

Swiss Engineering
At Home around the Globe



Schmid Telecom Zurich

Sophisticated engineering and top quality solutions are our hallmark since more than 55 years.

Schmid
Communication Solutions

A company with a future

Experience

Schmid Telecom Zurich is a global leader with loyalty to customers in the tradition formed by the Schmid family since 1967.

Schmid Fernmeldetechnik was founded on July 3, 1967. The family owned business has been grown over 55 years and reorganized several times to adapt to the needs. Due to the internationalisation, it was also called Schmid Telecommunication. It was changed to Schmid Telecom AG on June 20, 1991 and finally to Schmid Telecom Zurich on February 13, 2017 operational today.

We value flexibility as much as reliability to ensure us to grow in a constantly changing market environment.

Freedom of Communication.

Innovation

Our team spirit, competence and sense of responsibility is the foundation and creates an atmosphere that fosters innovation.

The large experience in Telecom and Air Traffic solutions, with installed systems all over the world, provide an tremendous base for innovation.

In addition the long-term, operational usage in the filed and high operational satisfaction best prove the reliability of the systems – worldwide.

Intelligent by Design.

Partners

Schmid Telecom Zurich is partnering with a large aerospace and defence company to enhance its product portfolio in the area of defence and non defence solutions.



We are pleased so serve you

Customers

Together with steady analysis of the customer's demands as well as active participation in standardisation bodies enables Schmid Telecom Zurich best to adapt and extend its solutions to the customers needs. This includes integration of the latest standards as well as features.

References

Many well-known customers in the world rely on Schmid Telecom Zurich's infrastructure and competence. They have made a conscious decision to put their trust in our experience, our concern for security, and the technical innovation of our solutions – a decision with vision.

Distribution

Schmid Telecom is working with business partners all over the world. Let's get in touch. What can we do for you?

Quality

The high availability of the hardware and software is a matter of intelligent by design, proven by steady availability. Schmid Telecom Zurich is ISO 9001:2015 certified.

Top quality solutions for the global market

Air Traffic Solutions

We offer the most enhanced integrated air traffic solutions for civil, military and other applications.

Voice Communication System, ICS 200/60, a reliable and widely used solution.

Civilian Radar Systems, include primary antennas, redundant receivers, signal processors, an RCMS for control, a record and replay system and a Radar Controller Work Station with advanced features.

Message Handling Systems, a comprehensive software designed to efficiently manage and process aeronautical messages within the aviation industry.

Defence Solutions

Empowering the Nation's Defence Forces.

Counter Drone Systems, a state-of-the-art solution designed for real-time search, detection, tracking, and neutralization of flying drones within designated areas of responsibility.

Border Surveillance Systems, designed to provide all-weather, day and night surveillance of border areas.

Defence Radar Systems, a comprehensive range of solutions tailored for defence applications.

Defence Communication Systems, for any needs an ideal and leading solution is available.

Optic & Laser Systems, any solution is available to increase visibility and information.

Fighting Vehicle Systems, as ever required.

Naval Solutions

Safeguard Land, Sea and Air Space.

Gun Systems, for seamless integration.

Naval Communications, a state-of-the-art solution designed to streamline and integrate communication capabilities across naval vessels

Radar and Sonar Systems, high resolution, accuracy, response and information to assure surveillance.

Home Solutions

Public Security Systems, for cyber and surveillance with a variety of any solutions required.

Network Systems, Watson, an ideal solution for business ethernet and base station backhauling.

Railway Systems, solutions for automatization, ticketing, gating and control.

Solar Panel Systems, state of the art.



Air Traffic Solutions

Communication Systems

The ICS 200/60 voice communication system by Schmid Telecom Zurich is a reliable and widely used solution for air traffic control, airport ground services, and coast guard applications worldwide.

It offers flexibility in hardware options, allowing customers to choose between specific Schmid Telecom Zurich hardware or pure IP-based COTS equipment. The system is fully compliant with EUROCONTROL, EUROCAE VoIP ED-137, and ICAO standards. With backward compatibility and the ability to mix different generations of hardware, customers can easily upgrade their systems while ensuring smooth operations. The system features distributed installation, seamless networking, remote access, and scalable voice processing power, making it suitable for various operational needs.

It supports secure communication, remote tower operation, and fast reconfiguration for efficient air traffic management.

Civilian Radar Systems

The ASR-MSSR Radar is an indigenous Airport Surveillance Radar compliant with ICAO and EUROCONTROL standards.

It is suitable for defense and civil ATC applications, offering an ASR range of 80 NM for a 2 sq m RCS.

With features like GaN-based SSPA, adaptive MTD, weather channel processing, and CAT240 video display, it ensures accurate tracking and monitoring.

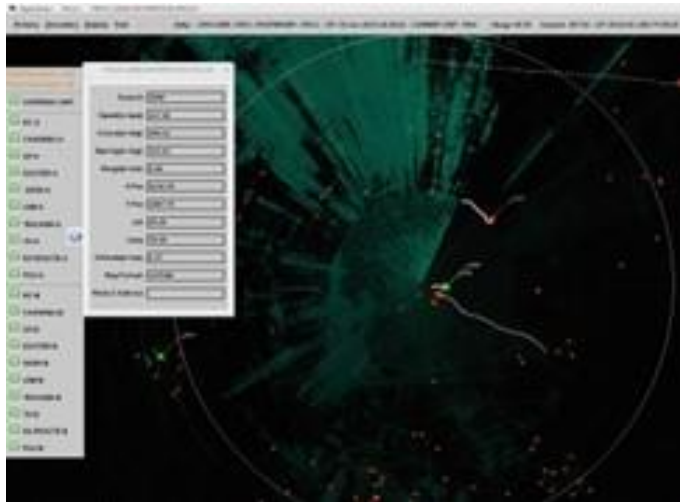
The MSSR component is upgradable to Level 5, with a range of 256 NM and configurable options.

The radar system includes primary antennas, redundant receivers, signal processors, an RCMS for control, a record and replay system, and a Radar Controller Work Station with advanced display features.

