



 **BUPAT**<sup>®</sup>

[www.bupatltd.com](http://www.bupatltd.com)





## BUPAT 40 Yıllık Tecrübe ile Geleceğe Köprü

1983 yılında kurulan **BUPAT**, 40 yıllık köklü geçmişi ve yenilikçi vizyonuyla, üretici ve müşteriler arasında güçlü bir çözüm ortağı olarak sektördeki dönüşüme yön vermeye devam ediyor. Güvenilir iş ortaklığı ve ileri teknoloji ürünleriyle, bugünün ihtiyaçlarına yanıt verirken geleceğin projelerine ilham kaynağı oluyoruz.

## Yeni Logomuz: Güven ve Yeniliğin Simgesi

Modern tasarımı ve dinamik yapısıyla yeni logomuz, **BUPAT**'ın güvenilirliğini, yenilikçi yaklaşımını ve sektörlerdeki köprü rolünü vurguluyor.

## Sadece Tedarik Değil, Çözümler ve Bilgi Paylaşımı

Bu katalog, yalnızca bir ürün listesi değil; 40 yıllık birikimimizin ve geleceğe yönelik vizyonumuzun bir manifestosudur.

**BUPAT** olarak, her yıl düzenlediğimiz Tech Day etkinlikleriyle mühendisleri RF teknolojileri ve uçuş kontrol sistemleri gibi en yeni teknolojilerle buluşturuyoruz. Web sitemiz ve LinkedIn sayfamızda duyurulan bu etkinliklerde, sektörel bilgi paylaşımını en üst seviyeye taşıyoruz.

Ayrıca, temsil ettiğimiz global firmalardan uzmanların Türkiye ziyaretleriyle, ürünlerin en etkili ve verimli kullanımına yönelik destek sağlayarak müşterilerimizin başarısına katkıda bulunuyoruz.

## Birlikte Geleceği Şekillendirelim

Yeni kataloğumuz, Türkiye'nin küresel pazardaki gücünü artırmayı ve iş ortaklarımız için daha fazla değer yaratmayı hedefleyen bir yol haritasıdır. Ürünlerimizle ilgili daha fazla bilgi almak ve size özel çözümler keşfetmek için tecrübeli ekibimiz her zaman sizinle iletişimde olmaya hazır.

**Serdar ERKOCA**  
Kurucu / Onursal Başkan

## BUPAT EKOSİSTEMİ





AEROSPACE INSTRUMENTATION SOLUTIONS  
DATA ACQUISITION SYSTEMS  
ETHERNET SWITCHES  
RECORDERS & HIGH DEFINITION CAMERAS  
AXON DATA ACQUISITION UNIT

FLIGHT TERMINATION SYSTEMS  
RF PRODUCTS  
KAM-500 DATA ACQUISITION UNIT  
AIR DATA COMPUTERS  
NETWORK SWITCHES

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4-10



ANTENNAS FOR DEFENCE, SECURITY, SATELLITE & COMMERCIAL  
DIRECTIONAL ANTENNAS  
OMNI-DIRECTIONAL ANTENNAS  
LINK 16 ANTENNAS  
ANTENNAS FOR COUNTERING THE UNLAWFUL USE OF DRONES

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SEMICONDUCTORS  
ISOLATOR, CIRCULATOR AND LOAD  
COUPLER AND DIVIDER  
FILTERS AND WAVEGUIDE  
SYSTEMS

PAGE  
18-20



ACTIVE OPTICS  
ANTENNAS  
MULTIPIN AEROSPACE CONNECTORS  
RF CABLE ASSEMBLY BUILDER  
OPTICAL CABLE ASSEMBLIES  
OPTICAL CONNECTORS

OUTDOOR CONNECTORS  
RF & MICROWAVE SWITCHES  
RF CABLE ASSEMBLIES  
RF COAXIAL CONNECTORS  
RF MICROWAVE COMPONENTS  
SPACE QUALIFIED COMPONENTS

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STFOC OPTICAL CABLE  
BUOYANT CABLE  
AVNOC AVIONIC CABLE  
RADIATION HARDENED OPTICAL CABLE  
HYBRID CABLESMICROTETHERS

HIGH STRENGTH CABLE  
PHASE STABILIZED STFOCTM  
SPECIALTY COPPER  
STFOCTM PATCHCORDS

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EMC/RFID/TEMPEST PRODUCTS  
EMI GASKETS  
HONEYCOMBS  
CONDUCTIVE ADHESIVES AND SEALANTS

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WET TANTULUM CAPACITORS  
POWER DENSE HYBRID CAPACITORS  
PLANAR EMBEDDED RESISTORS  
COMBINED RESISTOR/CAPACITOR

MULTILAYER POLYMER FILM CAPACITORS  
MULTILAYER CERAMIC CAPACITORS  
HIGH FREQUENCY CERAMIC CAPACITORS  
THIN-FILM EMBEDDED RESISTORS

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36-39



GRAYHILL

TOUCH ENCODER  
HALL EFFECT ENCODERS & JOYSTICKS  
CANBUS, KEYPADS, JOYSTICKS, AND  
MMI CONTROLLERS  
CANBUS DISPLAYS

ROTARY SWITCHES  
MECHANICAL ENCODERS  
OPTICAL/HALL EFFECT ENCODERS  
PUSHBUTTONS  
KEYPADS

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INDICATOR LIGHTS  
BASED LED'S  
LED-MODULES  
LED & ACCESSORIES

ALUMINUM BAR LED STRIPLIGHT  
INDUSTRIAL LED APPLICATIONS  
CUSTOM SOLUTIONS

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NON HIGH-G RATED HIGH SPEED CAMERAS  
HIGH-G RATED HIGH SPEED CAMERAS  
DEFENSE AND AIRBORNE HIGH SPEED CAMERAS  
HIGH SPEED STREAMING CAMERAS & SYSTEMS

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VPX SOLUTIONS  
SOSA-ALIGNED SOLUTIONS  
3U VPX SBC - RUGGED SYSTEM  
OTHER GPGPU SOLUTIONS

NVIDIA-BASED XMC SOLUTIONS  
RUGGED VIDEO ENCODER & SPLITTER  
RUGGED VIDEO CONVERTERS  
RADAR PROCESSING

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CUSTOM PLANAR TRANSFORMERS

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QUARTZ ACCELEROMETER  
FIBER OPTIC GYROSCOPE  
MEMS SENSORS  
TEST MEASUREMENT SENSOR  
INERTIAL MEASUREMENT UNITS

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***CURTISS -  
WRIGHT***

**Seamless Solutions for**

# **Flight Data Acquisition and Control**

**From Flight Termination to Testing and Data Collection  
Performance You Can Trust**



## AEROSPACE INSTRUMENTATION SOLUTIONS

### Space Instrumentation

- COTS Data Acquisition
- Radiation Tolerant COTS Data Acquisition
- Network Switches

### Flight Test

- Prototype Testing
- Production Testing
- Flight Line Checkout

### Flight Safety

- Flight Termination
- Missile Performance Testing
- Portable Testers

### Telemetry

- Secure Data/Video Transmission
- Ground Station Reception

### System Monitoring

- Predictive Maintenance
- Prognostic Health Monitoring

## DATA ACQUISITION SYSTEMS



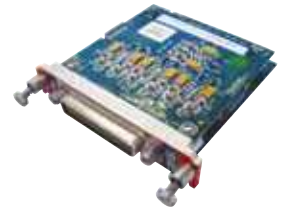
AXON  
DATA ACQUISITION UNIT



KAM-500  
DATA ACQUISITION UNIT



NETWORK SWITCH



SWITCH MODULE

## NETWORK SWITCHES

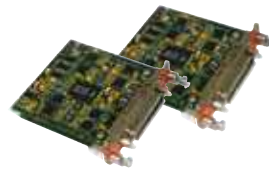
## RECORDERS



ADSR-4003F-3



SSR-CHS AND MODULES



FORTRESS

## HIGH DEFINITION CAMERAS



HDC-330-2

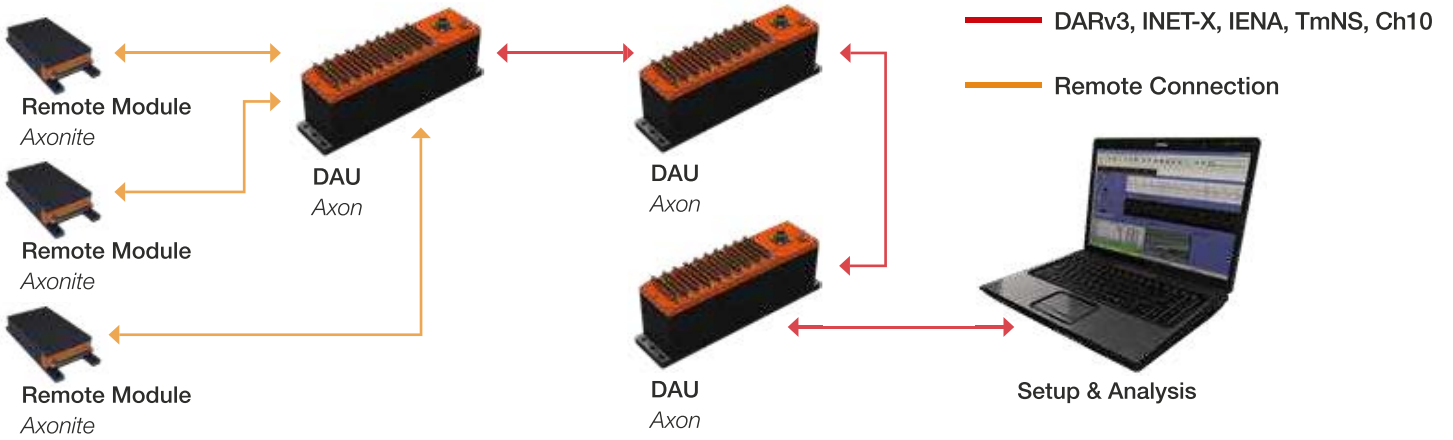


HDC-430-1



HDC-350-1

## AXON DATA ACQUISITION UNIT



PRODUCT IMAGE	PRODUCT NAME	DESCRIPTION	TYPE
	<b>AXN/CHS</b>	Axon Chassis - 3/6/9/16 User-Slots	Chassis
	<b>AXN/BCU/402/C</b>	Axon Backplane Controller	Backplane Controller
	<b>AXN/ADC</b>	ADC Module - 8/16/24 Analog Channels	ADC Module
	<b>AXN/ADC/408 3 Phase Power Monitor</b>	3-Phase Power Monitor Module - 6 Analog Channels	3 Phase Power Monitor
	<b>AXN/TCG/401/B</b>	Time-code Generator	Time code/Voice module
	<b>AXN/TDC/401</b>	Thermocouple ADC Module - 15 Channels	ADC Module
	<b>AXN/ENC</b>	Axon IRIG-106 PCM Encoder	PCM Encoder, IRIG 106 Chapter 4 or Chapter 7
	<b>AXN/ABM/401</b>	24 Channel ARINC-429 Bus Monitor/Parser	Bus monitor
	<b>AXN/DSI</b>	24 Channel Discrete Input	Discrete/Counter Module
	<b>AXN/UBM/401</b>	16 Channel Serial Bus Parser/Parser	Bus Parser/Parser
	<b>AXN/ITE/01U</b>	Remote Housing for Axon Module	Remote Housing

PRODUCT IMAGE	PRODUCT NAME	DESCRIPTION	TYPE
	<b>AXN/EXT/401</b>	Axon Extender Card	Extender Card
	<b>AXN/MBM</b>	MIL-STD-1553 Bus Monitor Parser/Parser	Bus Parser/Parser
	<b>AXN/ICP</b>	Accelerometer ADC with FFT and TEDS support, 12 ch at 25 ksp/s or 4 ch at 100 ksp/s	ADC Module
	<b>AXN/HSS/401</b>	High-speed Serial Interface	Synchronous Serial Module
	<b>AXN/MEM/401</b>	Axon PCAP Recorder Module	Axon PCAP Recorder Module
	<b>AXN/DTU/001</b>	AXN/MEM/401 Data Transfer Unit	SSD Dock
	<b>AXN/CBM</b>	CAN bus monitor parser/Parser	Bus Monitor Parser/Parser
	<b>AXN/TCG/402</b>	N/A	Time-code generator with GNSS/IRIG input
	<b>AXN/PCM/401</b>	IRIG-106 PCM decoder/merger and packetizer (40 Mbps) - 2ch	Dual PCM decommutator
	<b>AXP/ADC/401 Axon Pico</b>	Flexible ADC	Stand-alone Data Acquisition Unit
	<b>Axon Heat Sinks</b>	Mounted heat sink	Heat Sink

