

Hiltron Introduces the SORBAS Satellite Communication Product Family



SORBAS brings together into one product series a range of devices Hiltron has developed in its twin roles of manufacturer and provider of completed customised systems. Central to this product family is the HCS-Core. This is used as

a control element for tasks such as switching downconverters, integrated receiver/decoders, digital video broadcast encoders, high-power amplifiers and waveguides. The other products in the series are field-proven and in successful operation at many locations around the world. These include Hiltron's HMCS monitoring and control software, HSACU satellite antenna control unit, HMAM three-axis motorised satellite antenna mount and HDCU de-icing control unit.



► DAB Distribution Uplink Project in Southern Germany

Recently we completed a project on behalf of a major broadcaster in southern Germany for the provision of two satellite uplink stations. These have been integrated in main and redundant roles as part of a nationwide expansion of the digital audio broadcasting network. The first station comprises a 2.4 metre receive/transmit antenna with a 1+1 redundant signal processing and waveguide switching, two block-upconverter power amplifiers, two modulators and a low-noise block downconverter for return

reception check. The second station is designed to function as a weather redundant backup. The project included installation at ground stations in Ismaning near Munich and at the 595 metre high Dillberg transmitter site.

Both stations are monitored and controlled by Hiltron HMCS software. Using a modern graphical user interface with colour-coded alarm message handling, Hiltron's HMCS provides a highly intuitive and efficient line-up procedure for professional satellite systems. This includes full control of contribution encoders.



Dillberg Transmitter Site

► Hiltron Completes Navy Communication System

Hiltron has completed a data and voice communications system for one of the largest naval fleets in the NATO Maritime Group. The project was carried out in partnership with a major European company which specialises in naval electronics.

Ship to shore communication is a vital aspect of naval operation and is much easier to achieve using satellite links than traditional radio technology. Vocality multiplexers provide the full range of user-facing connectivity, while managing the bandwidth used in multiplexing the services between locations. Four variations are available: portable V25 and V50plus and rack-mount V150 and V200. Each voice and data multiplex offers a different layout and density of ports such as voice, Ethernet, serial data or ISDN. As they all operate the same software, their management interface is nearly identical and they are all interoperable.

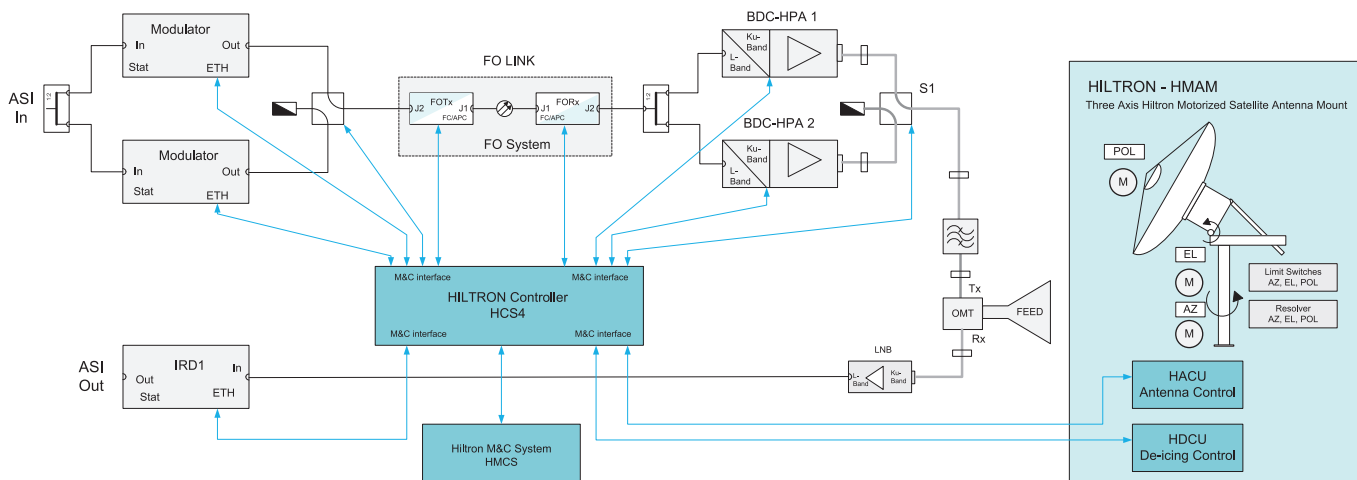
► Hiltron HMAM Chosen for Global Satellite Tracking System

