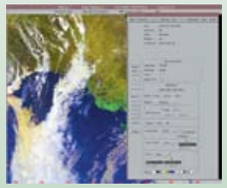
Australian Ingenuity

ES&S also designs and manufactures a range of instruments and systems:

WEATHER IMAGES



With over 20 years experience developing satellite reception systems (including our robust X-band SATRAX700), ES&S was one of the first manufacturers to produce commercially available MTSAT reception systems. MTSAT is the latest generation of geostationary weather satellite which provides a number of data streams ranging from low resolution (LRIT) data for general purpose data, and high resolution (HRIT) data for meteorological services. As new weather satellites launch, ES&S is ready to receive their data and maintain our reception systems at the leading edge of available technology. When MTSAT came online in May 2005, ES&S were one of the first to receive and display the various channels transmitted to earth using our GEOSAT reception system. The low resolution (4km elements) LRIT system can be used by airfields, farming co-ops, universities, or anyone who needs to keep track of major weather systems in real time. If you had a WEFAX system, LRIT is the next generation and is right for you. For advanced users who need to process more detailed data, our high-resolution (1km elements) HRIT system produces the data you need. Both systems come with the ES&S developed METEOR software package for viewing and processing the data channels (MTSAT has one visible channel, three infra-red channels, and one water-vapour channel), making our GEOSAT systems all you need for a turn-key satellite image reception solution. More information is available through our Meteorology group.

SEISMOGRAPHS

ES&S has been producing the Kelunji Echo seismic recorder for over two years, and this 5th generation product has proven to be our most successful yet. It has been used in a variety of seismic monitoring applications, from structural monitoring of strong motion in dams and buildings, to micro-tremor surveys, as well as traditional earthquake monitoring.

Seismic monitoring is important for the safety of the community and industry. Government agencies generally monitor earthquake activity for public safety, but there is a significant requirement for earthquake monitoring for OH&S and other applications in the corporate world. ES&S has developed equipment and expertise to meet this need, from low-cost strong motion structural monitoring solutions to larger, more sensitive networks that generate earthquake alarms and reports on the impact of an earthquake on assets in the seismically monitored region.

Forming the basis of the seismic monitoring network is the Kelunji Echo, which can be configured for strong motion recording using its in-built sensor, or expanded with more sensitive seismometers (eg. Guralp sensors) for recording small to moderate nearby earthquakes and larger distant events. The Echo can also be used for other vibration recording (blasting, micro-tremor surveys, construction), which ES&S can also undertake as a specialist service. The Seismology Research Centre group has a wealth of experience from over 30 years of operation. Contact our Seismology group for further information.

WATER LEVEL

As the water industry's operational needs have changed, ES&S has focused our efforts to meet these requirements. A move away from "bubbler" style water level sensors due to OH&S issues related to transporting gas bottles has meant that our 6150 PumpPro sensor is becoming the preferred method for water level measurement. The 6150 has its own compressor built in to purge a bubbler line and take a level reading as required. Of course where bubbler systems are still used, the 6100 LevelPro sensor (a component of the 6150) can be used as a standalone unit. The 6100 and 6150 liquid level sensors are the evolution of years of experience and development of these types of sensor. The 6100 module can be used with a gas bubbler system to accurately measure the level of most liquids, be it water in a river or dam, or dense or high-temperature fluids in tanks. The 6150 can similarly measure liquids, but does not require a gas bottle, regulator and fittings as it includes a built-in pump to purge the bubble tube and measure the back-pressure to determine the liquid level. These highly accurate sensors have digital outputs with millimeter accuracy, and also include functions to calculate liquid volume based on tank size and shape. For more information please contact staff in our Environmental group.

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MIROS

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Hi-tech products from around the world

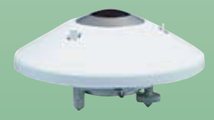
All products distributed by ES&S throughout Australia and New Zealand. Some products also distributed by ES&S in other countries.

Kipp & Zonen

Kipp & Zonen, world leader in solar radiation and atmospheric sensors, has been manufacturing pyranometers and many other sensors for over 70 years. Their range of instruments are used in meteorological research, solar energy research, material testing, climate control in greenhouses, building, physics, science and many other applications. The complete range of Kipp & Zonen products is now available through ES&S.