## AIR DATA COMPUTERS



Enhanced Software Configurable Air Data Unit (ESCADU) • Air Data Computer Module (ADCM) • Computer Controlled Air Data Test Set (CCADTS)

## FLIGHT TERMINATION SYSTEMS



FLIGHT TERMINATION RECEIVER



FLIGHT TERMINATION RECEIVER TESTER



FINAL ACCEPTANCE TESTING

## RF PRODUCTS



AIRBORNE RECEIVER



TRANSCIVER

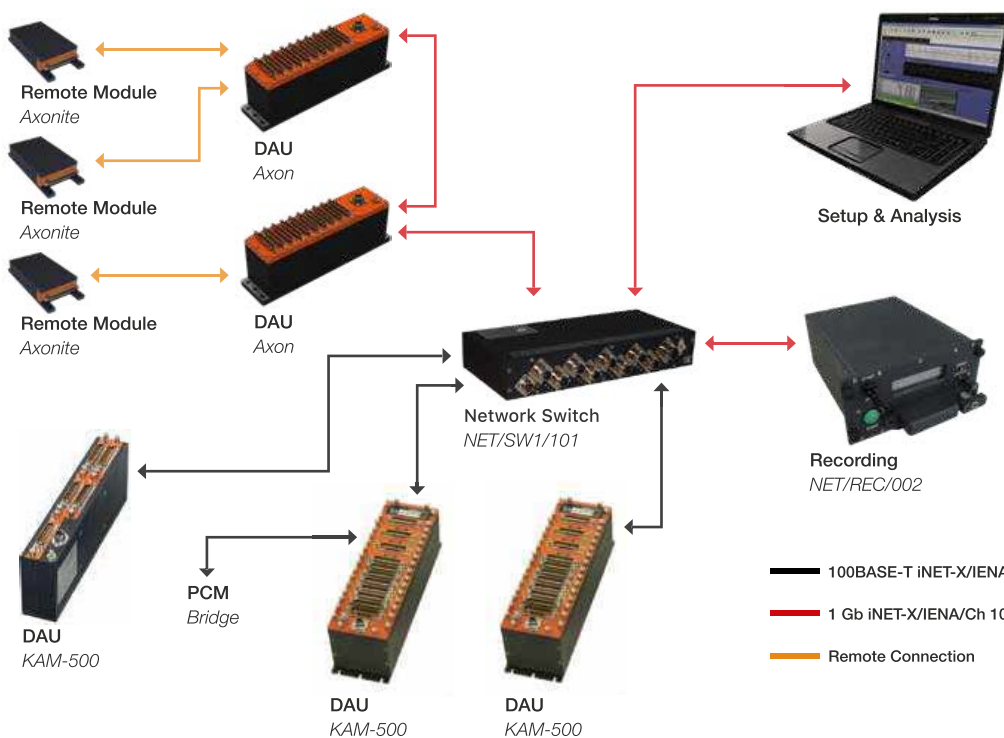


TRANSPONDERS

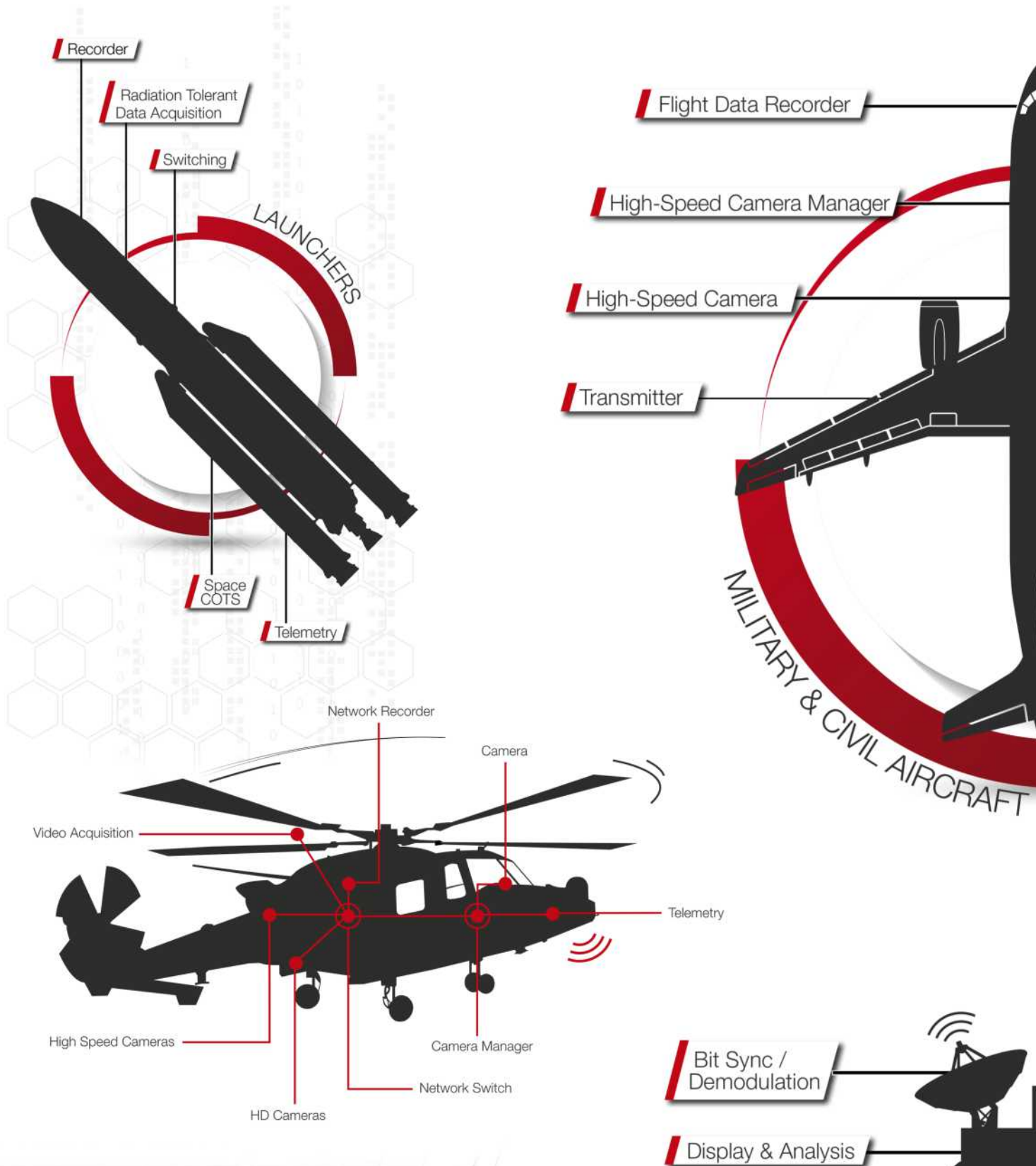


TRANSMITTERS

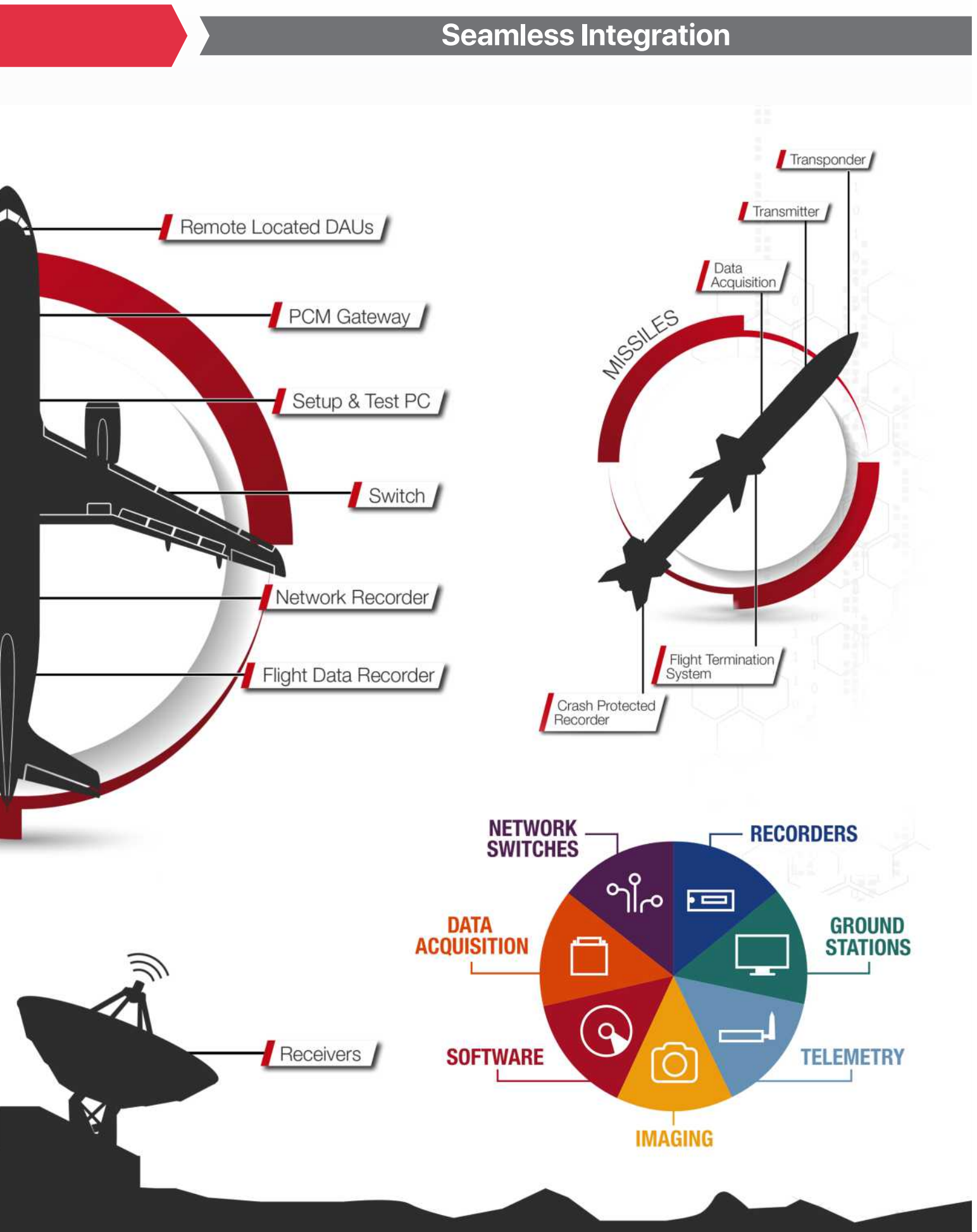
## ACRA KAM-500 DATA ACQUISITION UNIT



# TOTAL DATA ACQUISITION SYSTEM SOLUTIONS



## Seamless Integration



## NETWORK SWITCHES

### Gigabit Managed Network Switches



5-Port Switch

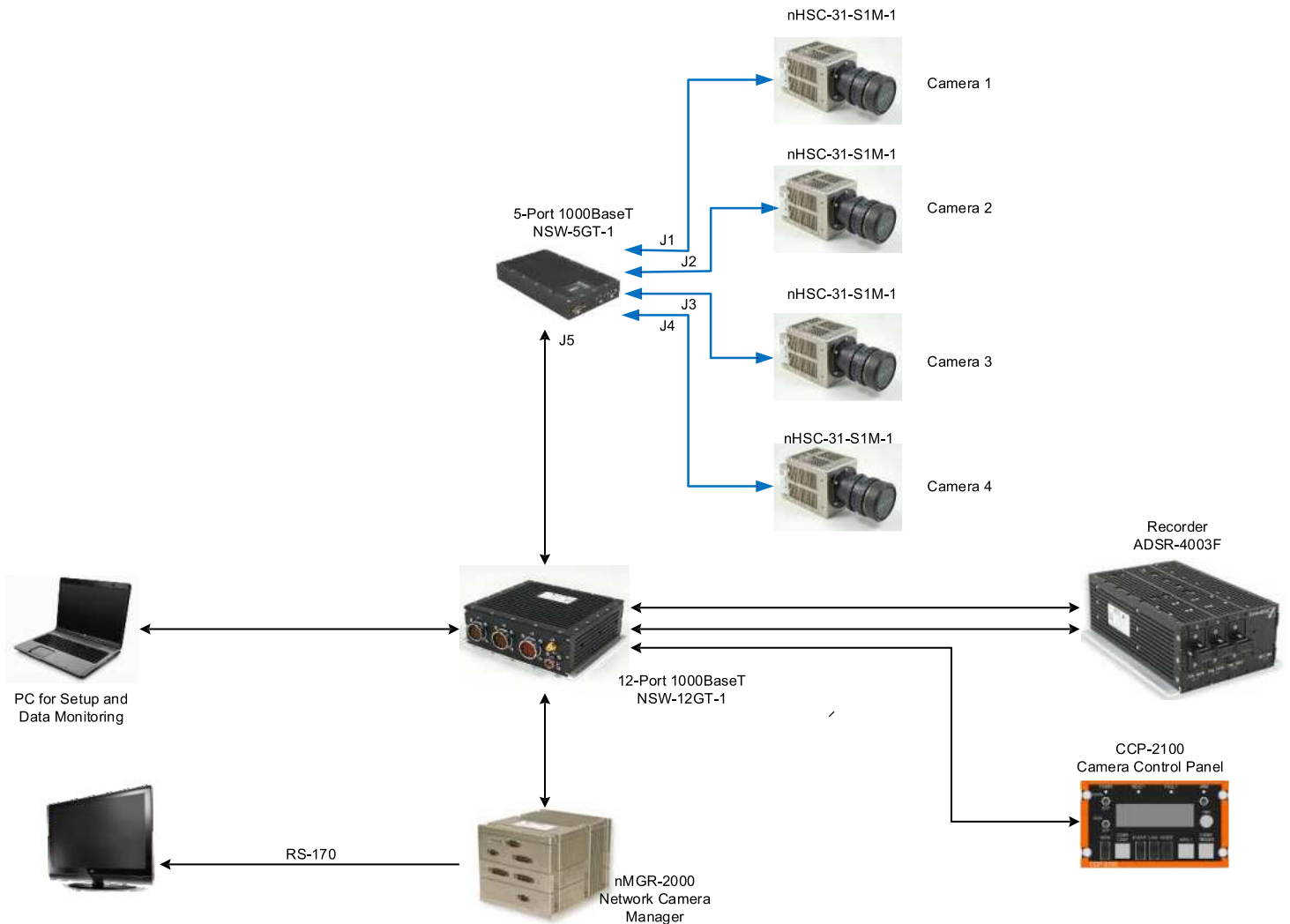


12-Port Switch



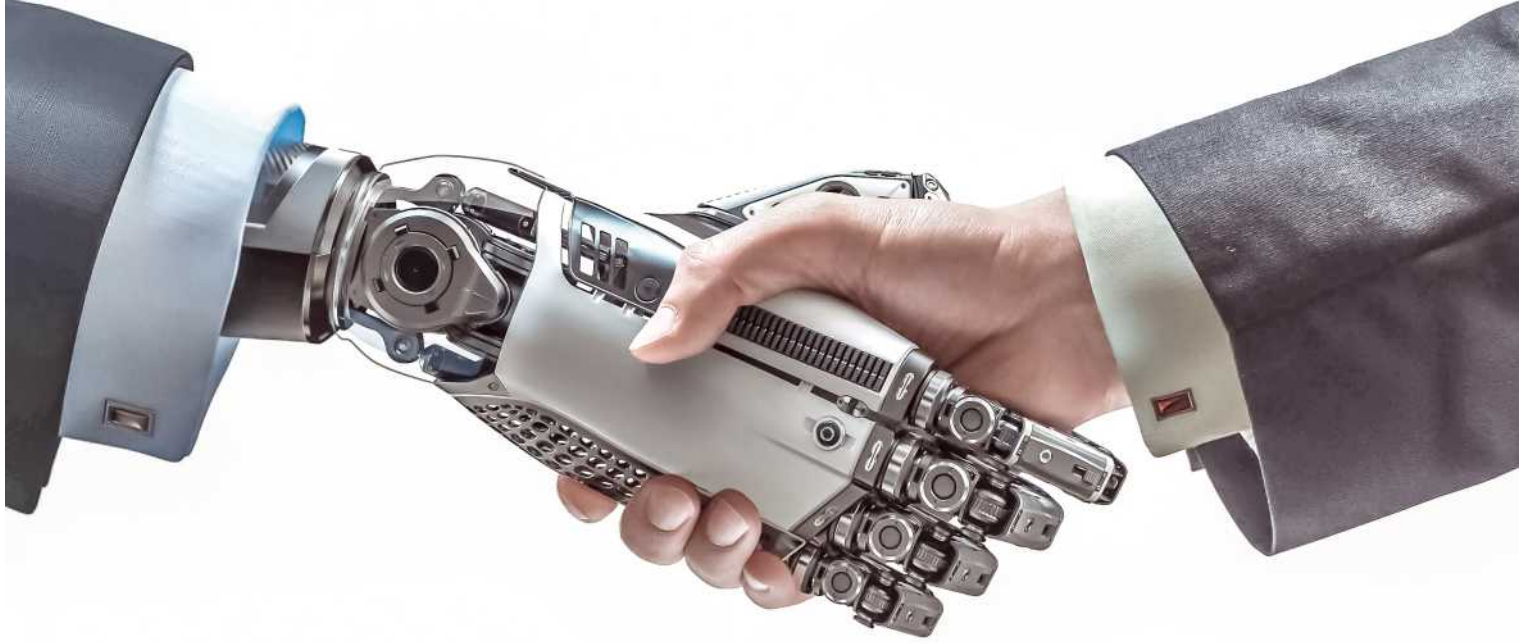
16-Port Switch  
(12-Port Electrical with 4-Port Optical)

### Unmanaged Network Switches





**ELECTRONICS  
VALLEY**



Havacılık, Uzay ve Savunma Teknolojilerinde  
**Küresel İletişim ve  
İş Birliği Platformu**

Teknoloji buluşmaları için bizi takip edin.





# Innovating Antenna Solutions for the Aerospace and Defense Industries

Pioneering Connectivity with High-Performance Antennas for Any Mission, Anywhere