In May 2016 we completed installation of a global satellite tracking system for one of the world's largest aerospace companies. The system includes six Hiltron HMAM motorised satellite antenna mounts integrated with a Hiltron HACU antenna control unit and associated motor-control electronics.



Each of the six installations is configured to operate in main-plus-backup roles. Two are located at ground stations in the southern hemisphere, two in Europe and two in North America. Each HMAM mount supports a 2.4 metre dish and is fitted with a wind sensor which activates a safety lock if wind speed exceeds 80 km per hour. The system will be used in a variety of modes to ensure continuity of the client's satellite network.

Application Study Uplink Stations



Typical block diagram of satellite uplink

For TV **contribution applications** like back-hauling material from studios for redistribution and satellite transmission from outside broadcasts areas and **distribution applications** like direct to home satellite broadcasting (DTH), direct to cable (DTC), and digital terrestrial television (DTT) Hiltron provides a solution based on BSS and FSS uplink stations.

The uplink stations operate in C-, Ku-, K- or Ka-Band at a medium to high uplink power.

The block diagram shows in a schematic way the main components of the system.

Antenna system: consists of an antenna with a diameter between 3.7 and 4.5 metres with a Ku-band 2-ports LP or a K-band 4-ports LP feed. Different antenna manufacturers and types can be used in the uplink system. The antenna is mounted on the Hiltron HMAM antenna mount with a high-precision three axis motorization, controlled by the Hiltron Antenna Control Unit (HACU). Optionally a de-icing system for the antenna and the feed can be provided, which is controlled by the Hiltron De-icing Control Unit (HDCU).

Transmit chain: consists of a 1:1, 2:1, or n:1 redundant HPA system. The HPA (with integrated high power block up-converter) has a TWT power of 400 or 750 watt, according to the required application. The linearizer option allows the HPA to exhibit linear amplitude characteristics and small phase shifts up to saturation. The HPA redundancy is controlled by the Hiltron universal controller unit (HCS4).

Receive chain: consists of a LNB or LNA system, powered and controlled by the Hiltron universal control unit (HCS4). As an option LNB with optical output can be used in the system.

1:1 or 2:1 redundancy can also be offered.

Monitoring & Control: the Hiltron Monitoring and Control System (HMCS) is a modular and scalable universal M&C System. The application is focused on providing user friendly control of different equipment for operators in Master Control Rooms. It is designed to control all relevant Satellite equipment.

Some optional components can be easily integrated into the system. Here the commonly used solutions:

Fiber optic links: to interconnect outdoor to indoor FO transmitters and FO receivers can be offered. The FO solution is monitored and controlled by the Hiltron M&C System (HMCS). For long distance links the DWDM option can be integrated in the solution.

Modulators and IRD's: different types of modulator supporting DVB-S2X, DVB-S2, DVB-DSNG and DVB-S. Hiltron offers and integrates the newest and state of the art Integrated Receiver Decoders (IRD), to meet the rapid transition from MPEG-2 to MPEG-4 AVC.

Benefits of the Hiltron solution:

- Reliability: Hiltron has been providing up-link stations for more than 30 years
- State-of-the-art technology, chosen with accuracy among the top worldwide manufacturers
- Innovative and sustainable solution to meet the environmental requirements
- Designed according to customer specific requirements

► Latvia Teleport Satellite Expansion Ahead of Rio Games

In July 2016 we completed a satellite communication project at a major teleport in Latvia.

A combined endeavour with Danmon Group Sweden, the project included a five-channel satellite link which actually carried television content to Europe from the 2016 Summer Games in Rio de Janeiro.

Central to the contract was the provision and integration of a 3.6 metres satellite dish on an HMAM motorised mount plus a Hiltron HACU antenna control unit and an HDCU-E ice-sensing and dish heating system.