Pyranometers
For measurement of hemispherical (global) solar radiation

Pyrgeometers
For measurement of FIR (Far Infrared) radiation



Albedometers
Two pyranometers measure global and reflected radiation to produce net values

Net Radiometers
For short and long wave net radiation measurement. Can be done with domeless and precision sensors

Sunshine Duration
Sensors for the long term monitoring of sunshine duration for tourism and other applications

Pyrheliometers
Measurement of direct solar radiation. Can be used to guide sun tracking systems.

More products at: **www.esands.com**

AXYS TECHNOLOGIES

AXYS TECHNOLOGIES are experts in the design, manufacturing and maintenance of remote environmental data acquisition, processing and telemetry systems.

WATCHMAN500™
The Watchman500™ is an intelligent, configurable sensor I/O platform with two-way communications, designed for long-term operations in any location or environment. This platform is the ideal solution for any application requiring data collection, control, processing, or remote system management.

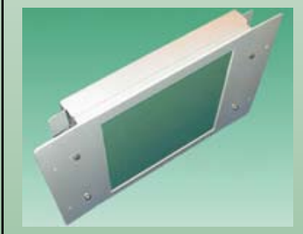
TRIAXYS™
Directional Wave Buoy
The TRIAXYS™ Directional Wave Buoy precisely measures directional waves and is easy to use. The sensor unit is comprised of three accelerometers, three rate gyros, a fluxgate compass and the proprietary TRIAXYS™ Processor.

Marine Applications
Monitoring the global marine environment is becoming an increasingly important activity. AXYS Technologies Inc. supports this effort through the design, build, and deployment of oceanographic monitoring platforms that measure a variety of parameters in water and air. AXYS buoys are deployed globally in a wide range of applications.

For more information visit: **www.esands.com**

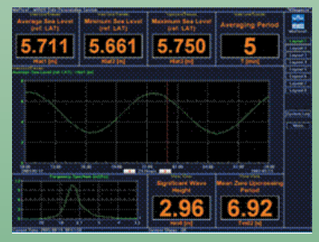
MIROS

A leading company in wave monitoring and remote sensing. Primarily focusing on the delivery of advanced sensor systems and associated management systems within the fields of Meteorology and Oceanography.



The Range Finder and sensor is designed for measurement of airgap and draught, ocean wave profiles and tidal variations, and water level in dams, rivers, canals, lakes etc.

The Miros Water Level and Waves System processes data from one or several water level sensors.



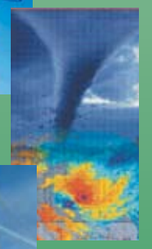
For more information visit our website at: **www.esands.com**

GURALP SYSTEMS

For many years ES&S has used Guralp sensors as part of our earthquake monitoring network that spans the eastern states of Australia, from Hobart to Cairns. Guralp sensors have a justified reputation as being reliable, affordable and high quality seismometers and accelerometers. The most popular sensor at the moment is their CMG-3ESP Compact, which as the name suggests is a small sensor that has a wide frequency response which is suited to recording small local events (micro-earthquakes) and large distant events (teleseisms) in a compact and versatile package. All Guralp sensors are perfectly suited for use with the ES&S Kelunji Echo seismic recorder. For more information on the CMG-3ESP Compact and other sensors in the Guralp range, please visit the ES&S website: **www.esands.com**

ENTERPRISE ELECTRONICS CORPORATION

EEC



EEC has the most extensive line of Doppler Weather Radar Systems available on the market today. EEC products are dedicated to weather detection and analysis with equipment that includes Doppler meteorological surveillance radar with automatic computer processing systems. For more information visit our website at: **www.esands.com**

lgi Innovative Geo-technical Instrumentation

A wide range of geotechnical products is available from ES&S, including products from Innovative Geotechnical Instrumentation, and Resomatrix. Products include Strain Gauges, Piezometers, Stress Capsules, Crack Meters, and conventional Vibrating Wire sensors. To view details about Innovative products and other geotechnical instrumentation, please visit our web site at **www.esands.com**