Aeronautical Message Handling System

Aeronautical Message Handling Solutions (AHMS) are comprehensive software systems designed to efficiently manage and process aeronautical messages within the aviation industry.

AHMS streamlines the transmission, reception, and distribution of critical messages, such as flight plans, weather updates, NOTAMs, and other operational information. These solutions enable seamless integration with various communication protocols and networks, ensuring reliable and secure message exchange between airlines, air traffic control, airports, and other relevant stakeholders. AHMS enhances operational efficiency, reduces manual errors, and supports real-time collaboration, ultimately improving overall safety and effectiveness of aeronautical communications.



Communications Systems

Performance

The ICS 200/60 voice communication system has been installed for air traffic control, airport ground services and coast guard applications at several hundred sites all over the world. Since the installation of the first generation the platform was steadily updated.

The customer has today the choice to run the proven ICS 200/60 software either on specific Schmid Telecom Zurich hardware or pure IP based COTS equipment. Both solutions are fully compliant to EUROCONTROL, EUROCAE VoIP ED-137 and the respective standards of ICAO.

At the same time different generations of hardware within the same operational ICS 200/60 system can be mixed, enabling all customers that are operating ICS 200/60 systems to smoothly upgrade their systems to become fully compatible with the latest standards in the most economical way, without interfering with the on-going operation. The system is hence fully backward compatible to enable easy lifetime management to all customers.

Scalability

The ICS 200/60 has the unique advantages that all customers are running the same global valid software releases what eases maintenance. The communication server subsystems (usually in a redundant configuration) as the link between the interface bus and the ring of the operator positions

and makes the decisions for all connections. The other server working as a slave to the master server prepares all connections in parallel to the "Master".

All components support distributed installation based. Communication server systems can even be distributed over several rooms or buildings.

Access to remote radio sites can either be done via secured leased lines or highly reliable, redundant networks using ED-137 for radio access.

The architecture supports servers of different performance classes and allows for the distribution of tasks to several servers, enabling scalable voice processing power from the smallest tower systems up to the largest centres.

Reliability

Seamless networking and remote access enables a perfect platform for reliable voice communication for temporary remote tower operation.

The system can start and stop without a management system. However a management system is needed to monitor, control and configure the system. Fully redundant, delay-less network of operator positions and all kinds of analogue and digital radio and telephone network access interfaces. Optimised communication within the system prevents interference between the neighbour's loudspeakers and the controller's own voice. To guarantee a reliable radio communication including retransmission, a maximum delay on radio transmission of less than 20ms is guaranteed.

All hardware modules are hot swappable; they can be exchanged in the running system with no influence on other devices. The replaced interfaces automatically fetch the required firmware and configuration from the communication server. There are no jumpers, and no manual adjustment is needed.

Fast reconfiguration (e.g. due to major changes in air traffic) is achieved on the running system by distributed storage of pre-defined operator position set-ups.



Civilian Radar Systems

Radar Display

The Radar is equipped with the following major subsystems:

- Primary Antenna having Co-sequent squared Antenna Beam Pattern (Dual Feed) with Linear & Circular Polarization.
- GaN Based Solid State Power Amplifiers having feature of graceful degradation of up to 10%.
- Dual Redundant Radar Receiver & Signal Processor with high density FPGA & COTS Hardware of latest technology.
- Dual Redundant MSSR Mk XII-A System having LVA Antenna co-mounted with Primary Antenna for Aircraft code identification & Height.
- RCMS (Radar Control & Monitoring Station) for control and status indication of the Radar sensors with distinct features including track capacity up to 1000 tracks.
- Record & Replay System with NTP time stamp for synchronization.
- Radar Controller Work Station (CWS) with specific display features like ATC routes, weather map, geographical map, Target label display under tracking and Facility to edit and display of user defined primitives (Border & Coastline maps, prohibited, restricted, danger areas, runway, fixed points map, airways etc.)

Surveillance Radars

CAO Compliant Indigenous ASR-MSSR (Airport Surveillance Radar - Mono-pulse Secondary Surveillance Radar) Radar.

Features:

- ICAO/ EUROCONTROL compliant
- Defence and Civil ATC Applications
- ASR Range: 80 NM for 2 sq m RCS
- RPM (15/7.5)
- ASR Transmitter GaN Based SSPA
- Fully coherent Adaptive MTD
- Weather Channel Processing
- CAT240 Video on CMS Display
- MSSR Mk XII-A Mode S level 2 (Upgradable to level 5) Range: 256 NM Configurable for Standalone MSSR
- Co-mounted and standalone MSSR.

Weather Radar

The Weather Radars are a state-of-the-art to systems to meet your weather forecast requirements. It enables a network of Weather Radars to seamlessly cover the entire country and thereby ensure effective detection of severe weather conditions, cyclone warning and appropriate weather forecasts. Dual polarimetry is implemented for effective rain estimation and hydrometeor classification.

This radar provides long range weather surveillance up to 500 kms. It operates in S-band and is capable of detecting and estimating the parameters of cyclone and other severe weather conditions. This Radar can forecast severe weather conditions so that necessary preventive steps could be taken to alleviate the impact of such natural disasters in terms of loss of life and property.

Dual Polarimetric capability has been incorporated for effective rainfall estimation. This coherent radar estimates three weather base products like, reflectivity (Z), mean velocity (V) and spectral width (σ) in single polarization mode. In Dual Polarisation mode, the radar estimates additional base products like, Differential Reflectivity (Zdr), Differential Phase Shift (ϕ_{dp}) and Correlation Co-efficient (ρ). Various primary & secondary weather data products for meteorological & aviation applications are generated using these base products.



Message Handling Systems

Elevate your aviation communications with Aeronautical Message Handling Solutions (AHMS)! Our cutting-edge software systems revolutionize the way aeronautical messages are managed and processed within the aviation industry.