## LINK 16 ANTENNAS

The Link 16 protocol uses frequency bands that cover 960-1215MHz and all antennas in this range are rugged, designed for extreme weather and temperature and have been used in battlefield conditions without affecting the performance or inhibiting mission requirements.

Link 16 systems can be incorporated into MIDS, JTRS and JTIDS systems for high data rate transmission where multiple bands will be in use.

Chelton offer the following in our Link 16 suite:

- ✓ Omni Antennas for Ground, Vehicle and Marine applications
- ✓ Sector Antennas
- ✓ Blade Antennas
- ✓ Bandpass and Bandstop Filters
- ✓ Accessories including mast deployment kits, bespoke vehicle mounts, bags and cases.





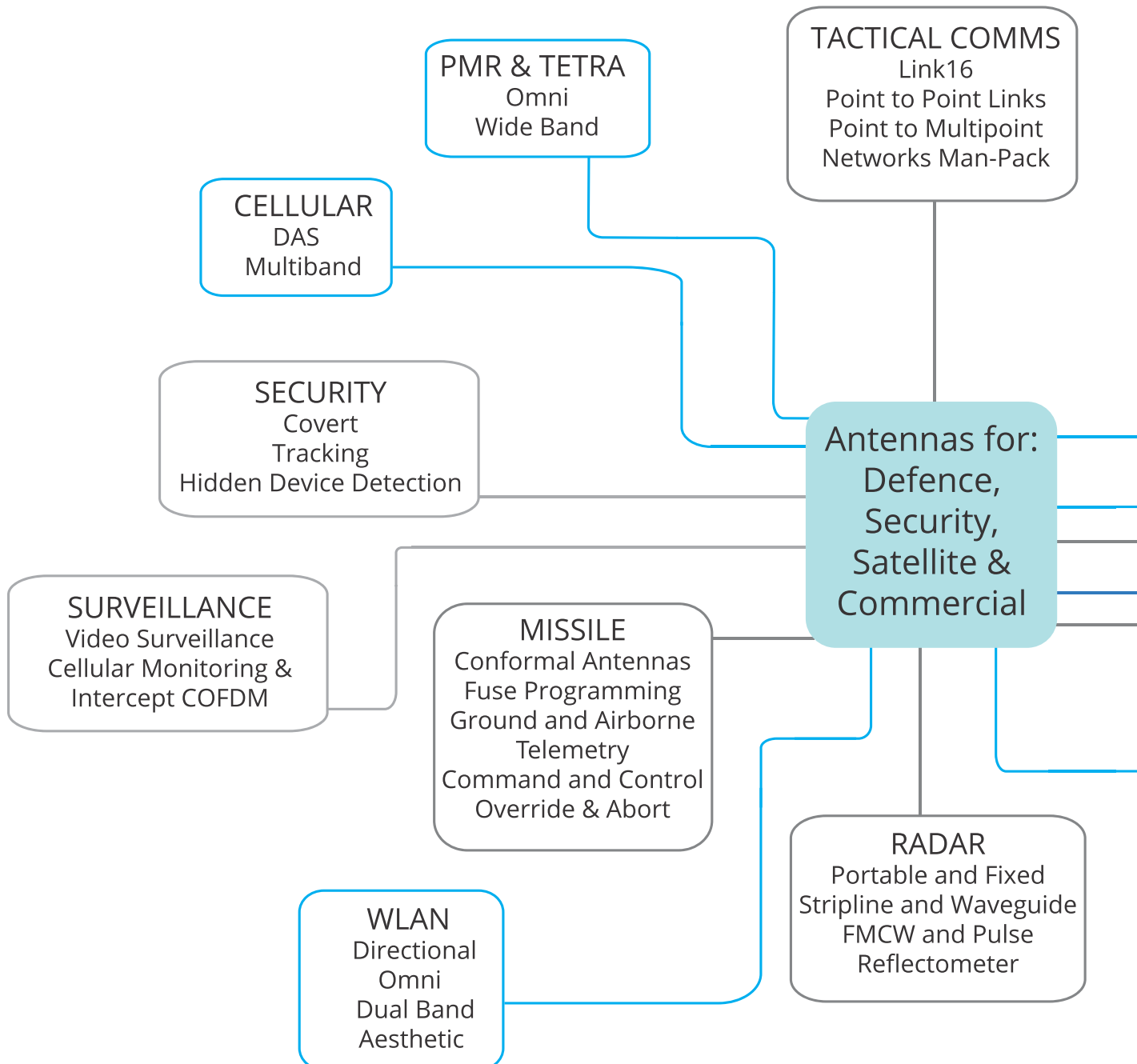
## Commercial

Our microwave antenna products are used for multiple applications in commercial markets including DAS, WLAN, MIMO, M2M, WiMAX and Marine.



## Military

Chelton Newmarket antennas are used worldwide for defence and military applications including UAVs, ground-based radio, data links, missile telemetry, fixed and moving wireless LAN.



## Satellite

Used in a variety of satellites from ground-based to orbiting.

## Security

Applications such as data, video links, telemetry, real-time transmission, base station and helicopter mount.

Chelton (Newmarket) are specialists in the design and manufacture of microwave antennas for defence, security, satellite and civil applications, worldwide.