3.7 m Antenna for Teleport in Latvia

► Hiltron Market Leader in the German “Premium SNG” Segment

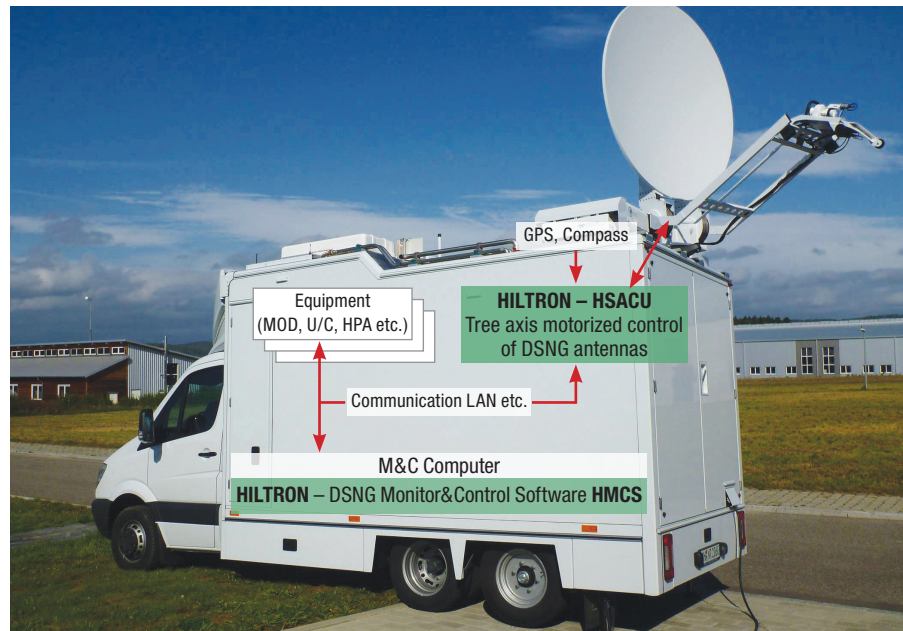
The development of a standardised complete solution based on state-of-the-art technology and integrated by a dedicated Hiltron product portfolio was the ambitious target Hiltron assigned to its R&D and Project Management department two years ago.

Having as a background decades of experience in the segment, Hiltron reached this target and today offers a reliable, complete and standardised solution for satellite communication as the core of satellite news gathering (SNG) vehicles in the premium segment.

The actual project is for one of the largest public-service television and radio broadcasters in southern Germany. This is in the final stage. Further projects are in preparation and will probably be finalised by the end of the year.

This activity centres on the integration of a complete satellite communications system which will allow news or outside broadcast crews to deliver video and audio content to the network's main studios from practically any location.

We have designed a complete system which sends and receives audio and video signals by means of a motorised 1.8 metre diameter dish antenna mounted on the roof of the vehicle