AHMS is your ultimate solution for streamlining the transmission, reception, and distribution of critical messages. Whether it's flight plans, weather updates, NOTAMs, or vital operational information, AHMS ensures swift and accurate delivery.

Our software seamlessly integrates with diverse communication protocols and networks, guaranteeing secure message exchange between airlines, air traffic control, airports, and all key stakeholders. Say goodbye to manual errors and hello to enhanced operational efficiency.

AHMS isn't just software; it's a game-changer. It promotes real-time collaboration, bolstering the safety and effectiveness of aeronautical communications. Trust AHMS to propel your aviation operations to new heights.

Join the future of aeronautical messaging - choose AHMS for unmatched efficiency, reliability, and safety. Your success is our priority, and AHMS is your pathway to excellence.



Defence Solutions

Counter Drone Systems

A state-of-the-art solution designed for real-time search, detection, tracking, and neutralization (Soft/Hard Kill) of flying drones (Micro/Small UAVs) within designated areas of responsibility. This advanced system provides detailed object information, including optical/thermal imagery and RF spectrum display on a user-friendly GUI. Detection of drones is accomplished using radar and RF-based systems, while target identification utilizes EO sensors and COMINT technology. Soft-kill measures are executed through RF jamming and Anti-GNSS technologies, while the Hard Kill capability is provided by a Laser Directed Energy Weapon system. For effective real-time surveillance, detection, and neutralization of unauthorized drone activities, ensuring the safety and security of your area of responsibility. For surveillance a variety of drones and swarm drone systems are available.

Border Surveillance Systems

Designed to provide all-weather, day and night surveillance of border areas. It combines the power of the Battle Field Surveillance Radar with advanced Electro-Optical sensors, including day/night cameras, eye-safe LRF, and geo-location sensors. These sensors are mounted on a Pan-Tilt platform, powered by a renewable energy source. Provide robust and reliable surveillance for enhanced border security in all environmental conditions.

Defence Radar Systems

The ground surveillance radars offer precise monitoring and protection of critical areas, ensuring enhanced situational awareness. Air defence radars provide early warning and accurate threat tracking, bolstering defence operations. With the air traffic control radars, airspace management becomes efficient and secure, enabling smooth aircraft movement. Fire control radars deliver precise targeting for effective engagement of airborne and ground-based threats. Weapon location radars detect and locate enemy artillery and rocket systems, enhancing situational awareness. Finally, the secondary surveillance radars enable accurate aircraft identification and monitoring. Unmatched defence capabilities with the cutting-edge systems.

Defence Communications

Experience seamless and secure defence communication with the range of innovative products. The radios, including tank communication radios, provide reliable and robust communication capabilities for military operations. Base stations and repeaters ensure extended coverage and enhanced signal strength in challenging environments. The SATCOM solutions enable secure and high-bandwidth communication over satellite networks. With radio relays, strategic communication becomes efficient and uninterrupted. Tactical communication systems and networks deliver real-time information exchange in the field. Naval communication systems ensure seamless communication at sea, while the encryption products provide advanced data protection. To enhance operational effectiveness and maintain confidentiality in critical missions.

Optic & Laser Systems

Optic & Laser Systems offers a comprehensive range of advanced military equipment. The Multi-function Hand Held Thermal Imager integrates a cooled thermal imager with a laser range finder, compass, CCD camera, and GPS for precise targeting. Uncooled Thermal Weapon Sights provide compact, lightweight surveillance for ground forces. The Night Vision Devices, including binoculars and monoculars, offer versatile options for night patrolling and surveillance. Explore our various Laser Range Finders, Laser Target Designators, and Weapon Sights for complete mission readiness.

Fighting Vehicle Systems

The Remote Controlled Weapon Station provides precision gun control and target tracking. The Chemical Agent Monitor swiftly detects harmful agents. The Combat NET Radio ensures secure communication. Explore our Electronic Systems, including Intercom, Navigation, Fire Detection, and Night Sight Systems.

Counter Drone Systems

Detection, Tracking & Neutralization

The Counter Drone System is capable of performing real time search, detection, tracking and neutralization (Soft/ Hard Kill) of the flying drones (Micro/Small UAVs) in area of responsibility and will provide object details (Optical / Thermal) and RF spectrum display on GUI.

The detection of drone will be done with the help of Radars and RF based detection system. The identification of the target will be done with the help of EO sensor and COMINT (Communications Intelligence). The soft-kill will be executed by RF jamming & Anti GNSS technologies. Laser Directed Energy Weapon (DEW) system will perform the Hard Kill.

Features:

- RADAR System
- Drone detection and tracking
- EO System
- CCD, IR camera with LRF for detection
- Tracking of Drone target
- RF Counter Drone System
- Drone communication channel RF Detection & Jamming, GPS Jamming/Spoofing System (Soft Kill)
- Laser Directed Energy Weapon System (Hard Kill)
- Command & Control Centre (C3) with Power Source for complete System.

Multiple Sensor Solution

The “Counter Unmanned Aircraft System - Hard Kill (CUAS-HK)” provides a ‘Multi Sensor based comprehensive solution’ to tackle Unmanned Aircraft Systems (UAS) like UAVs, Drones etc. The System “detects, tracks, identifies, designates and neutralizes” Unmanned Aircraft System (UAS) threats. CUAS-HK has the Capability to enforce effective UAS No-Fly zones by intercepting identified threats while inflicting minimal collateral damage to the surrounding environment. CUAS-HK provides the Operator a “Composite Air Situation” as well as tools for managing responses. Neutralization of UAS is affected through Soft Kill and /or Hard Kill options.

Drone Detection Radar

Drone Detection Radar (DDR) is an FMCW based Radar designed to detect and track mini and micro class Drones/UAVs. The product delivers a complete surveillance solution (Search &Track) to threats from Drones/UAVs.

The transmitted power is very low and hence LPI (Low Probability of Intercept) Capable. Due to its LPI capability, it is extremely difficult for intercept receivers to correctly identify the Radar parameters and Radar type. Its high processing gain and good range resolution enables very low RCS target detection. DDR can also prompt other sensors like EO & Laser to take countermeasures against the threat by providing target range, azimuth and elevation.

