CIRAS-X6

Central Integrated Radome Antenna System

6-way MaxRC COFDM Receiver

Features:

- Six input maximal ratio combining diversity receiver
- 6 Vertical polarized antennas with 14 dBi per panel gain for 360 receive
- 2 Uplook antennas (optional)
- Integrated 2:6 way diversity COFDM receiver
- Adaptive digital processing
- Rugged polycarbonate radome (IP66)
- Power Over IP
- eLink dedicated controller decoder
- IP Streaming of MPEG TS
- Web GUI

Options

- AES Decryption (BCRYPT)
- Internal GPS with mapping
- DR3 Controller decoder
- Cube monitor decoder
- VNet video management

Accessories:

- 120/240VAC power supply
- Power Integrated Ethernet Cable

Applications

- Airborne down link
- Central receive
- Command vehicle receive
- Surveillance, firefighting, SWAT, public safety, and homeland security

A completely new concept in central receive systems, the IMT Central Integrated Radome System x6 receiver (CIRAS-x6) combines a six-way high gain antenna system with the latest diversity receiver technology, all in one, easy to install package. It offers cutting edge RF performance in a durable IP66 rated outdoor housing. It is particularly well suited to helicopter video downlink and electronic newsgathering operations, as well as any application where ease of operation and reliable reception are required.

The IMT CIRAS system was designed to automatically optimize the receive signal at all times, and virtually eliminate all human intervention. In contrast to the old single, highly directional antenna, the CIRAS employs multiple antenna elements that are arranged to cover 360°of azimuth in overlapping sectors. The key to IMT's success is improving operation efficiency in signal acquisition. IMT focuses its approach on the integration and optimization of the antenna design, use of adaptive digital signal processing (ADSP) and maximal ratio combining (MRC) techniques. In the past, these three areas have been treated and controlled independently. By combining and optimizing these areas, IMT is able to provide a new class of fully autonomous Central Receiving Systems that provide significant value and efficiency to the industry.

The IMT CIRAS-X6 features a compact, lightweight rugged IP rated chassis making it equally suited to rooftop, tower, vehicle or portable applications. The CIRAS-X6 uses Ethernet for control and power as well as providing MPEG Video Over IP transport Stream, eliminating the need for expensive RF and control cables. CIRAS-X6 sends the MPEG Transport Stream by Ethernet cable to a local decoder, video management system and/or a network distribution center. Smaller, less expensive cables minimizes installation costs. Interference from strong signals from nearby transmitters getting into RF cables is eliminated. The small radome and light weight make it the perfect receiver to use with pneumatic masts on emergency vehicles.

All CIRAS-x6 functions are monitored and controlled through an intuitive web GUI. No standalone control system is required. Simply select the channel, and the CIRAS-x6 automatically detects the bandwidth, modulation, spectrum and encryption keys. CIRAS-x6 is just one part of IMT's eLink ecosystem. eLink coordinates and combines reception from multiple receivers. As transmitter travels beyond the range of one receiver, reception is handed off to another. eLink silently and transparently switches to the new receiver without any video glitches.

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Central Integrated Radome 6-way MaxRC COFDM Receiver

RF Performance:

Base Part Number	Frequency (GHz)	Power Consumption (W)
18/23CIRAS-x6	1.750 - 2.400	20
23CIRAS-x6	2.025 - 2.484	20
47CIRAS-x6	4.400 - 5.000	25
65CIRAS-x6	6.425 - 6.525	25
70CIRAS-x6	6.425 - 7.150	25

Not all bands may have been tested for FCC compliance; please consult the factory.

