Ground Stations

DESCRIPTION

The ISIS small Ground station is a low cost, turnkey solution that is designed to communicate with satellites in low earth orbit (LEO) that operate in either Amateur frequency bands or commercial bands. The frequency bands covered are S-band, UHF and VHF. The ground station consists of an antenna and a 19" rack which houses the transceiver, rotor control and computer which make the system very compact. The transceiver makes use of a software defined radio (SDR), providing flexibility to swiftly reconfigure modulation/coding/data-rate on the run. Most of the commonly used modulation schemes and coding methods are already implemented and any customization requests can also be

SPECIFICATIONS

	S-band 3m	UHF/VHF	UHF/VHF/S-band
Receiver noise figure			
S-band:	0.9 dBi	-	0.9 dBi
VHF:	-	1.6 dBi	1.6 dBi
UHF:	-	2.0 dBi	2.0 dBi
Antenna gain			
S-band (3m):	35.4dBi (RHCP or LHCP)	-	31.5 dBic gain (RHCP or LHCP)
VHF:		12.3 dBic gain, switchable RHCP-LHCP	12.3 dBic gain, switchable RHCP-LHCP
UHF:	-	15.5 dBic gain, switchable RHCP-LHCP	15.5 dBic gain, switchable RHCP-LHCP
	-		
Downlink data rate:	14.4- 115.2kbps	1.2 - 9.6 kbps	1.2 - 9.6 kbps (VHF/UHF)
			14.4 - 115.2kbps (S-band)
Uplink data rate:		1.2 - 9.6 kbps	1.2 - 9.6 kbps (VHF/UHF)

Downlink modulation:	Raised-Cosine BPSK, AFSK, FSK, GMSK
Uplink modulation:	AFSK, FSK, BPSK (only VHF/UHF)
Az/EL rotor accuracy:	~ 0.1 deg
Power supply:	110V or 230V AC (selectable) 50/60Hz

25+ units installed

LEOPS training available

Operations training available

On-site installation

FEATURES

Instrumentation Rack containing:
- SDR based ISIS VHF/UHF transceiver and S-band receiver (in case of complete station)
- Software compatible to be used as Data Distribution Center (DDC) in ground station networks.
- Rotator Controller housed in a 19" industrial standard rack

Steerable Antenna System
- Azimuth and elevation rotators with speed up to 6°/sec.
- Hot-dip galvanized steel mounting mast
- UHF and VHF Yagi antennas (Amateur/commercial bands)
- Lightning protection system
- 20m of cable between 19"rack and antenna included in price

Standard Software
- Satellite tracking software pre-installed
- Autonomous tracking with scheduler
- Debian/GNU LINUX operating system pre-installed
- GUI to configure the SDR transceivers.
- LGS (Local Ground Station) software, including control interface to control the rotor

Compact setup
- The ground station equipment (except the antenna system) is fitted into a single 12-U 19" rack which allows the ground station to fit in almost any location.

Remote Operations
- It is possible to configure and control the ground station remotely through the internet.
- Autonomous tracking with scheduler

Complete ground station solution
- The ISIS ground station kit provides you with a complete solution if you are looking for a means to start communicating with Low-Earth Orbit satellites.

3m S-band Ground Station

VHF/UHF Ground Station

VHF/UHF/S-band 2m Ground Station

OPTIONS

- Site Survey and Onsite installation
- Onsite training of personnel or students
- Onsite servicing and maintenance
- Radome

S-band receiver

VHF/UHF transceiver

This document is subject to change without notice. Latest information is on www.isispace.nl

ISIS - Innovative Solutions In Space B.V.
Motorenweg23, 2623CR, Delft, The Netherlands
T: +31 152569018
info@isispace.nl
www.isispace.nl