It is capable of monitoring a designated airspace day and night in all weather conditions. It is easy to deploy and can be carried in a backpack and hence man portable.

Features:

- 3D Radar
- Digital Beam Forming in Elevation
- Low Probability of Intercept
- Detection Capability of Mini and Micro Drones
- 360 Deg Coverage
- Portable and Battery Operated

Surveillance Drones

For surveillance a variety of drones for harsh environment and swarm drone systems are available.



Border Surveillance Systems

Border Surveillance System (BOSS) provides all weather surveillance for day/night monitoring of Border areas. It consists of Battle Field Surveillance Radar (BFSR) and Electro-Optical (EO) sensors (Day/night cameras, eye-safe LRF and geo location sensors) mounted on the Pan-Tilt platform powered with renewable energy source.

Features:

- Automatic Motion detection
- Remote operation capability
- 20 km (wired & wireless) - On-site recording (14 Days) - Networkable - Equipped with Hybrid power source (15 days backup)

Battlefield Surveillance Radar

Battlefield Surveillance Radar – Extended Range (BFSR-XR) is a man portable, battery powered state-of-the-art Pulse Doppler Surveillance Radar capable of automatically detecting and displaying a diversity of moving targets such as pedestrians, group of men, vehicles, tanks, low flying Helicopters, etc.



Features:

- Light weight, man portable and fast deployment
- Operates 24 hours a day and under all weather conditions
- User-friendly menu driven interface based on Windows XP
- Instrumented range up to 30 km
- J-band Pulse Doppler Radar with Built In Test Equipment (BITE)
- Track while scan of up to 99 targets
- Low probability of intercept with low peak power
- High resolution, colored, north oriented radar picture displayed on portable PC.

Electro Optical Sensors

The Optic and Laser Systems offer a range of high-performance tools for various applications.

The lightweight laser range finders provide accurate distance, azimuth, and elevation measurements instantly, with an impressive range of up to 20 km. These systems are invaluable to the army and navy for effective target engagement.

Offered are also advanced night vision systems utilizing uncooled thermal imagery technology. These compact and lightweight systems provide clear vision in low-light conditions, with a maximum resolution of 640x480. The products are rugged, featuring exterior powder coating and composite non-breakable material.

Additionally, Gas Chromatograph-based electronic-nose vapor detectors are provided.

Defence Radar Systems

Surveillance Radars

The 3D Tactical Control Radar is state-of-art medium range Surveillance & Tracking radar designed to effectively play the role of medium range surveillance radar mounted on a mobile platform. The radar operates in S-band and is capable of Track-While-Scan [TWS] of airborne targets up to 90 kms.

Features:

- 3D medium Range Surveillance and Tracking Radar
- TWS of airborne Targets up to 90 Kms
- ECCM features - Side-lobe blanking, Frequency agility and Jammer analysis
- IFF Mk XI with extractor & co-mounted antenna.
- Two vehicles for radar and power source
- Fully automated and controlled from Radar Console with user friendly GUI
- Dedicated and exhaustive on-line BITE facility
- Facility for crew training
- Facility for automatic transmission of data to Target Data Receiver (co-located with weapon system) up to a distance of 20 Km from radar using optical line, wire line and secure VHF radio set
- Data remoting of Tracks and plots over LAN to external networks - up to 500 m
- Facility for Remote control and diagnostic testing of the system from a distance of 100 meters

Fire Control Radars

The all weather low-level Air Defence Weapon Control system is a combination of Radar, Computer and Display that deals with the threat of hostile ECM protected air missions at tree top level. It is a highly mobile land based autonomous search cum track radar which meets the ever increasing threat from low flying high-speed aircrafts. It has all weather capability with timely detection, very accurate and unambiguous tracking, fast prediction of lead angles and built in counter-counter measures.

Features:

- Early detection and fast acquisition
- Air Search in 'I' and acquisition in 'I' & 'Ka' bands
- Dual Band 'I' and 'Ka' - tracking
- Computer assisted parallax calculation and ballistic data generation
- Track While Scan up to 3 targets
- Color Raster Scan Display with PPI & TV picture

- Tactical map presentation through Data Input Unit
- Communication between system operator and gun
- Built in ECCM

Weapon Locating Radars

The advent of long range weapon systems and mechanization of land forces have extended the area of operations much beyond the visual range. Weapon Locating Radars (WLR) have been primarily designed to locate hostile guns, mortars and rockets causing interference to the progress of our operation. WLR, in its secondary role, can track and observe the fall of shot from own weapons to provide corrections to own fire. A large quantum of artillery deployed on a wide front, coupled with movement of aerial objects, weather and ground clutter, presents a high density returned conflicting signals on the radar screen. These conflicting signals have to be processed in the real time and extract required information for gunners to complete their mission successfully. Detection, location and tracking of the requisite targets is handled by the advanced algorithms and state-of-the-art hardware. The ability to locate enemy weapons from its round and transmit the data of the required target to the counter fire elements for retaliatory strike before the target is redeployed is the key feature of the radar.



Defence Communications

Software Define Radio Handheld

UHF Handheld Transceiver is developed to meet the required short range ground to ground, ground to ship and ship to ship communication needs with protection against Electronic Counter Measures (ECM). The radio is provided with high-grade crypto frequency hopping.

Features:

- Range 108-155.975MHz & 225-399.975MHz
- Up to 8920 channels at 25kHz spacing
- Preset channels 40 in FF/Secure/ECCM mode
- Emission AM, FM & FSK
- Clear/Secure/Frequency Hoping (UHF Band)
- Frequency stability +/- 5ppm
- Hop rate 100 hop/sec
- Master/Slave sync (TOD Held by Stable clock)
- Data rate up to 8kbps sync in (FF/FH) mode

Data Radio DPWCS

Data Radio-DPWCS is a UHF trans-receiver in 400-470 MHz frequency band for data communication link between two nodes. That radio has high power (10W) transmitter and two receivers operated in Diversity Reception mode. The diversity reception helps in improved data connection wherein there is signal fading due to reflections. The radio offers ethernet connection for NMS operation. The radio provides data integrity in adverse conditions.