Tuning step size: .....250 KHz step size standard
.....100 KHz step size optional
Frequency stability: .....± 10ppm

Demodulation Modes

auto detected within .....modulation format and Bandwidth

Modulation 1

Modulation Formats:.....COFDM (DVB-T)
DVB-T .....Support all GI, CR, and Modulation
Carriers:.....2K
Bandwidth:.....6 MHz, 7 MHz, and 8 MHz
.....Auto-detected

Modulation 2

Modulation Formats:.....COFDM
Carriers:.....2K
Constellation: .....QPSK
Code Rate:.....1/2, 3/4
Guard Interval: 1/32
Bandwidth:.....2.5 and 1.25MHz (SR Scaled DVB-T)
.....Auto-detected

Modulation 3 (Future Option)

Modulation Formats:.....COFDM (DVB-T2)
Bandwidth:.....1.7MHz - 8 MHz

Diversity

Channels.....6 channel Maximum Ratio Combining

System

Decryption (optional).....AES 128/256 bit BCRYPT 1/2
.....(FIPS PUB 197)
Ethernet .....Stream TSoIP UDP/RTP
.....RTSP
.....Unicast and multicast
Control.....WEB control
User Data: .....Serial over Ethernet (UDP)

Power Requirements

Power Input:.....Power on Ethernet spare lines
.....Pins 4/5 DC+
.....Pins 7/8 Ground
Power Input.....Fiber Option
.....Two pin Amphenol
.....DC: +9 to +32
Power consumption.....See Table

Environmental

Temperature range

Full specification:.....–30° to +60°C Ambient
Storage:.....–40° to +80°C
Humidity:.....0 to 95% non-condensing

Physical Characteristics (unit)

Size .....13.7"H x 11.7"D
Weight:..... 20lbs
Ingress (by design).....IP66
Connectors.....RJ-45 (Ethernet)
.....Fiber Optional

Standard Accessories

- *Power Supply*
- *Mounting Kit*
- *Ethernet Test Cable*
- *Ethernet Lighting Protection Box*

