*Pictures from Earth Quake Managment in Amatrice Italy 2016*

# *CommuniPack 2300*

# *1.2m Ka/Ku and X Band – Suitcase*

Mobile Hospital
ONG



Oil&Gas
Itinerant Contruction Site,



ARMY
(Mil Grade Type)



Civil Protection



*MADE IN ITALY*

## COMMUNIPACK 2300

The CommuniPack system is realized in lightweight materials with a robust construction. The system is composed by an equipment rack and the motorized auto-pointing antenna.
Only 10 minutes are necessary to deploy the system from the transport configuration to the communications trough the satellite.

Easy to install at the floor on several types of terrains.



The Automatic Pointing system is composed by Antenna Control Unit, Digital Beacon Receiver, Motor Drive Unit and other sensers. The systems are integrated into the antenna basement, no additional effort is required to the customer. The Equipment Rack is a 19" standard with 3 available rack units, and it is fully free for customer equipment.

The Antenna Basement on its own stabilizers, is inclined in respect of the terrain (horizontal plane) to be compliant with rain and the water on the floor.

The frame is IATA compliant with non-pressurized air cargo cabins. A breathing valve is foreseen.

The equipment box is polymer based plastic material, and it is compliant to the following standards: IP67, MILSPEC4150J, STANAG4280, ATA300.

The main reflector antenna is carbon fibre manufactured and sectored in 6 pieces. A bag is foreseen to store the 5 main reflector pieces (one pieces remain on the antenna structure). No tools are required to mount/dismount the antenna dish.



The connections required are very easy and fast to set up for the user: one cable is the power line and another is the Ethernet connection. No additional equipment or tools are necessary.

The ACU-Mini system runs the same step track algorithm of Elital major systems. The pointing and tracking system heritage, allow a successful pointing rate of 99.68% (average of logs of based on 20 operation ACUs in last 5 years).

A GPS sensor, a Fluxgate and a tilting sensors platform is built-in in the antenna structure, and the data outcome is the input for the ACU to compute the satellite pointing polar coordinates (ephemeris).

The ACU mini, has built-in the worldwide magnetic declination map in order to minimize the satellite searching time.



The ACU Web interface, with the built-in web server, is Linux based system and this allow to connect with the ACU from any PC or Tablet. By the Web interface is possible to configure and setup the high-level parameter of the ACU.

The Graphic User Interface software, runs on Windows operative system computer, do not needs any installation (to avoid administrator account) and it is compatible with Windows OS from Win XP to the latest versions. The software can be downloaded at any time, from the ACU configuration page.

The local control panel, allow to manage the antenna platform with a very easy to use user interface, the remote and local command panel on windows pc or tablet, is available in wired and wireless connection.

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**Deploying Time**

Only 10 minutes are necessary to deploy the system form transport configuration.

NOTA:
About the Power amplifier, Elital suggest to contact us to estimate the available volume and RF power. Following are reported the RF power BUCs mountable on board:
Ka Band:     5W BUC mechanical enclosure,
Ku band:     20W BUC mechanical enclosure,



## MOTORIZATION

For the mechanism, Elital use high grade engines and gearboxes only. The Harmonic Drive$^{TM}$ gearboxes allow a high precision pointing without backlash. The Motor are brushless without maintenance. Absolute encoders are used to measure the antenna position in closed loop configuration for highest reliability.

## MAIN REFLECTOR

The main reflector is available in 0.98m (baseline) and 1.2m (optional) diameter. The antenna is compliant to Intelsat and Eutelsat requirements. Carbon Fibre main reflector is mounted by a self-locking device and no tools are required.
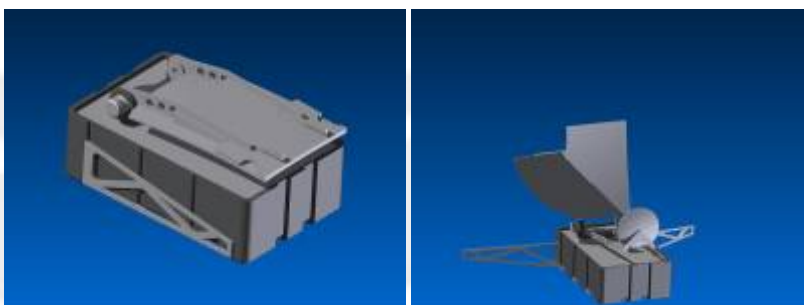


## POINING AND TRACKING

The signal strength level is measured by the Elital manufactured Digital Tracking Receiver mod. 190-00141-0. On the graphic user interface on PC or Tablet is reported the equipment parameter and the signal level. The Digital Beacon Receiver is a high-end system with state of the art feature. It is completely digital with a FFT feature to acquire and manage the signal.

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## INTERFACES

On the back side of the system are available:
- Power inlet connection,
- Ethernet Connection,
- Local User Interface

Internally, between the equipment rack and the antenna platform are available:
- Power outlet connection,
- Ethernet Connection,
- Rx connector (F Type)
- Tx connector (F Type)



### RF

The CommuniPack system is a tri-band compliant system. The Baseline composition is Ka Band (Civil and Military)..
Are available the Ku band front end, and the X band for military communication.
It is compliant with Low Cost Eutelsat TooWay communication system.