Features:

- Frequency Band 400-700MHz
- Data Rate 50kbps max
- Type of Emission GFSK, DSSS
- Mode of Communication, Hald Duplex
- Data Interface, Serial/Ethernet
- Space Diversity Reception
- Operating Voltage, 11.8V to 30V

Software Define Radio Manpack

SDR Manpack radio is a Next Generation, Multi-band, High data rate, IP radio with Mobile Ad hoc Networking (MANET) functionality. The radio works in wide frequency band in V/UHF range of 30 - 512MHz. The radio works in Frequency Hopping (FH) and Fixed Frequency (FF) modes with built-in-high-grade digital secrecy in voice and data modes. The radio is built around latest state of the art hardware using DSP and FPGA. The radio is designed as 10W man pack transceiver and has in-built MANET feature supporting up to 32 nodes and 5 Hops. The network is self-forming and self-healing and support network throughput up to 1Mbps.

Features:

- Frequency Range : 30 MHz to 512 MHz
- IP Mobile Ad hoc Networking up to 32 nodes
- Self configuring, Self healing network
- Frequency Hopping: 500 Hops / second
- Data rate: up to 1Mbps network throughput
- Plug In secrecy module with built in encryption
- Waveform loading through Front Panel
- Simultaneous voice & Data services
- Selective / Group Calling

Digital Mobile Radios

A variety of Secure Digital Mobile Radios, Digital Mobile Radio Handhelds, High Capacity Radio Relays and Software Defined Radios are available.

Optic & Laser Systems

Laser Range Finders

Multi-function Hand Held Thermal Imager is a cooled TI based integrated day/night sight with in-built eye safe Laser Range Finder, Digital Magnetic Compass, Colour CCD and GPS. This equipment is capable of giving range, azimuth & elevation and also coordinates of the target. This is highly useful to Army and Navy for effective engagement of targets.

Features:

- Compact and ergonomic design
- High performance, MWR, 3rd Gen, Indium Antimonide detector
- In-built Class-1, Eye safe LRT
- Integral day sight, color CCD camera, digital magnetic compass and GPS
- Binocular design with inter-ocular and inter-pupillary distance adjustments
- Display of range, azimuth, elevation, coordinates and other data

A variety of other Laser Range Finders, Mini Eye Safe Laser Range Finders, Light Weight Laser Target Designators and Binoculars are available.

Weapon Sights

Uncooled Thermal Weapon Sight for Assault Rifle is an Uncooled TI based System which is compact and lightweight monocular using Gen-III Uncooled Thermal imagery principle.

Uncooled Sight for Assault Rifle is a state of the art thermal weapon sight required for use of ground forces for surveillance, observation and fire fighting during night. The Uncooled Thermal Weapon Sight is rugged with exterior powder coating and composite non-breakable material. It is completely passive and silent in operation.

Features:

- Compact, light weight, rugged and ergonomic
- 3 Gen Uncooled amorphous Silicon detector
- Equipment is portable and provides adequate flexibility to move easily

A variety of other Weapon Sights are available.

Night Vision Devices

Passive Night Vision Binocular is a lightweight, durable, water proof and compact night vision device. It is a single tube full field binocular system. It is fitted with XD-4 High Performance Tube and adjustable

Features:

- Full field viewing / Hermitical sealing
- II Tube with built in bright source protection, reverse polarity protection & Automatic Gain Control (AGC)
- Inter-ocular and Dioptic adjustment
- Infra Red Illuminator / Low battery Indicator
- Bright light cut off facility while exposing high light
- Water resistant at 1 meter deep for 30 minutes

Night Vision Monocular is light weight device capable of being used as a hand held viewer, face & helmet mounted for night patrolling and surveillance and night firing. It is easily used as a hand held viewer, face & helmet mounted. It is provided with an Infrared Laser Illuminator for use in totally dark environment for recognition of ranges of 125 metres or better.

Features:

- Strain free viewing
- Military Grade II Tube with built in bright source protection, reverse polarity protection & Automatic Brightness control (ABC)
- Commercially rechargeable battery, run at least 8 hrs

A variety of other Night Vision Devices are available.



Fighting Vehicle Systems

Weapon Station

The Remote Controlled Weapon Station (RCWS) is intended to lay and stabilise the NSVT 12.7 mm/ PKT 7.62mm machine gun along with the optical sensors in traverse and elevation mounted on the Turret/Tank. The system provides movement of the gun in traverse and elevation along with independent movement of the sight in elevation and with limited freedom in traverse. The system allows the operator to control the gun & sight from the operating console and joy stick inside the turret. The optical sensors include a day camera, Thermal imager and a Laser range Finder integrated on a single housing. The system allows target tracking for air and ground targets and performs necessary ballistic computations to feed the ballistic offsets to the gun / sight. The system has a provision for the operator to do automatic loading and firing of the gun.

Features:

- Remote Firing option
- Automatic Cocking
- 2 Axis Self-stabilised platform
- Day Camera & Night Vision
- Automated FCS & Ballistics corrections
- Adaptive to suit any platform



Combat NET Radio

Next Generation tactical radio with software configurable features. The radio is designed primarily for tank and Armoured Vehicle role. The radio works in frequency VHF band in range of 30 - 88MHz. The radio works in Frequency Hopping (FH) and Fixed Frequency (FF) modes with built-in-high-grade digital secrecy in voice and data modes. The radio is built around latest state of the art hardware using DSP and FPGA. The radio is backward compatible with legacy radio in Clear, Secure and Frequency Hopping modes of operation. The radio has ECCM feature with hop rate of 250 hops per second. Radio has capability of data communication with maximum data rate of 19.2 Kbps.