- Customer focused antenna design from initial concept to production
- Proven expertise and knowledge of all aspects of RF performance
- More than 1200 existing antenna designs provide cost effective solutions
- Appropriate mechanical design to meet the specified environment
- Approved supplier to major international defence and commercial organisations
- Mil standard qualification available
- ISO9001 certified company

BROADCAST  
COFDM  
Ku-Band

WiMAX & LTE  
Base Station  
Subscriber  
MIMO  
Whitespace

ELECTRONIC WARFARE  
IED Countermeasures  
Wide Band Spiral and  
Omni Direction Finding  
High Power

UNMANNED SYSTEMS  
Data Links  
Control Links  
Robotics

SATELLITE  
Ground  
Based  
Mobile  
Satcom

RFID  
Zonal Coverage  
Portal Coverage  
Road Tolling

L-Band

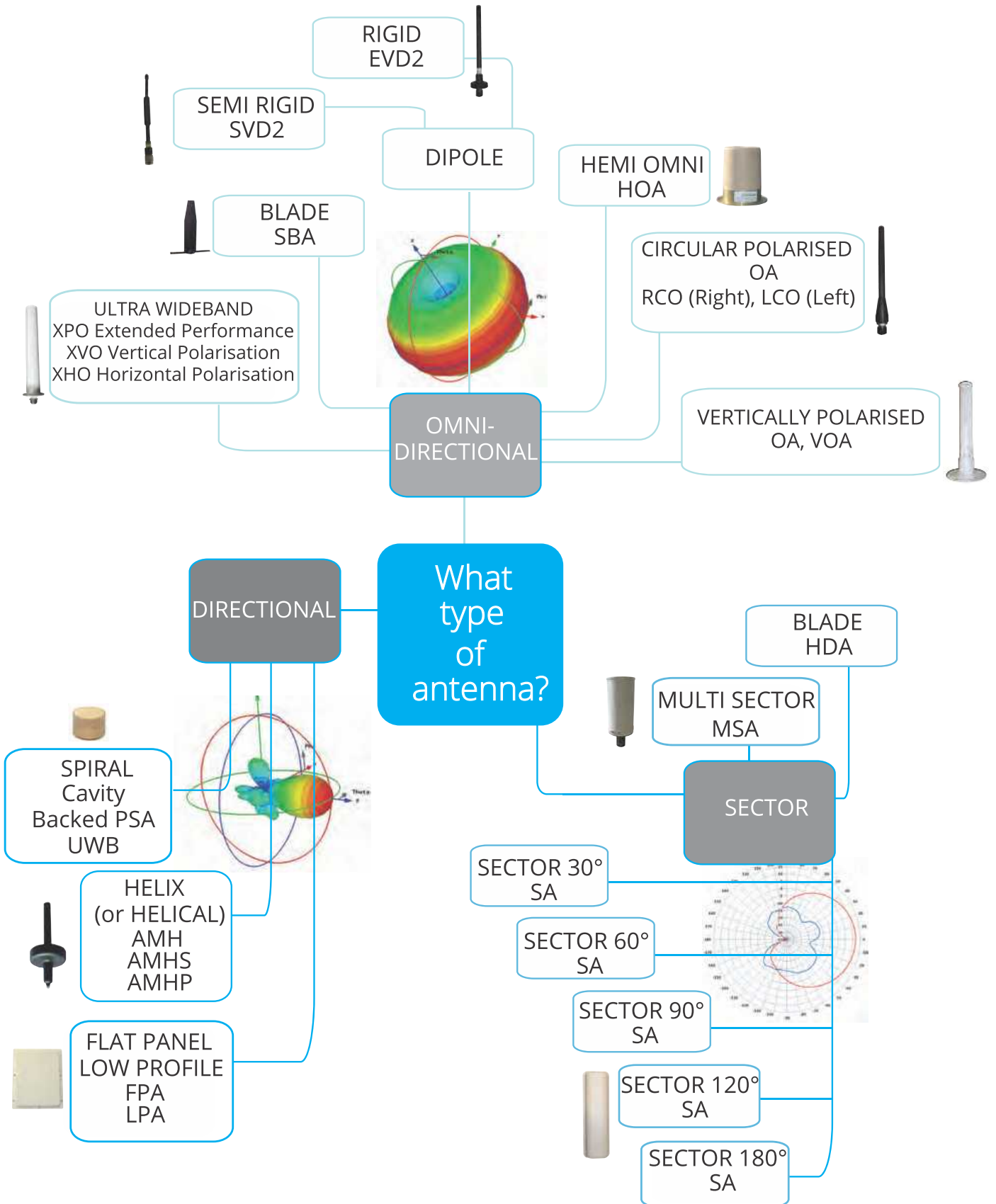
Hemi Omni

### Cover photograph antennas:

- 1 - Directional C-Band: FPA26-47V/1147
- 2 - Omni with Integral GPS: OA2-0.45V-GPS/1685
- 3 - Ultra Wideband Omni: XPO2V-0.8-6.0-GF/1441
- 4 - Omni 5.8GHz: OA6-5.8L/1756
- 5 - Omni 14.9GHz: RCO4-148/1447
- 6 - Prototype Omni Blade
- 7 - Multi Sector: MSA6-15-46L/879



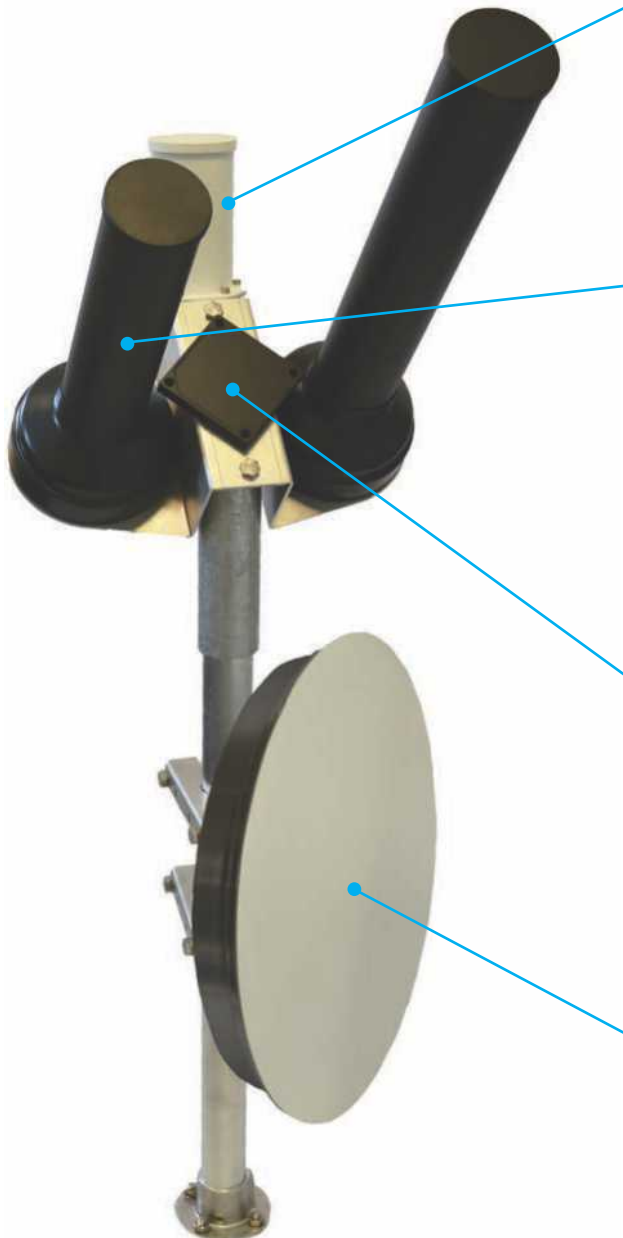
**ANTENNA TYPES**





## ANTENNAS FOR COUNTERING THE UNLAWFUL USE OF DRONES

Chelton provides advanced antenna solutions to counter the unlawful use of drones. The range includes Wideband Omni-Directional, Directional Helix, Directional Flat Panel, and High Power Directional antennas, which can be combined or configured in arrays for various applications. These solutions support methods such as jamming, spoofing, and direction finding, tailored to meet specific counter-drone needs.



### Wideband Omni's

- High power Omni directional jamming
- Multiple elements which can be phase or amplitude matched for Direction-finding array
- Omni coverage for general surveillance

### Directional Helix Antennas

- Directional for high gain long-range Jamming
- Two bands in one unit are possible reducing size and weight especially for portable systems i.e:
  - L1 GPS (1.57GHz) & ISM band (2.4GHz)
  - L2 GPS (1.2GHz) & ISM Band (900MHz)
- Circular polarisation to counter all threats
- Reduce interference with nearby systems

### Directional Flat Panel Antennas

- Higher gain smaller size and improved efficiency for higher frequencies (5GHz +)
- Linear or circular polarisation
- For monitoring or signal denial

### High Power Ultra-Wideband Directional Antennas

- Multiple frequencies in single unit
- 5-10dBiC gain
- High power - 100W possible over wideband
- Circular polarisation



# Empowering Connectivity Across the Electromagnetic Spectrum

Tailored RF and Microwave Components for  
Space, Defense, Medical, and Telecom Applications



### SERVICES

Our product lines:

· Microwave simulation and design

Simulation and manufacturing of test tools

Technical analysis (Multipactor, thermal, reliability, EMC, materials, etc.)

Project management (planning, technical aspects and quality)

Component assembly and cabling with wire bonding, parallel gap, etc.

## SEMICONDUCTORS



- PIN diode
- Voltage multiplier diode
- Frequency multiplier diode
- Varactor diode
- MOS capacitor
- Power limiter
- Mixer
- PIN diode switch
- Attenuator

## ISOLATORS, CIRCULATORS AND LOAD

- Waveguide
- Coaxial
- Dropin
- Microstrip
- Surface mount
- Ferrite Switch



## COUPLERS AND DIVIDERS



- Power divider
- Power combiner
- Coupler
- Multiport coupler
- Hybrid 3dB
- Module assembly

S-parameters and glitch measurements

Measurements of carrier lifetime and series and parallel resistance

Temperature measurements (thermal cycling, thermal shocks)

Power handling test from VHF to Ka-bands

Thermal test under vacuum and in altitude

Corona, Multipactor and PIM test

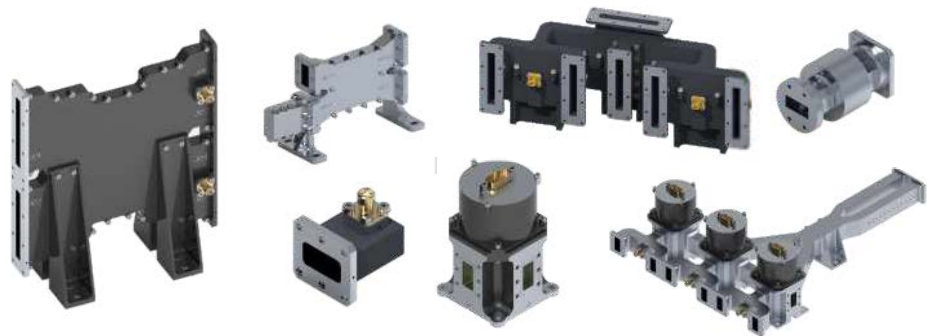
## FILTERS



- PAFSIW
- Cavity air filter
- Ceramic filter
- Lumped element filter
- Waveguide filter
- Multichannel filter

## WAVEGUIDES

- Waveguide-to-coaxial transition
- Coupler, divider, combiner
- Attenuator
- Rotary joint
- Electromechanical switch
- 3D printing assembly



## SYSTEMS



- Test bench for radars signal
- Test bench for radio mobile network simulation
- Test bench for multi-carrier signals
- Antenna for on-board radar
- Transmit or receive unit
- Ferrite switch with electronic driver
- Subassembly for radar transmit system
- Subassembly for payload communication system

# A FUZION

*When Safety Is Critical™*

## THE WORLD'S MOST-PREFERRED AVIATION DEVELOPMENT SERVICES COMPANY

DO-178 • DO-254 • DO-326A • DO-330  
ARP4754A and more...