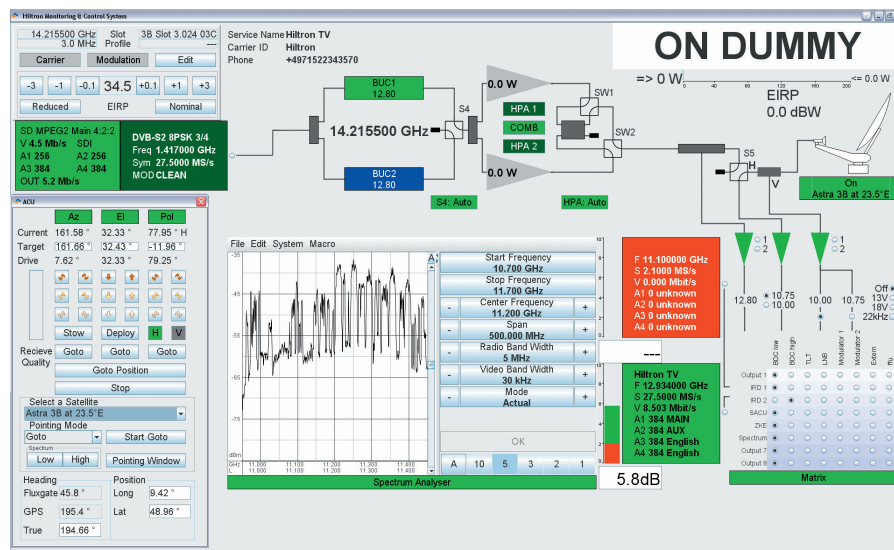


Hiltron HMCS and HSACU in SNG vehicle

applications. Installation, technical integration, cabling and testing are performed at Hiltron's headquarters in Backnang, Germany.

The turnkey project for the satellite uplink is realised by Hiltron as a subcontractor of the coachbuilder which designs and provides the vehicle to the end-users.

Desktop view on Hiltron HMCS monitoring and control.



(truck or van). A fully redundant 250 watt solid state amplifier feeds the antenna and constitutes the outdoor part of the solution. Inside the vehicle the Hiltron antenna control unit (HACU) and the universal controller for the complete Tx and Rx chains are installed in the racks.

The entire system is operated via a Hiltron HMCS monitoring and control unit in conjunction with a Hiltron HSACU antenna controller which is designed specifically for satellite newsgathering

► Innovation, Environment, and Sustainability

The climate changes and the way we can influence our environment are something that we cannot remain indifferent to. The Hiltron Research & Development team pays special attention to the environment by developing innovative products which are targeted to reduce the power consumption of the complete system. One example of this is the new concept of the

LNA heating. Especially in winter time it is important to keep the ambient temperature at a constant level for the LNAs which are mounted in an antenna hub. There are different methods either to heat up the complete hub or to control warm-up of the individual LNAs. With a proven special mechanical design within the LNA configuration together with several heating elements and sensors the ambient temperature of the LNAs can be kept constant. This method saves at least 80% of electric power and improves the ambient conditions and electrical performance for the LNAs to a very high extent for the entire year.

► Antonio Monteverde Joins Hiltron as Sales Director



Hiltron Communications has expanded its management team with the appointment of Antonio Monteverde as Sales Director. He joins us from AFT Microwave where he was responsible for sales and business development of microwave components for space, defence, medical, sensor, and industrial applications. He holds a masters degree in telecommunications and informatics from the University of Genoa, Italy.



► Hiltron Viewpoint

IBC2016 is fast approaching. You will find Hiltron at almost the same location as last year, though this is now called hall 5. Actual stand number is 5.B80. Our stand this year is larger and re-configured, reflecting that we are setting sail to new shores.

The SORBAS product family, introduced at this year's IBC as a complete system, represents

the backbone of our abilities as manufacturer of advanced satcom systems. All these products combine perfectly to deliver high quality turnkey solutions in the most accurate and flexible way.

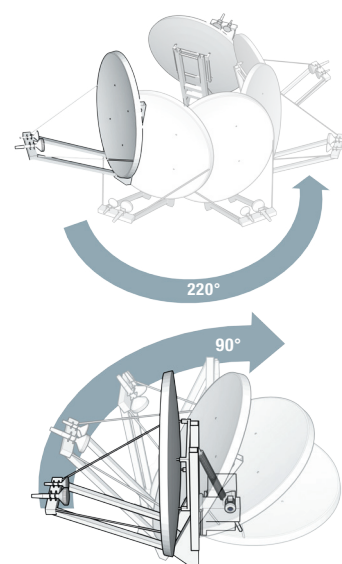
Last year, we expanded our team with several new employees to reinforce our development programme. As a result, we were able to reap the first fruits. In particular we welcome Antonio Monteverde who joined us in April as

Sales Director. Two main strategic goals have been achieved:

1. Hiltron entered the governmental/military market with unique systems.
2. Hiltron became a leading player in the premium SNG segment.

We face a strong obligation to secure the highest quality standards. So please challenge us.

High Speed... Three Axis Antenna Mount



MEET HILTRON AT  9TH TO
13TH SEP. 2016, AMSTERDAM, 5.B80

 **HILTRON**
SATCOM Systems Manufacturer