SkyMon

HTS

Spot beam monitoring system for High Throughput Satellites

High Throughput Satellite (HTS) systems represent a new generation of satellite communication. In recent years, several HTS systems have been launched and many more are expected to follow in the near future.

For operators, the introduction of HTS entails new requirements in satellite maintenance. Notably the spot beams used by HTS systems have different monitoring requirements from the wide beam technology used in conventional satellites.

An efficient HTS monitoring solution therefore needs to address the particular qualities of spot beam transmissions.

SkyMon HTS is designed to monitor radio frequency (RF) quality of satellite links in spot beams of high throughput satellites. It provides the most important RF monitoring functionalities in one box. SkyMon HTS is fully integrated in the comprehensive SkyMon product family for satellite carrier monitoring and interference localization / geolocation.

Operators' benefits at a glance SkyMon HTS

- provides RF monitoring and a powerful DSP in one box
- is fully integrated in SkyMon
- consists of a local database which enables continuous RF monitoring even in case of a network failure
- automatically transfers measurement results to the central database server (LTDB)

Spot beams - a new trend in satellite communication

HTS systems have the capacity to deliver considerably higher throughput than conventional satellites, achieved by using multiple spot beams. The wide beams used by conventional systems allow larger-scale coverage while spot beams cover more limited and sharply defined service areas. However, spot beams not only have a much higher data transmission rate versus wide beams. As an additional major advantage, several spot beams can reuse the same frequency, in effect multiplying the de facto transmission range. Hence the vastly increased bandwidth of HTS systems at the same time comes at more affordable costs per bit delivered.

To be economically viable, the number of spot beams generated by just one high throughput satellite typically is very large. Accordingly, carrier monitoring systems for supervising the quality of satellite links in specific spot beams also need to be streamlined in terms of cost, size and functionality. Another challenge comes with the spot beam design which can lead to an increase in occurring interference. Therefore spot beam monitoring systems need to enable the operator to manage the higher bandwidth by visualizing possible problems when and where they occur.

Monitoring HTS satellite links

SkyMon HTS has been developed with the monitoring requirements for the latest generation of high throughput satellites in mind.

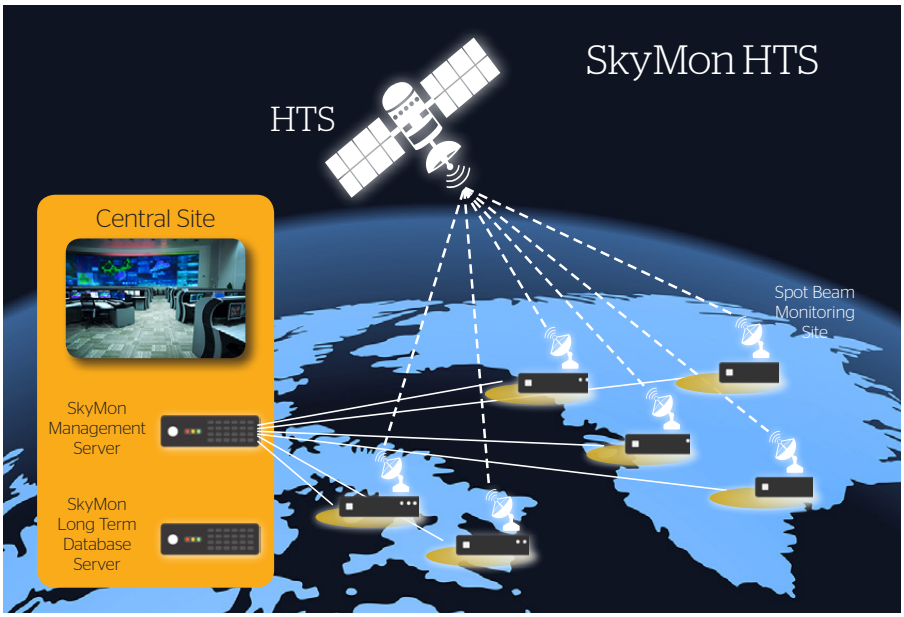
It provides a compact, low cost spot beam monitoring solution which is fully integrated in the SkyMon product family. Automatically monitoring the quality of spot beam transmissions, SkyMon HTS' primary task is to identify and characterize unknown signals. With its outstanding management and visualization techniques it enables operators to manage an enormous number of spot beam transmissions in order to rapidly identify and pinpoint emerging interference issues. It is designed to be operated with minimal overhead, including personnel and other resources.

Technical specifications

Input frequency	70 MHz - 6GHz
Instantaneous bandwidth	56 MHz
ADC resolution	12 Bit
ADC Sample Rate (max)	61,44 MS/s
GPS Unlocked TCXO Reference	+/- 75 ppb
GPS Locked TCXO Reference	<1 ppb
RAM	8GB DDR4
Storage	120GB SSD
Maximum number of carriers	License based
Physical size	2 HE (429x457x88 mm)
Network interface	RJ45
External 10MHz input	BNC

SkyMon HTS provides principal RF monitoring functionalities such as:

- Automated background monitoring
- Alarming
- Manual Operator initiated measurements
- Demodulation and decoding
- Carrier under carrier detection
- Blind scan
- Identification and characterization of interference signals



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