Scan the QR code to contact us

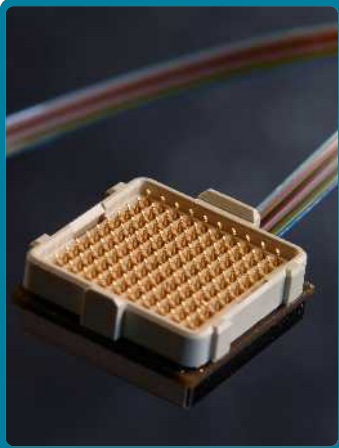




# High-Performance RF and Microwave Connectors with Integrated Fiber Optic Solutions

Delivering Advanced Connectivity for Seamless Signal Transmission Across Diverse Applications

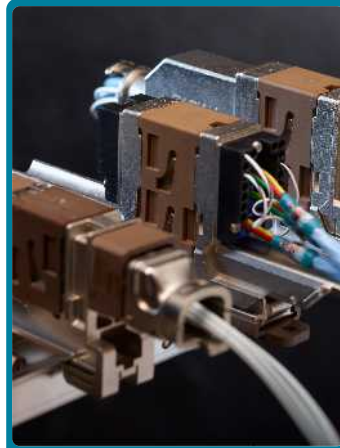




**ACTIVE OPTICS**



**ANTENNAS**



**MULTIPIN  
AEROSPACE  
CONNECTORS**



**RF CABLE  
ASSEMBLY BUILDER**



**OPTICAL CABLE  
ASSEMBLIES**



**OPTICAL  
CONNECTORS**



**OUTDOOR  
CONNECTORS**



**RF & MICROWAVE  
SWITCHES**



**RF CABLE  
ASSEMBLIES**



**RF COAXIAL  
CONNECTORS**



**RF MICROWAVE  
COMPONENTS**

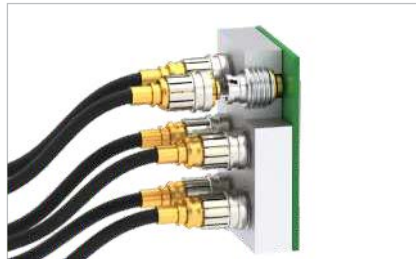


**SPACE QUALIFIED  
COMPONENTS**

## RADAR & ELECTRONIC WARFARE



**OPTICAL TRANSCEIVERS**



**RF CONNECTORS**



**LOW LOSS HIGH FREQUENCY FLEXIBLE CABLE ASSEMBLIES (SHF RANGE)**



**RF/MW SWITCHES**



**MIL AERO FIBER OPTIC CONNECTORS**



**RF SOLDERLESS BOARD CONNECTORS**

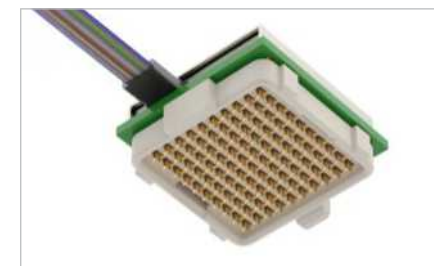
## MUNITIONS



**RF/MW SWITCHES**



**AMMUNITION ANTENNAS**



**OPTICAL TRANSCEIVERS**



**RF SOLDERLESS BOARD CONNECTORS**



**ALUMINIUM QUICKFUSIO™**



**SMPM - LOCK**

## LAND



**EXOBEAM™ HARNESS**



**SMT QUARTZ RELAY**



**TACTICAL COMM ANTENNA**



**GNSS ANTENNAS**



**NSX FOR LAND SYSTEMS**



**PHASE-MATCHED SHF CABLES**

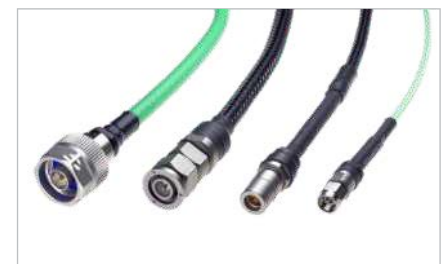
## UNMANNED



**EPXB2 LIGHTWEIGHT  
DISCONNECT**



**QUICKFUSIO™**



**AIRFRAME LOW LOSS CABLES**



**38999 LuxCis® ARINC 801**



**RF BOARD-TO-BOARD  
CONNECTORS**



**Q-MTITAN ARINC 846  
WITH OPTICAL TRANSCEIVER**

## AIRBORNE MULTI-MISSION



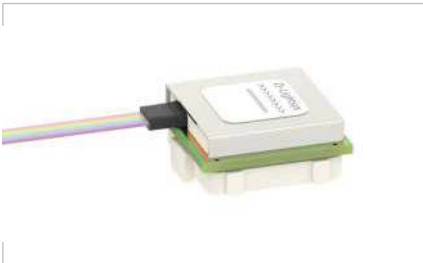
IMP LOW PROFILE



RF HERMETIC CONNECTORS



RF COUPLERS



D-LIGHT TRANSCEIVER<sup>®</sup>



EB-LUXCIS<sup>®</sup>

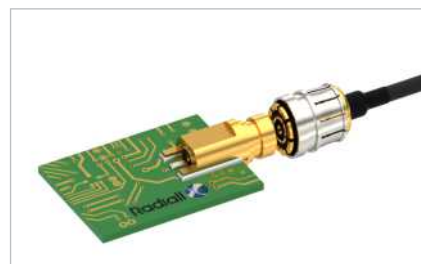


MPX

## AIRBORNE SURVEILLANCE



SHF C/A FOR ALTITUDE IMMERSION



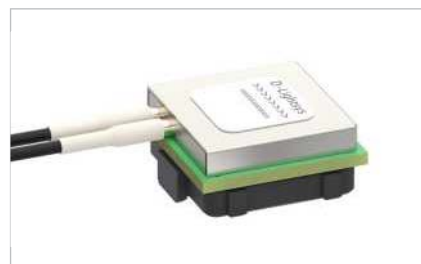
QUICK LOCK AND SECURE CONNECTORS



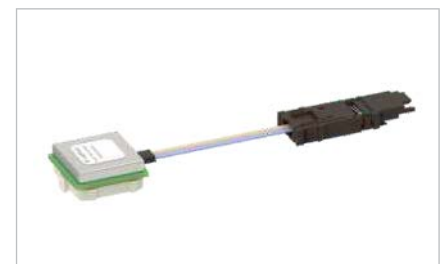
EPXB2 BULKHEAD RECEPTACLE



DSX



S-LIGHT



C-MTITAN™ & D-LIGHT

**NAVAL**



**WILDCAT FMC BOARD**



**LUXCIS<sup>®</sup> ARINC 801 HARNESS**



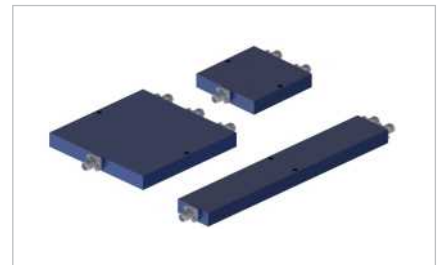
**BMA CONNECTORS**



**OUTDOOR LOW LOSS CABLES**



**ATTENUATORS**



**RF POWER DIVIDERS**



**SIMPLIFICATION IS OUR INNOVATION**



Linden  
Photonics, Inc.

Pioneering Advanced  
Fiber and Hybrid  
**Cable**  
Technologies

Engineered for Extreme Conditions and  
Unmatched Durability

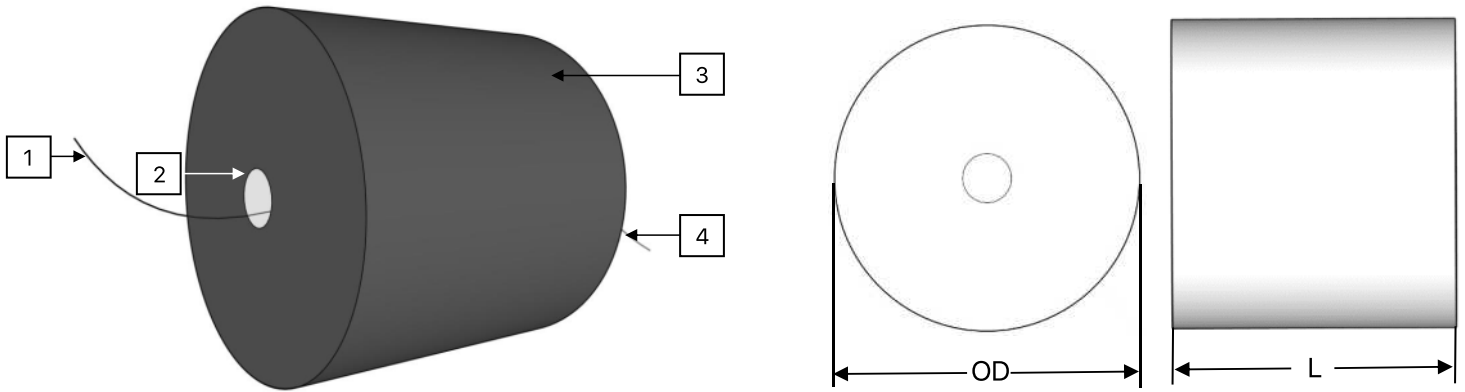


## TETHERED DRONE SYSTEM



# What is a Tethered Drone System

A tethered drone system uses a UAV connected to a ground station via a tether, providing continuous power for extended flight durations and enabling secure data transmission. Key features include, stable operation in adverse conditions, enhanced safety, and reduced data interception risk.



- Element #1**  
Fiber Link Free End  
(Singlemode)
- Element #2**  
Exit Port
- Element #3**  
Polymer Canister
- Element #4**  
Fiber Link Fixed End

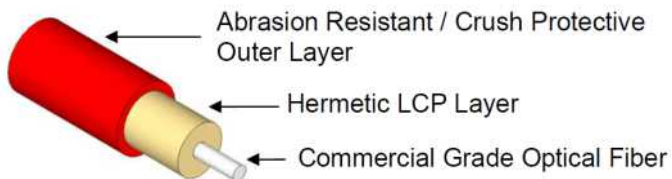
Strong Fiber Cable					
Spec No.	Part No.	Fiber Length (km)	L (mm)	OD (mm)	Total Wt (kg)
LINDEN-SPE-7546	SF-3-3.5-1	1	76	89	0.49
LINDEN-SPE-7547	SF-4-4.5-2	2	102	114	0.89
LINDEN-SPE-7548	SF-5-5.2-5	5	127	132	1.80
LINDEN-SPE-7549	SF-6-6.2-10	10	152	157	2.92
LINDEN-SPE-7550	SF-8-7.5-20	20	203	191	5.81

Bare Fiber					
Spec No.	Part No.	Fiber Length (km)	L (mm)	OD (mm)	Total Wt (kg)
LINDEN-SPE-7551	BF-2-2.8-1	1	51	73	0.21
LINDEN-SPE-7552	BF-2.5-2.8-2	2	64	73	0.34
LINDEN-SPE-7553	BF-3.5-3.5-5	5	89	89	0.55
LINDEN-SPE-7554	BF-4-4.5-10	10	102	114	1.01
LINDEN-SPE-7555	BF-5-5.5-20	20	127	140	1.80

## CABLES (Fiber Optic – Hybrid – Copper)

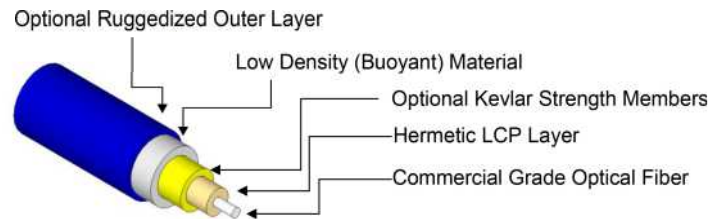
### STFOC Optical Cable

Non-Kink Crush Proof



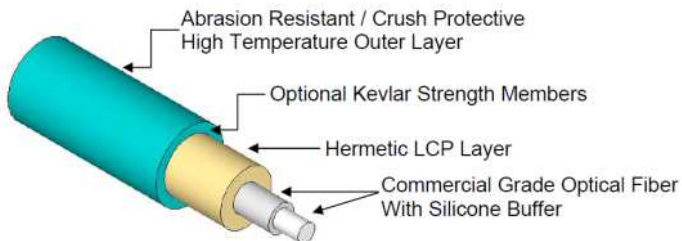
### Buoyant Cable

Floats • Strong • Neutrally Buoyant



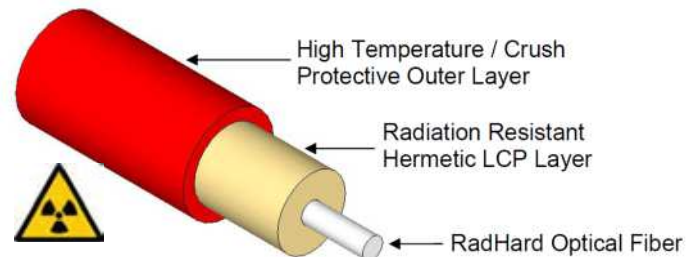
### AVNOC Avionic Cable

Simple Design • Improved Performance



### Radiation Hardened Optical Cable

Optical and Mechanical Performance to 20MRad



### Hybrid Cables

Rugged & Durable • Buoyant • Thin & Lightweight

#### Advantages

- Virtually crush proof
- Non-corrosive
- Thin, lightweight, yet strong
- Withstands high hydrostatic pressure
- Synthetic strength members for higher strength and lower weight