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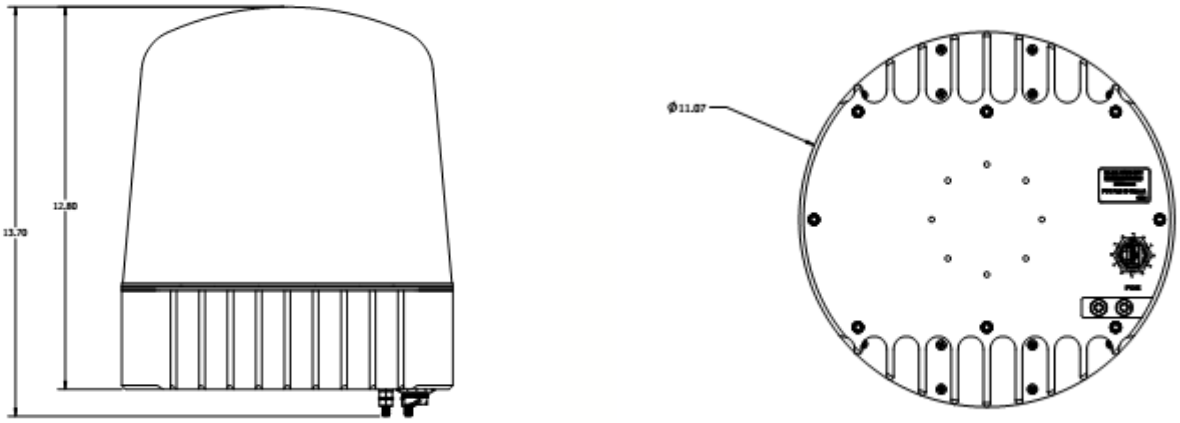
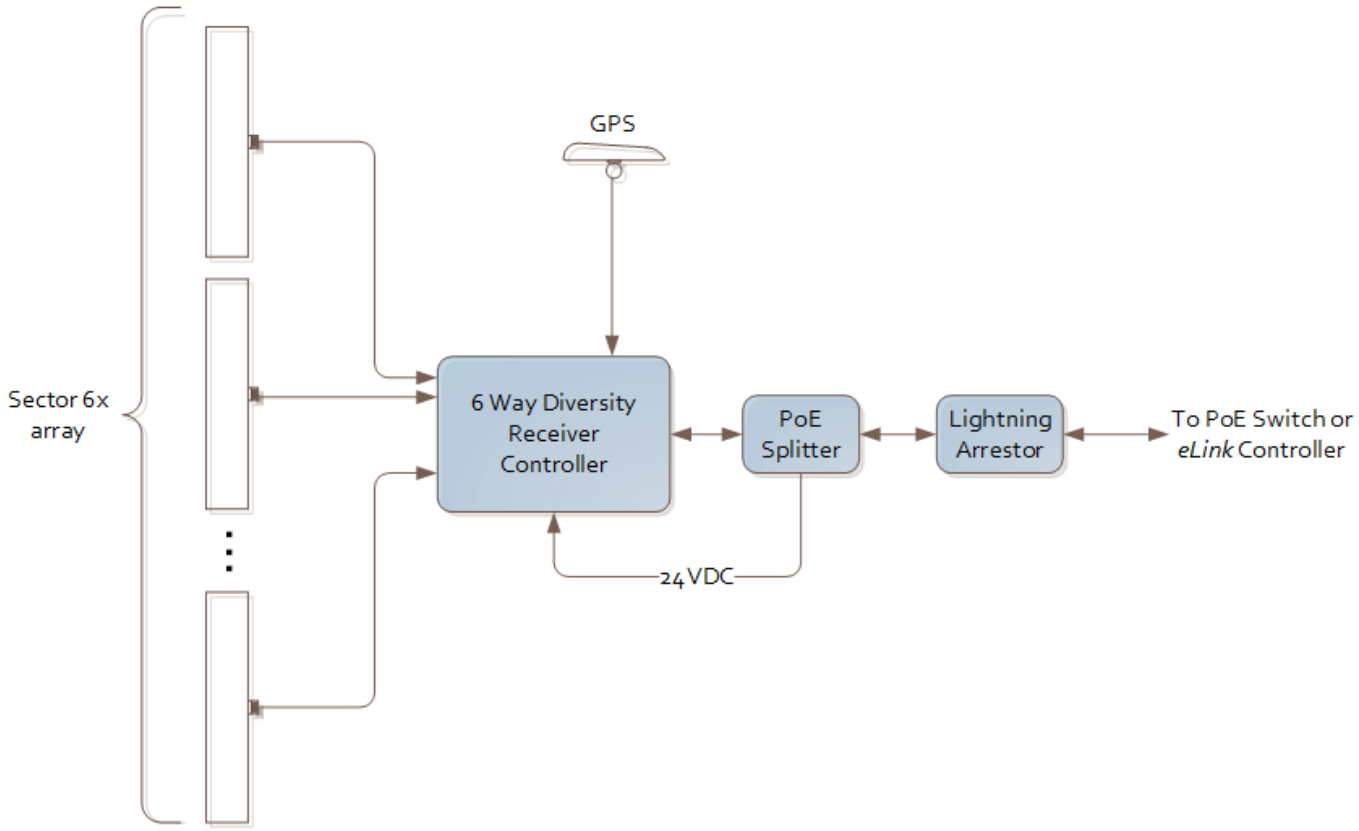
Product Outline:



Product Block Diagram:



