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Airport Solutions

About IEI (Iran Electronics Industries)

Iran Electronics Industries (IEI) as the largest company in the fields of Electronic, Telecommunication, Defensive and Commercial Electro optics in the country meanwhile, industrial and technical interactions with more than 170 technological companies and establishment of 14 technological joint centers with domestic authentic universities, provides types of electronic products and services such as Radar, Electronic Warfare (EW), IT, Secure and Reliable Communication, Optics and Laser, Cyber defensive, Electronic Components, and required Space Systems for military forces and defensive industries in order to establish and increase the deterrent power and defense.



About ICI (Iran Communications Industries)

Iran communications industries (ICI) affiliated to Iran Electronics Industries (IEI) was established in 1972 with more than 35 years of credible reputation directed to manufacture diversity of communication means and participate in all international tenders with over 1000 skilled and educated personnel and lustrous background of successful experience is the main producer and designer of military/paramilitary communication equipment and total solution in Iran and middle east.

The principal mission of ICI is researching, designing and manufacturing various types of communication systems in military/non- military fields; as well as designing and implementing total solutions such as EW, C4I, jamming networks and ECCM systems in order to establish a stable, secured and flexible communication with a suitable capacity and also developing and open architecture radio waveform technology that allows multiple radio types to communicate with each other with the goal of meeting diverse communications through the latest and state of art technology communication means & networks.

Also ICI has the capability of repairing, renewing, manufacturing and assembling different types of communication means, as well as providing after sales services and technical consulting to have a continual improvement and development.

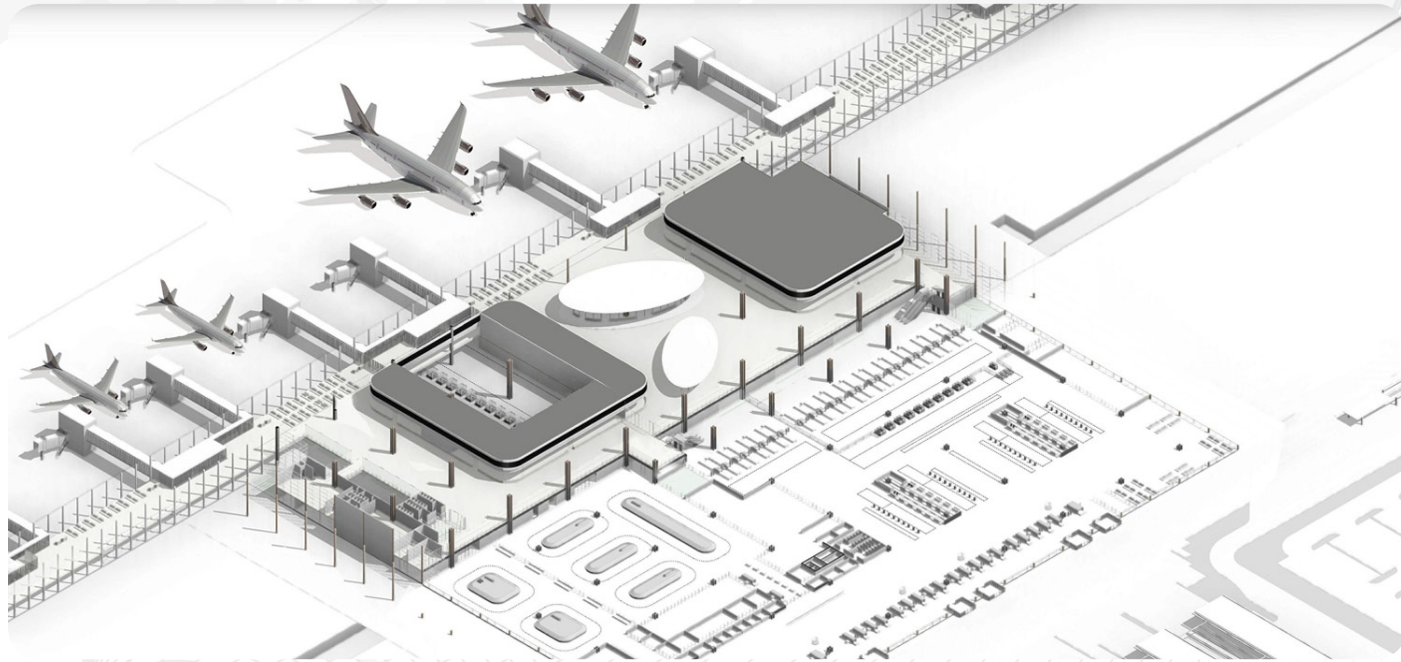
Effective presence and implementing national projects in the fields of communication with the co-operation of IN/OUT companies and exporting various kinds of communication products, technical engineering services to foreign countries are important pace in renewing and developing our national industry.