Features:

- State of the art software intensive design
- Frequency Range 30MHz to 88MHz
- Ethernet and RS232 Interface
- Selective and group calling facility
- Frequency Hopping 250 Hops/second
- Data rate up to 19.2kbps
- Built in encryption

Electronic Systems

A variety like Digital Intercom Systems, Navigation Systems, Fire Detection & Suppression Systems and Driver Night Sight Systems are available.

Chemical Agent Monitor

Gas Chromatograph based electronic-nose vapour detector. It is capable of detection of Chemical Warfare Agents (CWA) down to few parts per billion concentration levels within a minute. It has high endurance and high efficiency.

Features:

- Sarin, Soman, Tabun, VX, Lewisite (Nerve Agents), Sulphur Mustard (Blister Agent), Phosgene (Choking Agent), Hydrogen Cyanide (Blood Agent)
- Sensitivity: Nerve <7ppb, Blister <77ppb, Blood <20ppm and Choking <5ppm
- Size 30x10.5x12cm³
- Continuous operations > 8hours
- Weight 3.1kg with batteries



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Naval Solutions

Gun Systems

The naval gun drive system is a robust and reliable solution designed for air defense applications on naval vessels. It features a 6-barreled 30 mm gun.

The drive units of the gun mount enable precise positioning of the gun in both azimuth and elevation, following commands from the fire director system or standby control post. This system ensures quick response and accurate targeting capabilities, enhancing the ship's defensive capabilities against airborne threats.

With its advanced technology and seamless integration, the naval gun drive system provides a vital component for naval vessels' air defense capabilities.

Naval Communications

The naval communication system is a state-of-the-art solution designed to streamline and integrate communication capabilities across naval vessels.

This multi-services shipboard network converges voice traffic, real-time video, and traditional data communications onto a single broadband infrastructure. With triple redundancy, it ensures high reliability and resilience. The system is flexible and modular, accommodating various equipment and systems onboard including radars, sonars, fire control systems, EW systems, CAIO (Computer Aided Information Organization), and Ship's Household Data (SHHD) equipment.

This comprehensive network enhances situational awareness, facilitates efficient information sharing, and supports critical operations for naval ships, providing a unified communication platform for effective command and control.

Radar and Sonar Systems

A range of cutting-edge technologies to enhance maritime operations are offered.

The Radar Systems include the 3D Surveillance Radar, a ship-borne radar that incorporates advanced features like a digital receiver and programmable signal processor for high resolution, accuracy, and information availability. This radar can auto-track up to 150 targets, including IFF tracking, and simultaneously forms multiple reception beams for height estimation. With excellent ECCM capabilities and hydraulically stabilized antenna, it seamlessly interfaces with ships' household data and combat management systems. The modern Radar systems also feature a long-range air surveillance radar designed for large and medium naval ships. It provides a detection range of up to 190 km and height coverage up to 40,000 ft, utilizing the L band frequency for long-range surveillance and optimal probability of detection.

These radar systems ensure early detection of potential threats and enable effective response to high-speed and maneuverable targets, enhancing the defense capabilities of naval forces.

Gun Systems

Electro Optics Fire Control System

The Electro Optical Fire Control System (EOFCS) is a compact, 2 axes stabilized, high performance system for control of short and medium range naval gun mounts.

Features:

- High Pointing and Tracking Accuracy
- 2 axes Gyro Stabilized
- Control of medium & short range guns
- Engagement using sighting device or Electro Optic Director (EOD)
- Integrated ballistic computer
- Manual target acquisition
- Operation in integrated mode with a Combat Management System or in stand-alone mode
- Day & night operation
- Modular Design
- Fast sensor exchange

LYNX Fire Control System

State of the art, Quick Reaction, Multi Sensor & Compact Naval Gun Fire Control System Designed to acquire, track and engage both AIR, SU & NGS Targets. Configured with X band Radar as Fully Coherent & Mono Pulse Tracker as Main Fire Channel 01 x Medium Range GM (SRGM,AK176, A190, SRGM-UG) 02 / 04 x Short Range GM (AK 630) LYNX U2 Is Classified into 'Five Functional Blocks Tracker / Weapon / Engagement Control System / Sight Control / support Systems.

Features:

- Accurate Target Tracking of both Air & Surface Targets
- Tract Data Generation for Weapon Control & Aiming
- Target Engagement with Medium & Short Range Gun Mounts with "Tracker" & "Manual" mode of control



Naval Communications

Advanced Composite Communication Systems

Advanced Composite Communication System (ACCS) is an IP based new generation Voice, Data and Video Integrated communication system, designed primarily to provide connectivity between remote users and radio equipment for accessing, monitoring and controlling along with other services like intercom, Automatic Message Handling System (AMHS), FAX, Non Operational Computer Resources (NOCR) Net, Video conferencing and IP Surveillance onboard warships. ACCS is designed to ride on the Ethernet (IP) backbone being installed on future naval ships. The physical connectivity with the IP backbone (1Gbps) is through Ethernet (CAT6) cable at 100Mbps. The system is highly flexible and can be configured for all classes of ships and submarines.

Features:

- Control & Monitoring Subsystem (CMS)
- Radio Subsystem (VLF/MF/HF/VHF/UHF)
- SATCOM Subsystem
- Antenna Subsystem
- Audio Subsystem

VLF-HF Communication Systems

HD-VLF Communication System provides secure transmission and reception of data at 800 bps. It comprises of HD-VLF Modulator and HD-VLF Receiver, HD-VLF Modulator has the capability to broadcast secure VLF data in interface with high power VLF transmitter, HD-VLF Receivers are capable of receiving VLF and HF broadcast data.

Features:

- Frequency Band -10kHz to 30 MHz
- User Throughput up to 800 bps (VLF)
- VLF Modulation GMSK, MSK, CW, OOK
- HF Modulation CW, AM, DSB, USB, LSB, ISB
- Online secrecy

Software Define Radio - Naval

SDR-NC is a Multi-mode, Multi Band shipborne Software Defined Radio (SDR) for Naval Communication in 3 to 512 MHz RF band. The SDR has high assurance security architecture and high level software operating environment in line with Software Communication Architecture (SCA) standard. The radio has accessories for remote control operations and security management.