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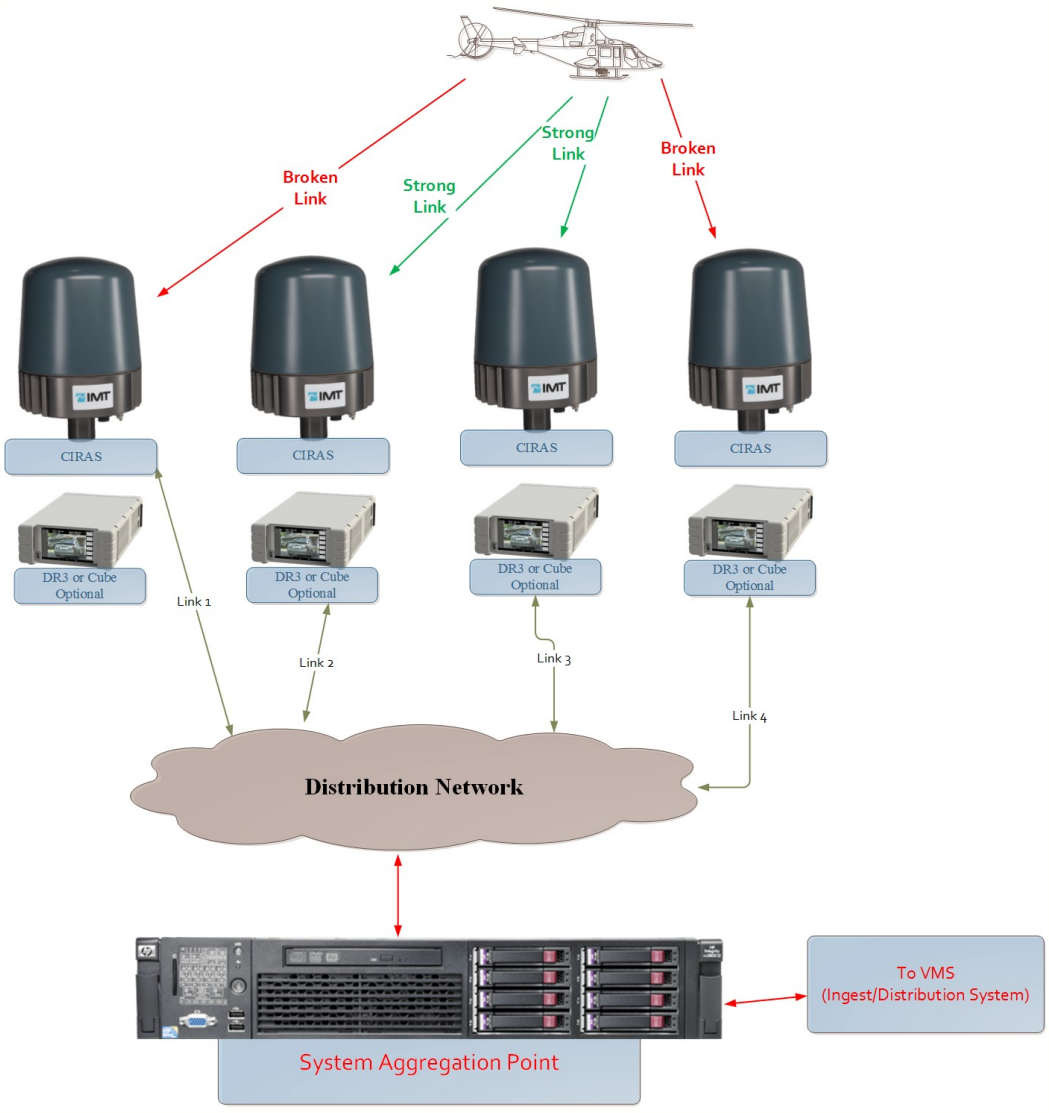
IMT eLink Ecosystem

eLink:

The IMT eLink is an ecosystem allowing coordination of receive systems components and transmitters. When using Ethernet/IP interconnects, the Diversity Receiver Controller or IMT IP Aggregator takes advantage of eLink technology, coordinating all the remote receivers. Statistics are consolidated and displayed on the OSD, and frequency synchronization is preformed through a single interface. This coordination is automatically performed in the background, simplifying the user experience. The IP Aggregator acts as the central controller and transport stream aggregator for the downlink system components. The ecosystem includes:

- Packet diversity over IP
- Control and coordination of remote receivers
- Retiming and output coordination of aggregate transport stream
- Local GUI control and real time status, statistics and alarms
- Enhanced real time web pages
- Web page configuration

System Diagram:



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Accessory Sheet

CIRAS

High performance Options and Accessories

Integrated GPS Antenna

Frequency L1, 1575.42MHz
GPS Protocol .....NMEA 0183
Acquisition Rate.....1s Hot, 42s Cold
Sensitivity .....-159dBm

DR3-Con (Diversity 3 Controller)

Local Control, Decode and eLink

Decoder .....H.264 High Profile
.....MPEG 2
Video Output .....HDMI
Control.....Touch Screen GUI
.....Webpage
Streaming .....RTSP Server
.....Unicast, Multicast
.....Manual
Input .....Transport Stream via RJ45

Cube Control

Local Decoder Monitor

Decoder .....H.264 High Profile
.....MPEG 2
Video Output .....HDMI
Input .....Transport Stream via RJ45