Concentrating on time, cost and quality management, developing human resources, and staff motivation are our main purposes.

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International Airport Engineering, Procurement & Construction



Our company provides complete airport consultancy, Planning, design, engineering services, procurement of equipment and commissioning in collaboration with its network of advisors, specialists, economists, airport architects, engineers and builders.

Capabilities

- ✓ Feasibility studies
- ✓ Development
- ✓ Re-construction
- ✓ Master plan preparation

Air Traffic Control Towers



Our company provides technical and consulting services and executing with Expertise in the following areas:

- ATC System integration
- Air Traffic Control Tower System

ATC Tower includes Following Systems:

- Airfield Lighting Control
- MET Info Display
- Nav-Aids Status Monitoring & Control
- D-ATIS / VOLMET
- AMHS
- Data link Departure Clearance
- Flight Data
- Publications
- Maps
- CAT III Status Panel
- Crash Alarm / Red-Telephone
- AFTN /AMHS Display
- Direction Finder
- GPS Time
- Tower Cabin Task Lighting
- Video Surveillance
- Entrance Control
- Data logging of all I/O systems
- Alarm Monitoring & Control
- Radio Control Panels

MATC-720/E Mobile Air Traffic Control Tower



Mobile ATC towers (MATC) are used as temporary or emergency air traffic control solutions when there is no local infrastructure available or damaged due to adverse weather conditions to manage flight operations and ensure flight safety at all times. Civil mobile towers can provide reliable, easy-to-operate air-ground and ground-ground communications.

MATC provides all ATC equipment needed for rapid, safe and reliable ATC operation. It is a completely self-contained system designed for quick installation and for long-term deployment under adverse weather conditions.

Capabilities

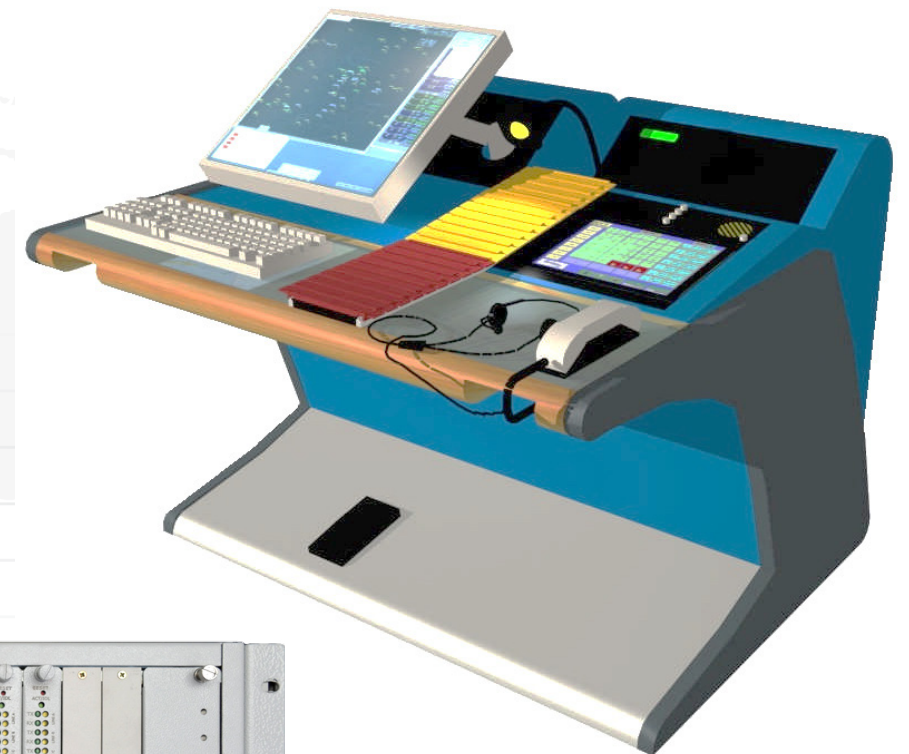
- ✓ Equipped with various VHF radio communication systems
- ✓ Equipped with complete weather forecasting equipment
- ✓ Establishing multilayer communication with pilot of plane/helicopter
- ✓ Movability and tactical usage of the system to establish and operate in various ecological conditions
- ✓ Erecting the tower cabin up to 6m height from the ground using hydraulic/mechanical mechanism
- ✓ Equipped with independent diesel power generator along with specific trailer
- ✓ Equipped with obstacle light