### MicroTethers

Thin & Lightweight • Flexible • Power & Optics

#### Advantages

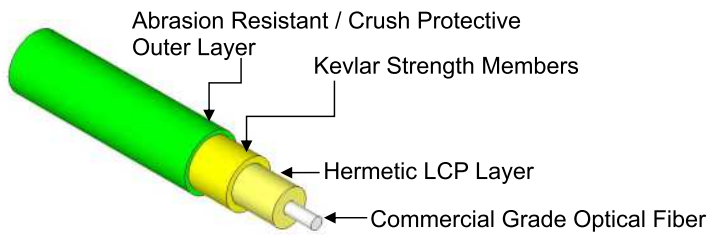
- Highly Flexible
- Thin, lightweight, yet strong
- Reduced cable weight = maximum payload capacity



## CABLES (Fiber Optic – Hybrid – Copper)

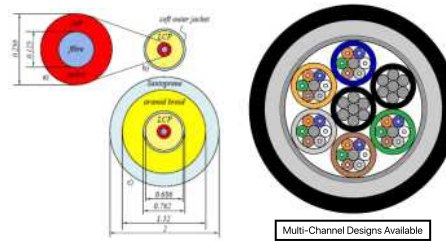
### High Strength Cable

Thin Lightweight Rugged



### Phase Stabilized STFOC™

Cost Effective



#### Advantages

STFOC shows excellent thermal stability. The Non-Kink STFOC version is the first known cable which shows a negative Thermal Coefficient of Delay (TCD).

### Specialty Copper

Buoyant Designs Built to Last

#### Features

- Wide Range of Size Capabilities: from 3mm to >20mm OD
  - Designs from 100 to 5,000 lbs work load
    - Twisted Pairs / Shielded Twisted Pairs
  - High Voltage • Various insulation options
- MIL M22759 Tefzel coated wire – up to 1,000V rated
  - Braided or extruded jackets

#### Advantages

- Highly Flexible • Thin, lightweight, yet strong
- Custom design services available

### STFOC™ Patchcords

Thin Lightweight Rugged

#### Features

- Rugged, durable, patented STFOC™ fiber optic cables
- Hermetic coating protects fiber from moisture/hydrogen/helium
  - Crush proof, non-kink cables
- Buoyant/Avionic/High Temperature/RadHard designs
  - Thin wall insulation = thinner/lighter cables
  - Various connector types available

#### Applications

Subsea • Surface • Avionic • Space

Harmonizing  
Opposing Goals  
**Strength & Flexibility**



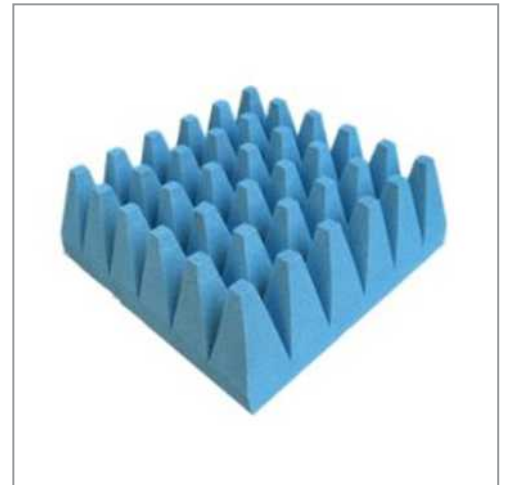


# Comprehensive EMI Shielding Solutions for Diverse Industries

Ensuring Electromagnetic Compatibility Across Automotive, Defense, Aerospace, Telecommunications, Medical and Industrial Electronics Sectors



**PRODUCTS**



**Radar Absorbent Materials**



**Shielded rooms and chambers for COMSEC TEMPEST**



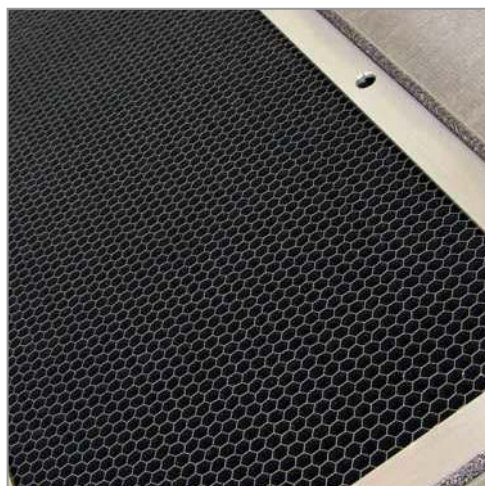
**Shielding Tent**



**EMI/RFI Shielding Seals**



**EMI/EMC shielding gaskets for connectors**

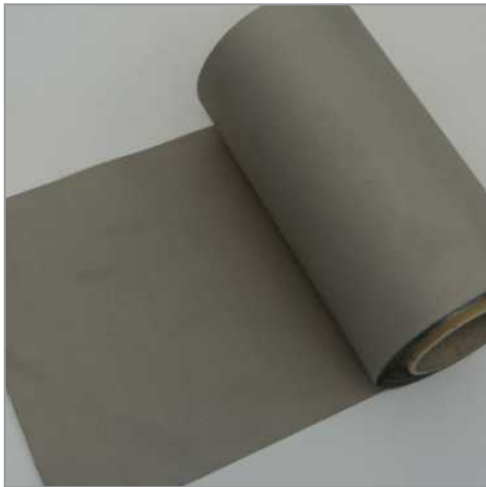


**Shielded Honeycomb air vent**

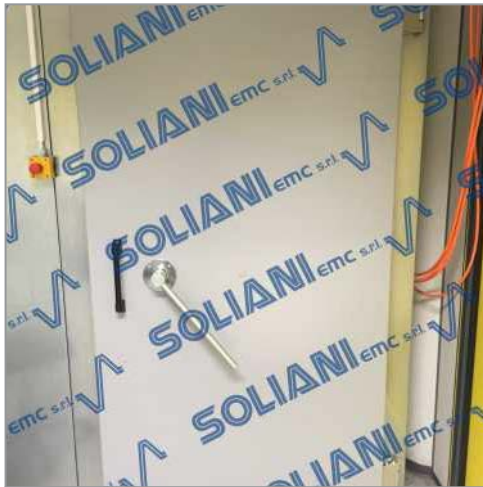


**EMI EMC IP 65 Sealed gaskets**

**PRODUCTS**



**Conductive and shielding fabrics  
EMI/EMC**



**HEMP EMC TEMPEST RFI EMP  
Shielded Doors**



**Electromagnetic Shielding Test**



**Shielded Windows**



**Thermally conductive silicone**



**Conductive mask tape EMI/EMC**



**EMI/EMC fingers strip**



**Electrically conductive silicone gasket**



**Shielding Cable**

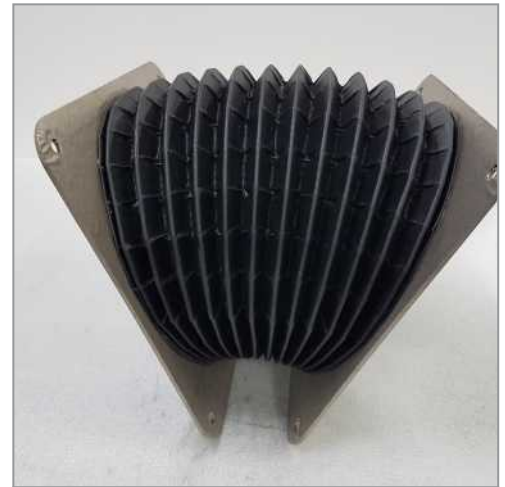
**PRODUCTS**



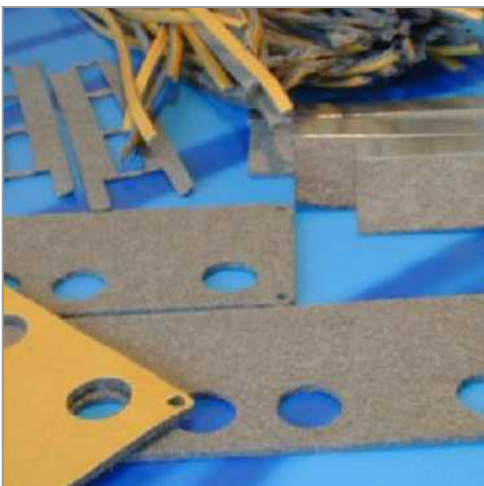
**Shielding of Magnetic fields**



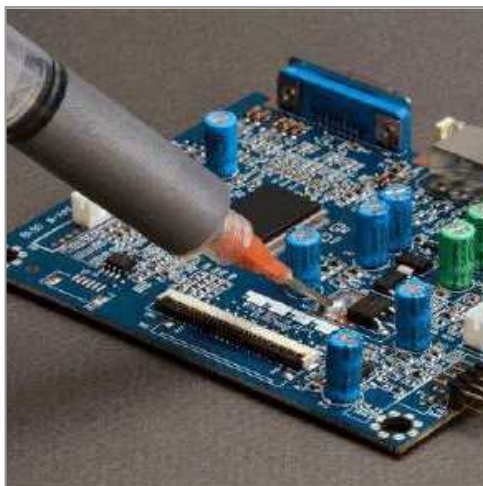
**Anechoic and Semi-Anechoic EMC Chambers**



**EMI/EMC shielded bellows**



**Conductive Non-Woven**



**Conductive epoxy adhesive**



**Conductive adhesives and sealants**



**Electrically Conductive EMC Coatings**



**Shielding Rfid cards**



**EPDM conductive gasket EMC/NBC**



Innovative Solutions for  
**Tomorrow's**  
Technology

Driving Innovation with **Advanced Materials and Technologies**



**SQUARE RADIAL SERIES**



TDE



TDD



THS3



TDB

**ROUND RADIAL SERIES**



THQ



THQA2 M2



THQS2

**AXIAL SERIES**



HyCap Series



HyCap HT Series

**CAPATTERY SERIES**



Capattery

Capattery SH

**HQ SERIES**



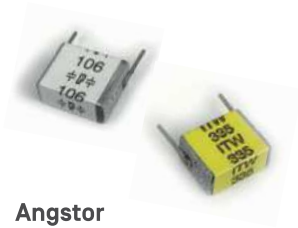
HQ Series

**CAPACITOR BANK**



Capacitor Bank Assemblies

**MULTILAYER POLYMER FILM CAPACITORS**



Angstor



Surfilm

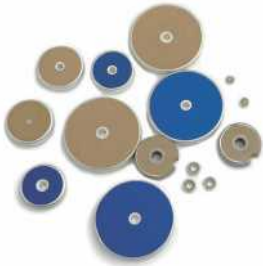


Quencharch



Capstick

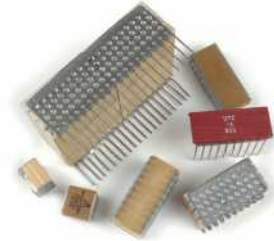
**MULTILAYER CERAMIC CAPACITORS**



Discoidals



Discoidal Arrays



Mil PRF 49470



Radial [High Voltage]



SMPS - Commercial



Chips [BME/ PME]