## REMOTE CONTROL SOFTWARE

It's available as an option the capability to remotely control the system. The ACU Graphic User Interface allow the Operators to control the system. In addition, it's possible for Elital to support the operator needs an help (internet connection is required).
The wireless connection is also suitable to control the ACU and other systems mount on board.
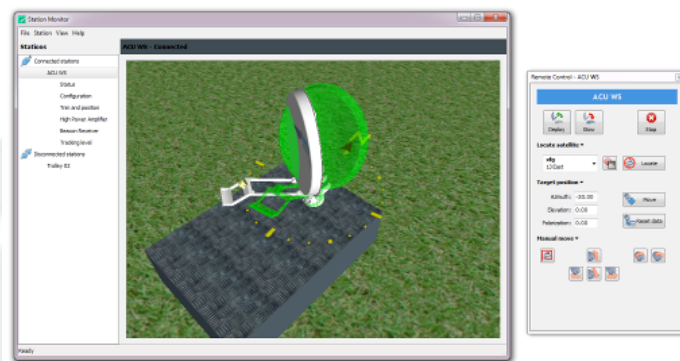


### IN THE BOX

- Equipment Rack case;
- Antenna Platform with Antenna Sectors
- Antenna sectors bag;
- Rigid Cover for antenna platform;
- Power and Ethernet cord (3m).

### SYSTEM COMPOSITION

Trolley Antenna:
Elevation over Azimuth antenna Platform,
Servomotors Receiver)
Stabilizers

| Antenna Optics | Ka Band (baseline) |
| | Ku Band (option 1) |
| | X Band (option 2) |
| LNB | Ka Band (baseline) |
| | Ku Band (option 1) |
| | X Band (option 2) |

Digital Controls:
    Antenna Control Unit
    Motor Drive Unit
    Digital Beacon Receiver
WiFi

GPS
Trim sensors
Fluxgate
ACU GUI Client (Software)

5 Main Dish sensors,

3RU Rack Case
User Manual
Power Cord IEC– 3m
Ethernet Cord - 3m

User Manual

Note: Communication equipment are not included

## ANTENNA PERFORMANCE

Antenna: Type Gregorian offset segmented
Sidelobe: performance <= 35 dB CrossPol
Antenna Aperture: 1.00m
Polarization: Linear
Rx Frequency: 3 bands available, X, Ku & Ka Bands.
G/T 19.0 dB/K @ 11.0 GHz 20º elevation
Tx Frequency: 3 Bands available, X, Ku & Ka Bands
EIRP Capability Up to 51 dBW
Optional: 54dBW
**Motorized Antenna** Pointing through GPS, Inbuilt electronic
Fluxgate and Trim sensors,
Azimuth Range: -80° + 80º motorized (160°),
Elevation Range: 8°-90° motorized,
Polarization Range 180° manual
Transmit gain at midband 38.4 dBi (Ku band)
Receive gain at midband 38.2 dBi (Ku band)

## OPERATIONAL CONDITIONS

Operational Temperature -20ºC to +45º C
Operational Humidity 90% non-condensing
Operational Wind Speed Max 12 m/s,
Operational Altitude Max 3,000 m (9,850 ft)
Rainfall Max 90 mm rain per hour
Storage Temperature -40ºC to +70ºC (-40ºF to +158ºF)
Sealing Class IP65, including Power Supply Unit
Deployment and Set-up 5 < 10 minutes
Standard IP65

## TRACKING

Built-in Digital Beacon Receiver,
10MHz int. Reference
LO Stability ±3 ppm
Noise Figure 0.6 dB typical at 25º C (77º F)
Beacon Receiver Inbuilt
40Khz Tracking range
L-Band Input
Voltage 12-24Vdc

## MECHANICS

Physical Size 85x55x45 cm  (max) stowed
Weight about
     Antenna Platform    40 + 35 kg
     Equipment Rack    range 12 to 30Kg max
Sealing Class IP67 Storage/Transport Condition

## POWER SUPPLY UNIT

AC Supply 100-240 V, AC 50Hz,
Power: 800 Wpeak - 200W typ.

## INTERFACES and CABLINGS

**Rear Panel Connectors:**
Local Wired Ethernet Connection

**Connection to the Rack Case:**
L-Band TX F Type Connector,
L-Band RX F Type Connector
TCP/IP LAN 10/100 base-T Ethernet
AC Supply 100-240 V, AC 50Hz,

## Options

Second Bag for modems, reflector sectors, other
accessories.
Third Bag (or  back pack) for UPS power supply or
accessories.
Ku, Ka and X bands are fast and easy to change.
Compliant with TooWay, iDirect, D-Star, Comtech,
Advantech and other modems manufacturer.

## BUC Requirements

BUC type: Minibuc
10MHz Ext. Reference
L Band Input
Voltage DC 12-24Vdc or AC 100-240 V, 50Hz,

## LNB Requirements

LO Stability ±3 ppm
Noise Figure 0.8 dB typical at 25º C (77º F)
L band output
Voltage 12-24Vdc