Main Features

- Completely self-contained
- Elevate to 5m floor height
- Windows with 360° vision
- Automatic power supply & distribution system as well as integrated UPS and diesel generator
- Lighting: Day light, night blue or white light, emergency light, working positions lighting, obstruction lights, rotating beacon, LED lights throughout including the stairs
- Protection in configuration: Lightning conductor, fire safety system, safety lights, external light kit
- CNS systems (ATC, VCS, VHF transceivers, Last resort radio, Emergency radio, VoIP, Tel. & direct lines)
- AWOS system: Local Meteo. sensors, indicators/displays
- Recording and replay system (VDRS): Audio, data, screenshots, surveillance video
- a360° panoramic day/night vision camera system
- GPS Time Reference System



VCCS-920/E Voice Communication Control System



VCCS-920/E Voice Communication Control System is a complete digital product designed to control air traffic according to international standards operable in air traffic control/management towers in airports. Actually this system has been designed and manufactured for reaching two important goals: controlling the communication remotely and integrating the communication. Both of these together are the main advantage of the system. Benefitting from the system along with its accessories and related software, operators of the air traffic control towers can establish complete communication easily with various radios operated in the centers. In addition, the operators can control other operating systems such as public telephone, fire station, and emergency.

Technical Capabilities

- ✓ computer/key operating console (up to 20 subscribers)
- ✓ GSM lines, various PSTN, HOT LINE and intercom
- ✓ Voice recorder module and logging the events in complete details
- ✓ GPS central clock module
- ✓ Expanding the system capacity by additional modules
- ✓ Public announcement module

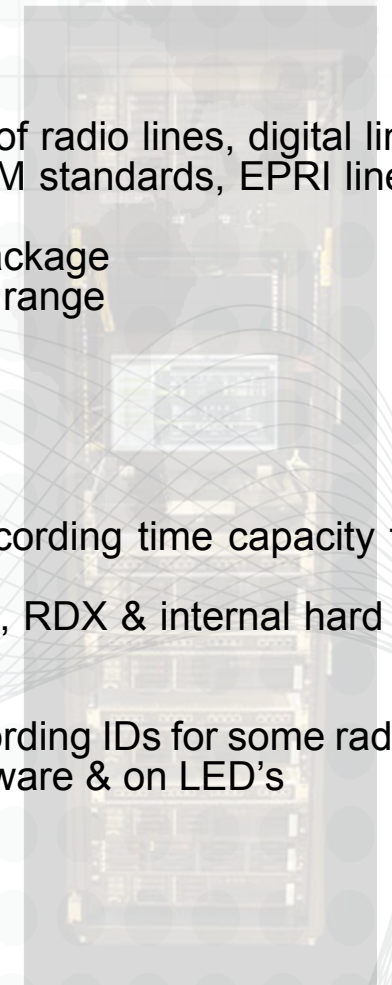
Voice Recorder System



This system has been designed for different applications either from coverage of various communication lines or from type of operation (military, aviation, industrial, non-military ...) and considering its structure (no limitation in number of the channels, time capacity, complete industrial/military package, modularity ...), it covers a wide range of subscribers. Voice recorder systems can be provided in various packages considering the customer's requirement. This system can be provided as the PCIe/PCI internal cards or external PC base industrial modules as well as a complete package without needing computer. The system can be installed inside all critical centers such as air traffic control tower of airports, crisis management centers, fire stations, ports, railway control centers, and every organization where establishing telephone/radio communication is very important.

Technical Capabilities

- ✓ Recording all types of analog lines, all types of radio lines, digital line BRI in Panasonic, Ericsson PBX on the base of SOM standards, EPRI lines and VOIP lines
- ✓ Integrating all types of telecom lines in one package
- ✓ Presenting in industrial, stationary & movable range
- ✓ Guaranteed quality
- ✓ System security
- ✓ Assurance in recording
- ✓ Continuous system testing using pilot signal
- ✓ Secured monitoring from remote area
- ✓ Support unlimited channels and unlimited recording time capacity for the channels
- ✓ Archiving on different drives such as SD card, RDX & internal hard disc & network
- ✓ Registering standard ID Caller
- ✓ Registering dialed numbers, Possibility of recording IDs for some radio system and presenting channel situation in the software & on LED's



Mobile Area Control Center



A center or en-route center:

- is responsible for controlling aircraft flying in a particular volume of airspace (a flight information region) at high altitudes between airport approaches and departures.
- Flight information region controlled by a center may be subdivided into areas comprising many sectors.
- Each area is staffed by a set of controllers trained on all the sectors in that area.
- Sectors use distinct radio frequencies for communication with aircraft.