Features:

- Re-Configurable and upgradable through Software
- SCA 2.2.2
- Integrated secure speech and ECCM enabled data communication integrated HMI

Software Define Radio – Tactical

SDR-TAC provides Ship-to-Coast, Ship-to-Air and Ship-to-Ship communication and network-centric applications in both narrowband and wideband communication in V/UHF and L-Band. The Radio system provides four channel capability. TAC is a 19" rack-mount enclosure designed for rugged and reliable operations to withstand extreme environmental conditions of temperature, humidity, shock and vibration.

Features:

- Frequency Band 10kHz to 30 MHz
- User Throughput up to 800 bps (VLF)
- VLF Modulation GMSK, MSK, CW, OOK
- HF Modulation CW, AM, DSB, USB, LSB, ISB
- Online secrecy

Topo scatter Modem

Quad diversity Tropo-scatter modem provides communication beyond the horizon by using a radio path through the troposphere. The Tropo-channel has severe frequency selective fading with time variant deep fades due to varying weather conditions. OFDM based Quad Diversity Modem combats Long/short term fading behaviour of Tropo-channel.

Radar & Sonar Systems

3D Surveillance Radar

3D Surveillance Radar is a ship borne Radar. The radar has advanced technologies like digital receiver, programmable signal processor providing high resolution, accuracy, response and information availability. The radar can auto track up to 150 targets including tracking with IFF. The radar simultaneously forms multiple beams in reception which are used for estimating height. The radar has excellent ECCM features. The antenna of the radar is hydraulically stabilized. The radar incorporates interfaces with Ships Household Data (Gyro, Log, GPS etc) with Combat Management Systems (CMS) onboard.

Features:

- Medium range 3D surveillance
- Range – 210 km
- Integrated IFF with co-mounted antenna
- Clutter/Weather/ECM video maps
- Jamming analysis and presentation
- COTS hardware for maintainability and cost effective surveillance solution

2D Long Range Surveillance Radar

Modern Radar systems are required to provide fast and effective response to present day threats characterized by high speeds and high manoeuvrability. The First Defence Layer in a combat system being the long range air surveillance Radar whose main task is “early detection” of the vital, potential threats. It’s a long range air surveillance radar designed for use on-board large and medium Naval Ships for air warning and target detection.

The Radar provides a detection volume space up to 190 Kms in range and height coverage up to 40,000 ft. The operational frequency band of the Radar is L band. The application of this band together with the use of Solid State Transmitter with optimum duty ratio guarantees long range surveillance and better probability of detection.

Features:

- Long range air warning
- High gain Antenna with low side lobes
- Two selectable antenna rotation speeds

- Solid state transmitter (power amplifier based)
- Low noise receiver / High ECM resistance
- Staggered mode of operation
- Sector transmission mode / Clutter suppression
- Optimized digital pulse compression
- 3 pulse canceller and FFT / CFAR and correlation

Sonar Solutions

Hull Mounted Sonar for Surface Ships is the Sonar for frigates and destroyers class of ships. The system configuration has a modular system architecture and open standard interfaces, so that variants of the system for each class of naval ship can be configured from the same basic building blocks, without having to start from scratch. The system is supplied with associated auxiliary equipment like (i) NACS, the Nearfield Acoustic Characterisation System for calibration of transducers, (ii) Sonar domes, and (iii) Directing Gears for the transducer array.

Features:

- Range 20-30 kms
- Simultaneous detection of 4 targets
- Reduced hardware volume
- Software based design and scalable signal conditioning
- Common wideband acoustic array catering to multiple requirements of active sonar and passive sonar

Submarine Sonar Suite is a compendium of multiple sensors for passive detection which collates different characteristics of the same target and provides target data through information fusion. The constituent sonars in the suite include passive sonar, active sonar, intercept sonar, obstacle avoidance sonar and underwater telephony. It is designed for EKM class of submarines.

Features:

- Easily scalable to submarine platforms
- Contact Motion Analysis
- Automatic Torpedo Detection
- End-to-End redundancy

Advanced Torpedo Defence and Light Towed Array Sonar Systems are also available.



Home Solutions

Public Security Systems

The homeland security solutions encompass integrated CCTV system solutions tailored to meet specific user requirements. Provided are comprehensive closed circuit television surveillance systems that ensure effective monitoring and surveillance in various configurations. In addition to CCTV, the product range includes a wide range of other security systems such as jammers, explosive detectors, non-linear junction detectors, baggage inspection systems, turnstiles, and more. Advanced closed surveillance systems, perimeter intrusion detection systems, power fences, radio frequency intrusion detection systems, and various access control systems like boom barriers, road blockers, tire killers, and turnstiles are offered. The expertise also extends to x-ray baggage inspection systems, enabling comprehensive security solutions for critical infrastructure and public safety.

Network Systems

Our transmission solutions are designed to optimize network performance for both residential and business customers, ensuring their complete satisfaction.

Our switches offer user-friendly browser-based interfaces, making installation and management a breeze. With quick and easy setup processes, including start-up, VLAN configuration, guest VLAN setup, and Quality of Service (QoS) settings, our switches enable seamless integration into existing networks.

Whether it's enhancing connectivity, improving network security, or ensuring efficient data transmission, our transmission solutions deliver reliable and simplified networking solutions that meet the diverse needs of our customers.

Solar Power Systems

The solar power solutions feature state-of-the-art mono crystalline solar cells, utilizing 156x156 mm wafers with an impressive efficiency of 18.9%.

Offered are also solar module plants capable of producing up to 320 W with an efficiency rating of 16%. Furthermore, we specialize in establishing large-scale solar plants in the megawatt range, working closely with developers and providing end-to-end Engineering, Procurement, and Construction (EPC) services.

With the cutting-edge technology and expertise, we deliver reliable and efficient solar power solutions that contribute to sustainable energy generation on a significant scale.

