

- **Bidirectional satcom signal + reference carrier transmission over optical fiber**
- **Indoor module located next to the modem, 1U rack**
- **Outdoor module close to the antenna, waterproof housing**



Indoor rack (front view)



Outdoor box (down view)



Non-contractual pictures

DESCRIPTION :

Equipment for optical fiber transmission of satcom signals.

Bidirectional transmission over singlemode fiber of:

Uplink transmission:

- Satcom signal, 950~2000MHz bandwidth
- Reference signal, 10~50MHz bandwidth
- AGC, DC value delivered by the modem

Downlink transmission:

- Satcom signal, 950~2000MHz bandwidth

Indoor equipment to be connected to satcom modem in a 19", 1U high, rack.

Outdoor equipment to be connected to antenna (LNB and BUC) in an IP65 housing to be assembled to a 60mm diameter mast.

Thanks to CWDM multiplexing technology the system transmits both signals over a single fiber

Transmission are based on **DFB isolated lasers** for low level noise and distortion. Reference and Uplink satcom signals are transmitted over separated wavelengths in order to prevent intermodulation's effect while maintaining a very low phase noise level.

A supervision access allows to set and monitor the system. Outdoor equipment can be remotely controlled through the fiber. The supervision of Indoor equipment gives access to outdoor equipment.

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FUNCTION

- Bidirectional Satcom signals optical transmission
- Transmission over a single fiber.
- Singlemode fiber.

KEY POINTS

- Suitable for L-Band Satcom signals
- Uplink signal transmission includes
 - a low phase noise reference carrier
 - an AGC signal delivered by the modem
- Indoor equipment in 19" 1U rack, with 230VAC main power supply access.
- Outdoor equipment in a waterproof box provided with a mast mounting device.
- Power supply access 230VAC for outdoor equipment. The equipment supplies the LNB through coaxial connection. An access is available for BUC supplying.
- Supervision access RS232 on both equipment. The indoor access allows supervision of outdoor equipment through the fiber link.
- Development manufacturing and services: Voiron (France)
- 1 year warranty

Technical specifications	FXHS-ACT-002 series
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Uplink signal specification (From Modem to BUC)

<ul style="list-style-type: none"> BIS signal 	MHz	1400 ~ 2000
Satcom signal bandwidth	dB	0 ±3 (level can adjusted by supervision)
Transmission gain with AGC on	dB	≤ 38
Noise figure with 500m fiber link	dB	≤ 1
Ripple absolute value	dBm	-15 dBm
Signal level (Max output outdoor transceiver)	dB	≤ 3
Slope Absolute value		
<ul style="list-style-type: none"> Pilot: 	MHz	10 ~ 50
Reference signal bandwidth	dB	> -1 (level can adjusted by supervision)
Transmission gain with AGC on	dB	≤ 30
Noise figure with 500m fiber link	dB	≤ 1
Ripple absolute value	dBm	-15 dBm
Signal level (Max output outdoor transceiver)		
<ul style="list-style-type: none"> AGC signal 	V	DC voltage delivered by Rx access of the modem
Type of signal	V	0~24
Input Range	V/V	0.5~23
Output level applied to the LNB Transmission		1±5%
Gain (within output range)		

Downlink signal specification (From LNB to Modem)

Signal bandwidth	MHz	900 ~ 1500
Transmission gain with optical AGC on	dB	0 ±3 (level can adjusted by supervision)
Absolute Ripple	dB	≤ 1
Signal level (Max output outdoor transceiver)	dBm	-15

Optical specification

Optical fiber		Singlemode G652, G654
Optical emitters		DFB Lasers with optical isolator
Optical receivers		PIN Photodiode
Uplink Wavelengths	nm	1310/1550
Downlink wavelength	nm	1530
Optical power per wavelength	dBm	4 ±2
Optical Budget	dB	0~6

Supervision

Local Access	RS232 on both Indoor and Outdoor equipment.
Remote access for Outdoor equipment	Indoor equipment access allows to control and set outdoor equipment through the fiber link.

Indicators

	Indoor equipment	Outdoor equipment
Power and Laser_on	Green: Indicates the equipment is activated	Green: Ion when the equipment is activated
RF-Uplink	Green: On when signal level is over threshold	Green: On when signal level is over threshold
RF-Downlink	Green: On when signal level is over threshold	Green: On when signal level is over threshold
Rx Optical	Green: On if received signal is over threshold	Green: On if received signal is over threshold
ALARM	Red: On if optical Tx or Rx failure	Red: On if optical Tx or Rx failure

Power supply

	Indoor equipment	Outdoor equipment
Main power supply	CE22 base + 2m long CE cord	Circular 4 pins waterproof connector
Optical connector	BOMAN with LC/APC	BOMAN with LC/APC
RF connectors	N 50Ω (x 2)	N 50Ω (x 2)
AGC signal	RF input connector (connected to Tx modem)	RF output connector (connected to BUC)
LNB power supply		RF Input connector
BUC power supply		Circular 7 pins waterproof connector
Supervision access	Sub-D 9 pins	3 pins of the above connector

Connectors

	Indoor equipment	Outdoor equipment
Main power supply	85~270VAC, 50~60Hz	85~270VAC, 50~60Hz
Max power consumption	25VA	140VA
Fuse	External 0.63A T	Internal 4A T
Power supply for BUC		48±2 VDC, 75W max
Power supply for LNB		24±1 VDC 5W max

Housing

	Indoor equipment	Outdoor equipment
Type of enclosure	Rack 19 inches	Waterproof case IP65
Dimensions (excluding plugs and accessories)	1Unit High (44mm), 230mm depth	300mm width x 200mm high x 120mm depth
Mounting	Standard front panel brackets	Device for mast mounting diam .60mm

Environment

	Indoor equipment	Outdoor equipment
Operating temperature range	0 ~ +40 °C	0 ~ +50 °C
Storage temperature range	- 40 ~ + 85 °C	- 40 ~ + 85 °C
Humidity	≤ 80%	≤ 90%
Operational altitude	≤ 3000m	≤ 3000m

REFERENCE PRODUCTS

FXHS25902S-ACT-002	Indoor equipment 1U Rack	FXHS4ZZ02S-ACT-002	Outdoor equipment IP65 case mast mountable
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In line with the company policy of continuous improvement, product specifications are subject to change without prior notice