Infrastructure communication

- Satellite communication
- LOS communication
- Fiber optic communication

Capabilities

- ✓ Design & Site Survey for Country Communication coverage
- ✓ Sectors Definitions
- ✓ RCAG Design and Implementations
- ✓ Equip RCAG & ACC Centre

Major Equipment

- Radar monitoring system
- VRS (Voice Recording System)
- AWOS monitoring
- VHF/UHF radio communication systems
- VCCS (Voice Communication Control System)
- Infrastructure communication
- Emergency power generator and UPS
- Management Software
- CWPs (Controller Working Positions)

Remote Centre Air/Ground Communication (RCAG)



Our company provides technical, consulting services, executing and overhaul of the RCAGs (Mobile and fixed). Since vital role of RCAGs, any communication disconnecting will be caused a non-covering region. Due to avoid this problem, we develop a rapid deployable mobile RCAG for temporary substitution by failure fix center until the specialists have enough time to repair or overhaul the center.

Advantages of Mobile RCAG

- Quick Replace for Fixed RCAG in critical conditions
- Suitable Alternative to repair Fixed RCAG
- Fast and precision Site Survey for extend covering Area

Mobile Command Post Vehicle of Airport



Mobile Command Post Vehicle (MCPV) is a custom-built robust vehicle equipped with advanced command, communication and control equipment for emergency responses and event management in airports.

MCPVs can be equipped with hi-tech GPS satellite phones, conferencing facility, emergency operation equipment, portable sign boards, shelter tents, binocular and different communication radios along with medical emergency related stuffs.

Search and Rescue System



The Search and Rescue off-road Vehicle (SRV) is a quick response vehicle especially designed to react to the flight emergencies and plane crashes to provide assistance to aircraft in distress and disaster.

SRVs can be equipped with hi-tech GPS satellite phones, conferencing facility, emergency operation equipment, portable sign boards, shelter tents, binocular and different communication radios along with medical emergency related stuffs.

Airfield lighting solutions



Our company provides and executes a comprehensive range of airfield lighting solutions for clients all over the world.

Our range of airfield lighting includes:

- LED and tungsten halogen airfield luminaires for runways
- LED and tungsten halogen airfield luminaires for taxiways
- Approach lighting
- Threshold lighting
- PAPI lighting
- Taxiway guidance lighting and signs
- Airfield lamps
- Obstruction lighting

We can also supply supplementary products including AGL cable, AGL transformers and connector kits.

Portable AGL (Airfield Ground Lighting) Tester



The AGL Tester has been designed to provide a safe and easy way for testing both-LED and Halogen luminaires before, during and after installation. This provides a cost effective solution for both commissioning and maintenance.

- Approximately 299 tests can be carried out on a full charge.
- Output: 3.5 to 4 Amps AC
- Charging: 220 VAC 50/60Hz@700mA or 12 VDC Vehicle Charger.
- Operating Temperature -20°C to +50°C

Guidance Signs



LED Signs are fully dimmable from 2.8A to 6.6A or (110 to 240V AC) and have inbuilt redundancy should individual LEDs fail. The cabinet is a robust, powder coated aluminum extrusion, using stainless steel fixings throughout. It is sealed using gasket from the glazing industry to ensure a weather tight enclosure.

Taxiway Signs are designed to meet the following standards:

