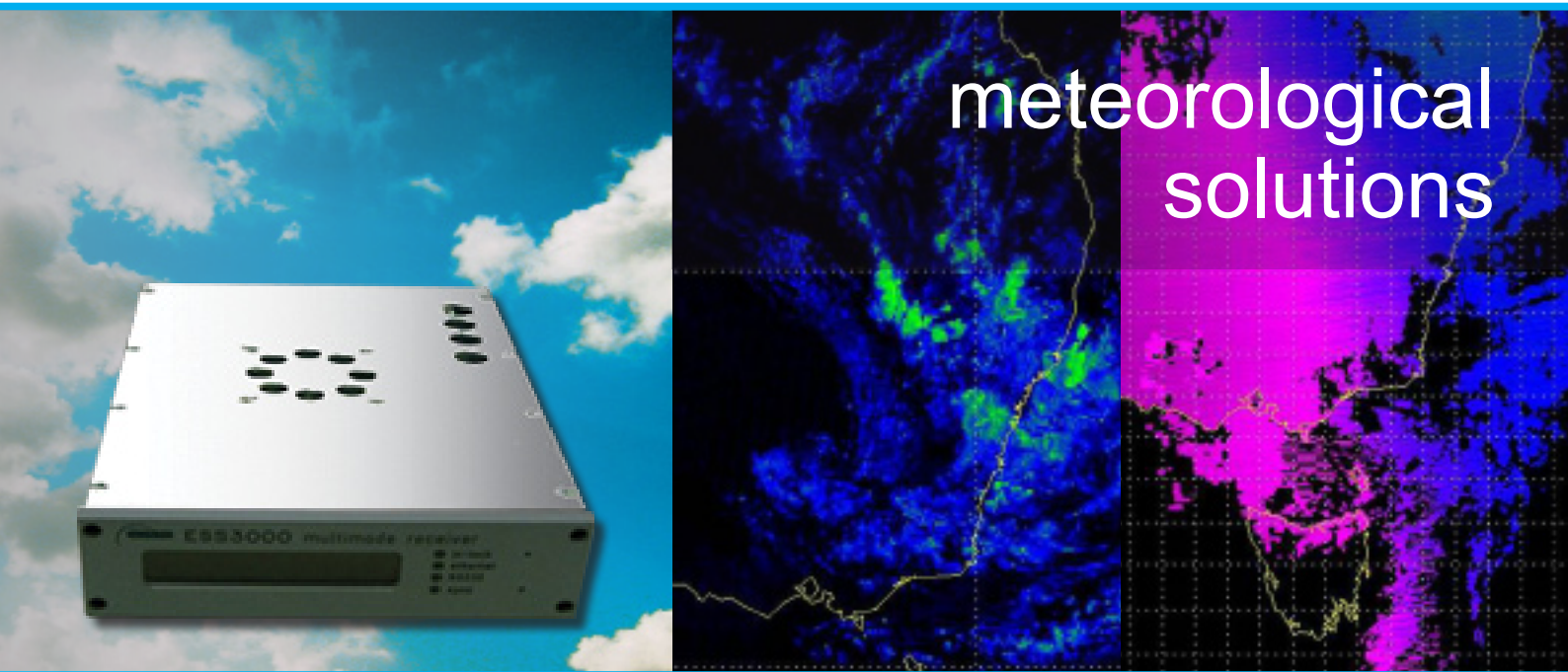
- Fully digital operation
- Upgrade via software configuration
- TCP/IP interface
- Very low demodulation loss (0.6dB)
- HDD drive housing
- Multi-mode satellite capability

## APPLICATIONS

The ESS3000 is an all-digital, multi-mode receiver. It performs all the demodulation tasks required to recover raw digital data from weather satellite transmissions.

The ESS3000 is designed to process data from current and future generations of meteorological and remote sensing satellites. New satellite formats can be implemented by software download, thus making upgrading easy.

Special attention has been paid to reducing the demodulation loss of the receiver to less than 0.6dB, ensuring that near theoretical maximum performance is achieved.



## NETWORK INTERFACE

A special feature is the TCP interface which allows the receiver to be connected directly to a network. This simplifies interfacing, removes the need for interface cards, and makes the connection to the receiver independent of the operating system and hardware of the ingest computer.

## SATELLITES RECEIVED BY THE ESS3000

Satellite	Symbol	Rate (Msym/s)	Coding Modulation
Terra	13.125	NRZ-L	OU-QPSK
Aqua	15	NRZ-M	O-QPSK
NOAA HRPT	0.665400	Biphase-L	PSK-67 Deg.
FY1 CHRPT	1.330800	NRZ-L	PSK-67 Deg.
FY2	0.660000	NRZ-L	BPSK
GOES GVAR	2.111360	NRZ-S	BPSK
METOP HRIT	3.500000	NRZ-L	QPSK
MTSAT HRIT	3.500000	PCM/NRZ-M	QPSK
MTSAT LRIT	0.150000	PCM/NRZ-M	BPSK
FY3 HRPT	4.300000	PCM	QPSK
FY3 MPT	18.30000	PCM	QPSK

## FUTURE SATELLITES (Subject to final Satellite Specifications)

Satellite	Downlink (MHz)	Data Rate (Mbps)
NPOESS-1 LRD	1702.5-1706.5	3.5
NPOESS-1 HRD	7750-7850	20
NOAA N' HRPT	1698	0.665
NPP HRD	7750-7850	20
COMS 1	1695.4	3

## TECHNICAL SPECIFICATIONS

Parameter	Requirement
Performance	0.6db from theoretical, typical
Input	Dual switched 140 MHz + Doppler +/- 10 KHz IF, -50 dBm +/-10 dB
Output 1	TCP/IP network connection
	Notes
	For packetized data, output to be compatible with RTSTPS
	For non-packetized data, output is raw data
Output 2	RS232 (for command and status)
Outputs (other than data)	Lock, RF level, Viterbi BER, Estimated SNR, Doppler offset
Control Inputs (via TCP/IP & serial port)	Satellite (sets demod type, rate etc), bit rate, test mode
Front Panel Display (2 line LCD)	Signal strength, lock, satellite type, demod type, command and traffic indicators