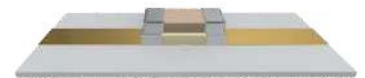
**HIGH FREQUENCY CERAMIC CAPACITORS**



Gap Capacitors



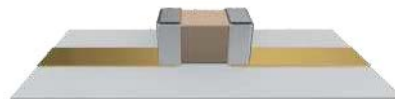
Binary Capacitors



Broadband Blocks



Vertical Layer Capacitors



High Q Capacitors

**THIN-FILM EMBEDDED RESISTORS**

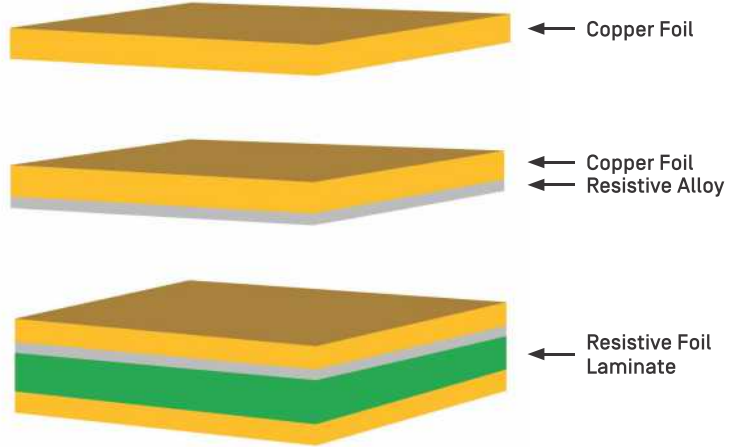


**OhmegaPly RCM®**



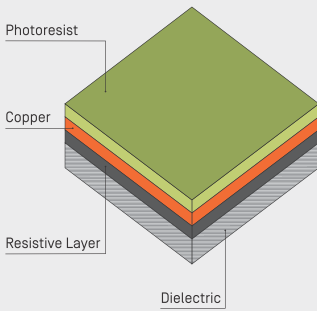
**TCR® | TCR-EHF®**

OhmegaPly® RCM  
TCR® / TCR-EHF®

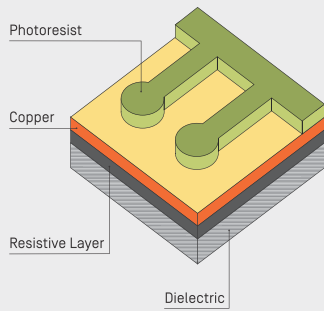


**RESISTIVE FOIL PROCESSING**

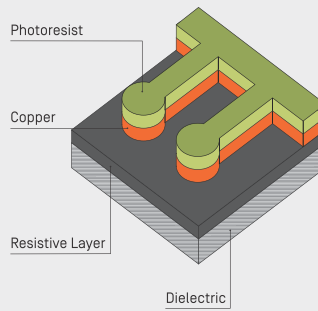
**Step 1:** Apply Photoresist to Laminate



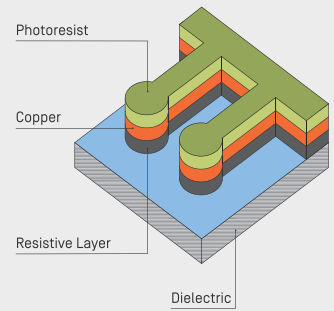
**Step 2:** Print Image, Develop off Photoresist



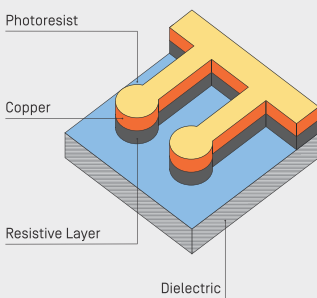
**Step 3:** First Etch to Define Copper Circuitry & Resistor Width



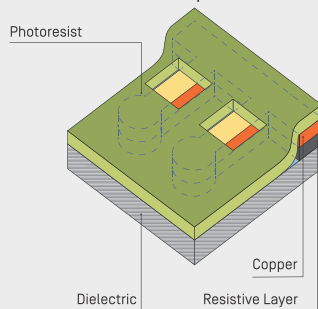
**Step 4:** Second Etch to Eliminate Resistive Alloy, if Applicable



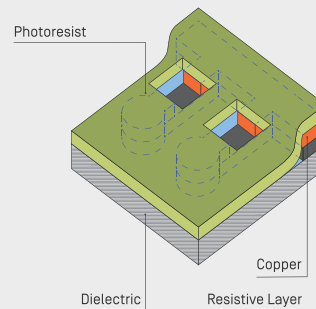
**Step 5:** Strip Photoresist



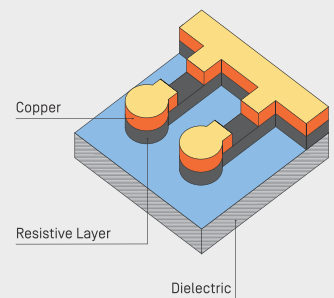
**Step 6:** Apply Photoresist, Print Resistor Image, Develop off Photoresist



**Step 7:** Third Etch to Define Resistor Length



**Step 8:** Strip Photoresist





GRAYHILL

On the **Air**  
**Ground**  
At **Sea**

Grayhill Delivers  
Reliable Control Everywhere



■ **Touch Encoder**



■ **Hall Effect Encoders & Joysticks**

■ **CANbus, Keypads, Joysticks, and MMI Controllers**



■ **CANbus Displays**



**Rotary Switches & Mechanical Encoders**

**Optical/Hall Effect Encoders**



**Pushbuttons**

**Keypads**





**Türkiye'nin üretim gücünü dünyaya taşıyoruz...**

[www.bupatglobal.com](http://www.bupatglobal.com)





# Long-Lasting LED Lighting Built for Performance

Reliable, Energy-Efficient Illumination for Demanding Applications



**LED & LIGHTING SOLUTIONS**



**Indicator lights**



**Based LED's**



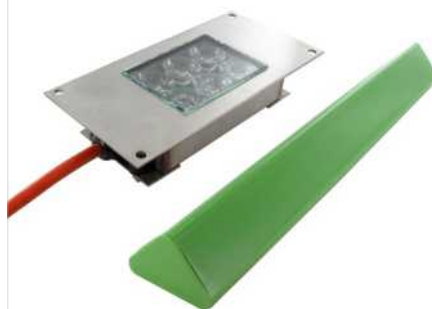
**LED-Modules**



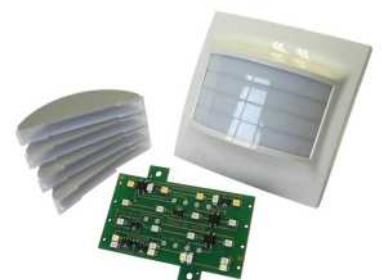
**LED & Accessories**



**Aluminum  
Bar LED Striplight**



**Industrial LED  
Applications**



**Custom Solutions**

## AREAS OF APPLICATION

### DEVICES



Communication



Power Supplies



Measure & Testing



Medical Technology



Washing Machines



Coffee Machines

### MACHINES



Metal Working



Wood Working



Process Technology



Process Automation



Inspection / AOI



Mounting

### VEHICLES



Agriculture



Trucks



Special Vehicles



Defence



Boats



Railway

### OTHERS



Emergency Exits



Elevators



Barriers



Doors / Access Ctrl.



Bio Production



UV/405nm Blue Light



# Revealing the Hidden Language of **Motion**

Every Frame, Every Detail – AOS Delivers Precision in Motion





## Non High-G Rated High Speed Cameras

High-speed camera not specifically designed to withstand high g-forces; suitable for use in scientific research, engineering and manufacturing, off-board automotive crash tests, biomedical engineering, and sports analysis.



**J-PRI**  
2060 fps @ 2560 x 1920



**L-PRI**  
3530 fps @ 1920 x 1088



**M-PRI**  
3844 fps @ 1280 x 864



## High-G Rated High Speed Cameras

AOS cameras are rigorously tested for shock resistance up to 150g / 11ms and spikes up to 200g. Most models feature a built-in g-sensor for shock monitoring and can serve as a trigger for recordings. To safeguard your valuable data, sequences are immediately stored in the rescue flash, ensuring data protection in case of power loss



**L-VIT Platinum**  
2500 fps @ 1920 x 1080



**L-VIT 2500**  
2500 fps @ 1920 x 1080



**L-VIT 1000**  
1000 fps @ 1952 x 1080



**M-VIT Platinum**  
3716 fps @ 1280 x 864



**M-VIT 4000**  
3716 fps @ 1280 x 864



## Defense and Airborne High Speed Cameras

AOS cameras have a decades-long history of delivering excellent results in demanding testing applications, accumulating hours of in-flight use. Even 15+ years after deployment, they continue to be serviced and supported. An investment that lasts.



**N-EM**  
846 fps @ 1920 x 1400



**Q-EM**  
500 fps @ 1696 x 1710



**S-EM**  
500 fps @ 1280 x 1024



## High Speed Streaming Cameras & Systems

AOS offers streaming solutions for every application and budget, from economical USB-based cameras to advanced streaming cameras with 1920x1080 resolution at 1000 fps. Perfect for production failure analysis, factory floor troubleshooting, and educational purposes.



**PROMON U750**  
203 fps @ 1280 x 1024



**PROMON U800**  
210 fps @ 1280 x 1024



**PROMON U1000**  
138 fps @ 1984 x 1264



**PROMON 2000**  
1000 fps @ 1952 x 1080



**PROMON SCOPE G4**  
210 fps @ 1280 x 1024



**PROMON Streamer**  
210 fps @ 1280 x 1024



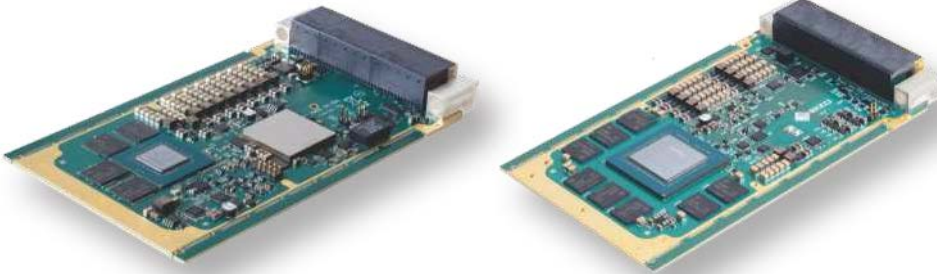
# Rugged Graphics Solutions

## for Mission-Critical Applications

Delivering High-Performance Graphics Processing in  
the Harshest Environments



## VPX SOLUTIONS



**Condor™ GR5 3U VPX Series**  
Rugged 3U VPX Graphics & GPGPU Cards



**Condor™ GR4 3U VPX Series**  
Rugged 3U VPX Video Capture & GPGPU Cards



**Condor™ GR2 3U VPX Series**  
Rugged 3U VPX Video Graphics & GPGPU Cards

## SOSA-ALIGNED SOLUTIONS



### Condor™ GR5S-AD2000

SOSA™-Aligned 3U VPX High-Performance Graphics & GPGPU Card

The Condor GR5S-AD2000 is a rugged 3U OpenVPX graphics card featuring the NVIDIA RTX 2000 GPU (Ada Lovelace architecture), offering 8 GB GDDR6 ECC memory, PCIe Gen 4 connectivity, and advanced support for data-intensive and latency-sensitive applications. It is available in air-cooled and conduction-cooled variants, meeting VITA 47.3 design standards.