Railway Systems

The Real-Time Train Information System (RTIS) revolutionizes operations by providing accurate, real-time train information.

With RTIS-enabled locomotives, the control chart of trains is automatically plotted in the Control Office Application (COA) system. Train Controllers can effortlessly track the location and speed of these trains, optimizing traffic management and improving operational efficiency. The system utilizes the S-Band Mobile Satellite Service (S-MSS) of ISRO's GSAT 6 satellite and 4G/3G mobile data service for precise train location tracking. The installation includes the Locomotive Device, MSS Hub, and Data Centre, all equipped with cutting-edge hardware and application software at the Centre for Railway Information Systems (CRIS).

RTIS enhances operational efficiency, ensures passenger safety, and preemptively prevents accidents.

Public Security Systems

Cyber Security Systems

Enhance your organization's cybersecurity with the comprehensive suite of solutions and services.

The advanced data diode technology ensures a unidirectional flow of information, protecting against unauthorized access and data leakage.

Safeguard your sensitive data with the secure storage solutions, offering robust encryption, access controls, and reliable data backup. Our expert team provides security architecture conceptualization and consulting, designing a tailored framework aligned with your business objectives and regulatory compliance.

Additionally, our information security audits evaluate your IT infrastructure, policies, and procedures, identifying vulnerabilities and providing actionable insights for enhanced protection.

Strengthen your defenses and achieve peace of mind with our trusted cybersecurity solutions.

Other Security Systems

Any Homeland Security Systems are provided like Cell Phone Jammers to block and paralyze cell phone operations, Power Fences, Radio Frequency Intrusion Detection Systems, Explosive Detectors, Non-linear Junction Detectors, Under Vehicle Scanning Systems, Automotive Boom Barrier & Flap Barrier Systems, Road Blockers, Tyre Killers, Turnstiles and X-Ray Baggage Inspection Systems.

Surveillance Systems

Integrated Closed Circuit Television Surveillance Systems (CCTV) in different configurations as per user requirements..

Features:

- Analog CCTV System
- IP based CCTV System
- Thermal Imaging CCTV System
- Wireless CCTV System
- Intelligent Content Analysis
- System Components:
 - CCD Camera
 - Lens
 - Monitor B/W or Color of Different Size
 - Pan / Tilt / Zoom (PTZ) Unit
 - Pan /Tilt/ Zoom Controller
 - DIGITAL VIDEO RECORDER (D. V. R.)
 - Combiner - Quad Splitter / Video
 - Switcher / Channel Multiplexer
 - Outdoors Housing Case With Mounting
 - Bracket Signal Transmission Media –
 - Coaxial / Ground Loops / Fiber-optic Cable
 - Other Accessories - Video Amplifier, Time & Date Generator, Powered Cable



Network Systems

Business Ethernet Services

Watson Ethernet is the ideal system to connect business customers with bandwidth requirements beyond the traditional ADSL services but not big enough to justify the installation of optical fibers. Bitrates are provisionable from 0,2 Mbps up to 22,8 Mbps over one or several copper pairs, and the modems are designed to work over existing telephone-grade copper pairs (CAT-3). Deployment distances reach up to several kilometers.

Campus Networks

Watson Ethernet makes it possible to attach campus sites into the corporate network which could not be reasonably accessed by an optical fiber.

Linear Networks

Linear networks are frequently used in industrial applications, e.g. to control valve stations along pipeline or substations with a power network. With Watson Ethernet a single modem per station is enough to terminate DSL wire pairs from up to four directions and to provide local Ethernet add/drop interfaces.

Combined Ethernet and TDM Services

Small or medium size businesses require both high-speed Ethernet services for data communications and TDM-based E1 connections to connect to legacy private telephone exchanges. This deployment scenario is best covered with the Watson Ethernet Multiservice modems that integrate E1 and Ethernet interfaces in a single device.

Ethernet transport over TDM Networks

Combining Watson Ethernet modems with Watson TDM enables transport of Ethernet packets over TDM-based networks without any additional conversion devices. In this application the customer sees a native Ethernet interface while in the Central Office E1 or serial (nx64kbps) circuits are deployed. The conversion from Ethernet to E1/serial and back is handled directly in the modems.

Mobile Backhaul

E1 DSL modems have helped build high-capacity mobile backhaul networks of major Mobile Carriers worldwide. Watson TDM follows this tradition: a single modem can connect 4 E1 circuits, providing a total bandwidth of 8Mbit/s. When bandwidth requirements increase the Watson TDM modems can be configured into high-capacity operating mode essentially doubling the available bandwidth to a cell site.

Hybrid Backhaul

Ethernet backhaul services at Cell Sites drastically reduce the cost to carry mobile data traffic originating from UMTS- or HSPA-capable mobile devices. At the same time the site needs one or two E1s for co-located GSM base stations and to carry UMTS voice traffic. Watson Ethernet Multiservice modems give Mobile Carriers both Ethernet and E1 interfaces in a single device.

Full IP/MGM Backhaul

Watson Ethernet modems are the optimal choice in an all IP, fully packet based Radio Access Network (RAN). E-Line and E-Tree Carrier Ethernet services as defined by the Metro Ethernet Forum are supported to provide standardized backhaul services and seamless integration with the Carrier Ethernet network.



Solar Panel Systems

State-of-the-art mono crystalline solar cells based on 156x156 mm wafers with an efficiency of 18.9%.

Solar modules with up to 320 W with an efficiency of 16% for setting up megawatt scale solar plants.



Railway Systems

Automatic Fare Collection Gating System

The Automatic Fare Collection Gating System (SWAGAT) eases any national mobility.

Automatic Fare Collection Gating System

Communications-based Train Control is a railway signaling system that makes use of the telecommunications between the train and track equipment for traffic management and infrastructure control. With CBTC, the exact position of a train can be known more accurately.

Real-Time Information System (RTS)

RTIS provides real-time train information to increase the operational efficiency of Railways along with enhancing passenger safety.



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