MIL-STD 810  
Shock



MIL-STD 810  
Temperature



MIL-STD 810  
Vibration



SWaP

## SOSA-ALIGNED SOLUTIONS



**Condor GR2S 3U VPX Series**  
*SOSA-Aligned Video Graphics & GPGPU Cards*



**Condor XR1S 6U VPX Series**  
*SOSA-Aligned 6U VPX Graphics & GPGPU Card*



## 3U VPX SBC - Rugged System On-Module (SOM)

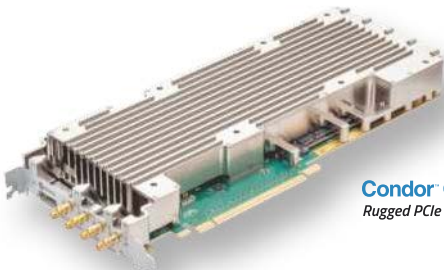


**Condor AGX-IOX 3U VPX**  
*Rugged 3U VPX Single Board Computer*



**Condor AGX-ORIN64-HPC**  
*Rugged 3U VPX Single Board Computer*

## OTHER GPGPU SOLUTIONS



**Condor GR4 PCIe**  
*Rugged PCIe Video Capture & GPGPU Card*



**Condor XR1 6U VPX Series**  
*Rugged 6U VPX Graphics & GPGPU Card*

## NVIDIA-BASED XMC SOLUTIONS



**Condor NVA2100 XMC Series**  
*Rugged XMC Video Capture & GPGPU Cards*



**Condor NVA2000x XMC Series**  
*Rugged XMC Video Graphics & GPGPU Cards*



**Condor NVA500x XMC Series**  
*Rugged XMC GPGPU Coprocessing Card*

## RUGGED VIDEO ENCODER & SPLITTER

## RUGGED VIDEO CONVERTERS



**Tyton VS2X**

Rugged H.265 / H.264 Video Encoding Box

**Hydra 1004R**

Rugged 12G-SDI 1x4 Video Splitter

**Adapt DVI**

**Adapt VGA**

**Adapt R-VGA**

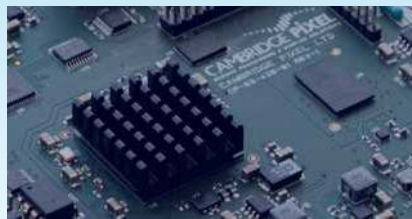
## RADAR PROCESSING

# CAMBRIDGE PIXEL

SENSOR PROCESSING & DISPLAY SOLUTIONS



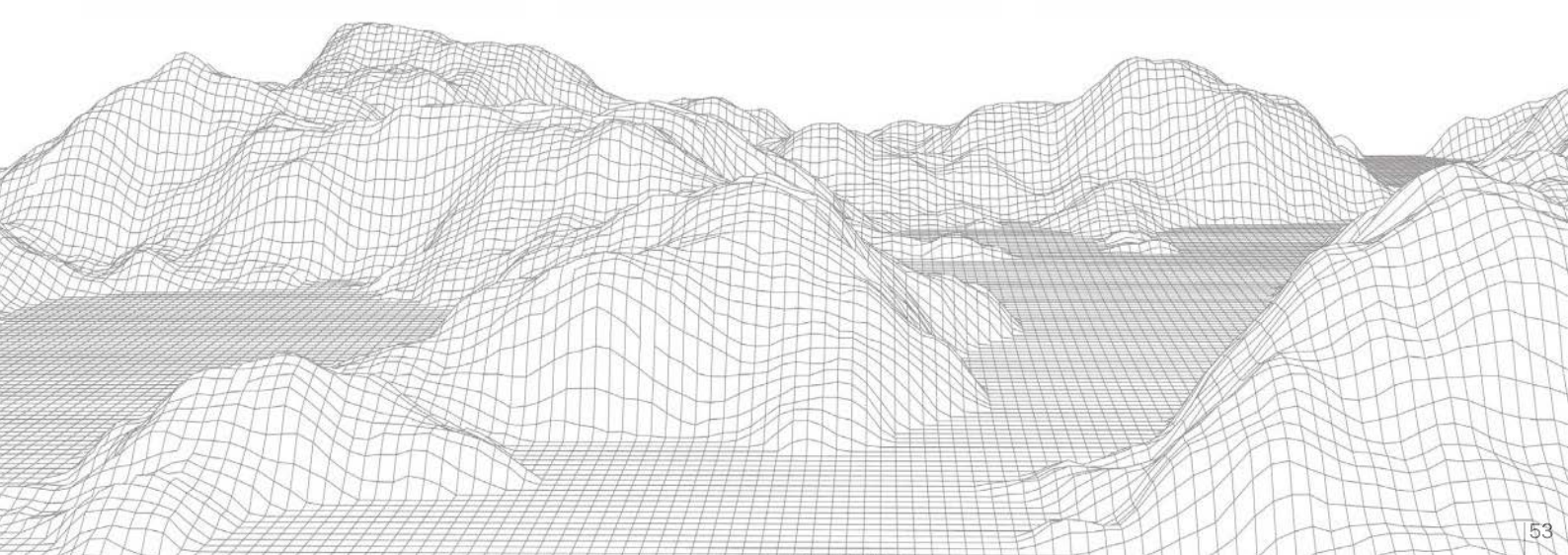
- Radar scan conversion
- Tracking (from primary or IFF)
- Sensor fusion
- Radar video distribution
- Recording and replay
- Simulation



- PCI, PCIe, PMC radar input cards
- Analog to network radar converters
- Synchro to parallel or ACP/ARP
- Analog radar video output cards



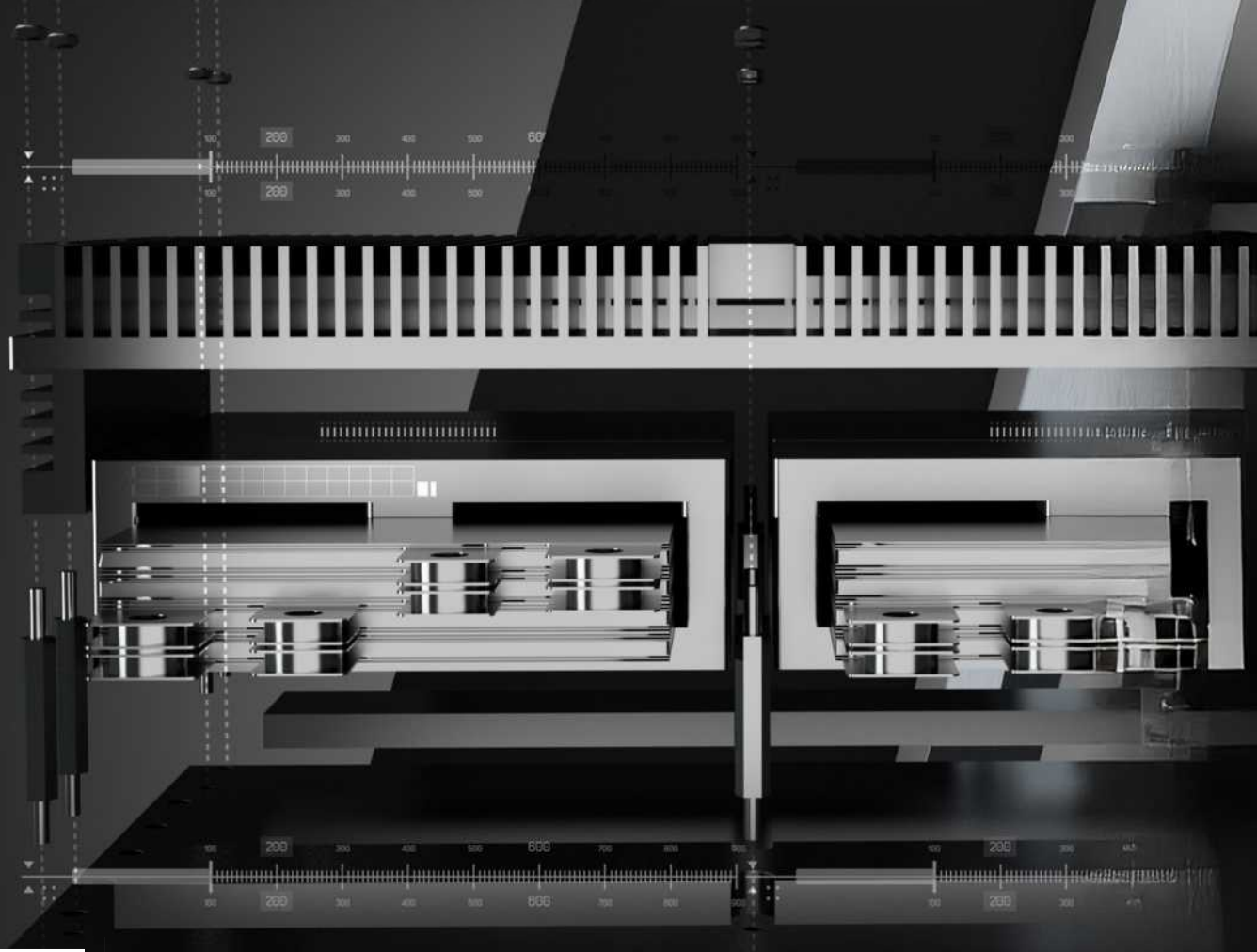
- Radar Display
- Maritime Surveillance
- Air Situation Display
- Video Surveillance Display
- Unmanned surface Vessel Display
- Maritime Display Framework
- Custom Applications





# Revolutionizing Power in Every Layer

Compact, Durable, and Energy-Efficient Transformer Solutions



## CUSTOM PLANAR TRANSFORMERS

### Manufacturing



#### Custom Samples

Designed and Manufactured in the UK

#### Validate Samples

Fix electrical and mechanical design

- ▶ 1k pcs per annum made in the UK
- ▶ ISO 9001 Quality System
- ▶ Full piece part material traceability

#### Qualify production:

- ▶ 10 units
- ▶ 100 units
- ▶ 1000 units
- ▶ Match output to production ramp plan.  
10k+ pcs per month

## Global leaders in Planar Transformer Technology



## CUSTOM PLANAR INDUCTOR

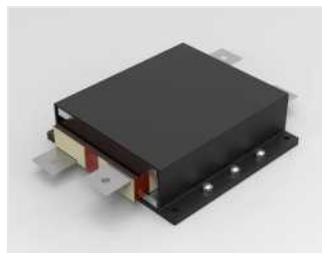
# 6 Step Procedural Testing

- 01** Real condition test system
- 02** High frequency test system
- 03** Real operating condition test system
- 04** 3D simulation for detecting design issues
- 05** Partial Discharge (PD) testing
- 06** Frequency Response analyzer

### Selected Custom Planar Transformer Designs



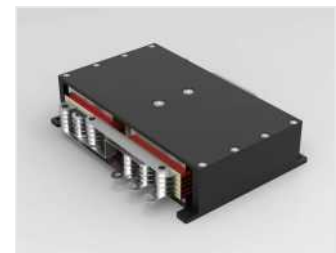
350kW Transformer



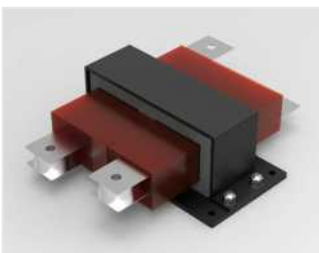
68kW Transformer



50kW Transformer



40kW Transformer



30kW Transformer



20kW Transformer



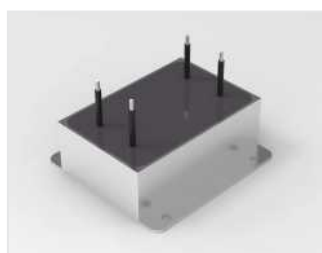
10kW Transformer



9.2kW Transformer



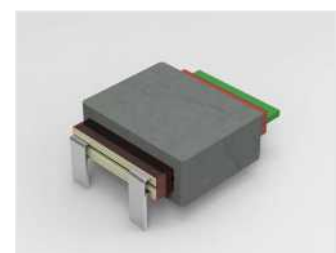
4kW Transformer



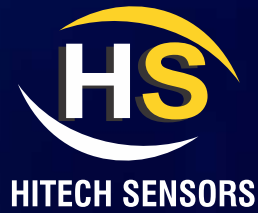
2kW Transformer



1kW Transformer



600W Transformer



# Revolutionizing Motion with **Intelligent** **Sensor Technology**

Gyroscopic Solutions Designed for Seamless Integration and Reliability





■ Quartz Accelerometer

■ Fiber Optic Gyroscope



■ MEMS Sensors

■ Test Measurement Sensor



■ **Inertial Measurement Units**



**AVIONICS**



**SPACE**



**MILITARY**





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## NOTLAR / NOTES

A series of horizontal dotted lines for writing notes.