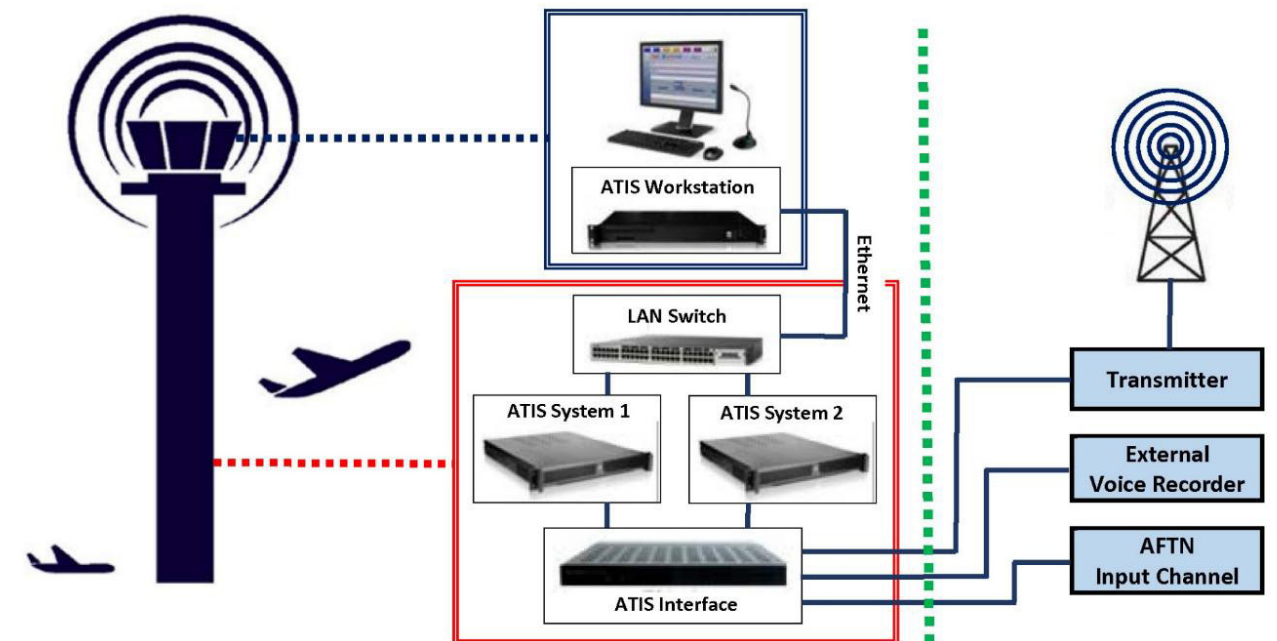
- ICAO Annex 14-Vol. 1 Para 5.4 & Appendix 4, July 2004 and associated Aerodrome Design Manuals.
- UK CAP 168, May 2006
- CE Approved

Airport Apron Lighting



Apron lighting is the necessary part of modern airports lighting. The good apron lighting considerably facilitates the apron maneuverings for aircraft pilots. It also increased safety and speed of maneuverings, the quality of maintenance by comfortable vision conditions for attending personnel. All of these are the important factors for fail-safety and reliable flight service.

Automatic Terminal Information Service (ATIS)



The ATIS is a computerized ATIS/D-ATIS-VOLMET/D-VOLMET information system automatically generating a speech message from data and text input. The module is equipped with a user friendly interface allowing the message to be composed with a minimum of operator input. Parameters that are monitored by the system are automatically extracted from the real time database. Other standard information is entered by simply entering the parameter values and the system will generate the complete message automatically. It is also possible to add a free text message when required.

Features

- Analogue and digital outputs
- Automatic data import from meteorological sensors
- Automatic data import from METAR messages
- Multiple operator terminals
- Dualised architecture available
- Full Data-link compliance (D-ATIS/ D-VOLMET)

GRC-625/E VHF Ground-Based Radio Communication System



GRC-625/E is a ground-based radio Communication system in VHF band (118~136.991 MHz) for establishing Ground-to-Air communication in air traffic control towers (ATCs).

Key Features

- SDR (Software Defined Radio)
- Modular Architecture
- Containing Efficient Built-In Tests (BIT)
- Advanced Software/Hardware Technology
- Easy Installation and Set-Up
- Containing High Resolution Display (9" TFT Display)
- Resistant to Shock, Vibration, Humidity, High Temperature and Low Temperature

General Specifications

Frequency Range.....	VHF: 118 ~ 136.975 MHz
Channel Spacing.....	25 kHz, 8.33 kHz
Number of Preset Channels.....	119
Power Supply.....	DC supply: 28 VDC AC supply: 230 VAC
Power Consumption.....	Approx. 150W (Receive Mode, DC) Approx. 450W (Transmit Mode, DC)
Radio Mode.....	AM A3E Standard
Radio Control Interface.....	RS422 10/100 Ethernet (RJ45 Connector)

Transmitting Specifications

Output Power.....	AM Carrier Power: 40W ± 1dB
AM Modulation Factor.....	At Least 80%
Modulation Distortion.....	Maximum 5%
Harmonic Suppression.....	≥ 70 dBc
Non-Harmonic Spurious Suppression.....	≥ 80 dBc
AF Input.....	200 mV to 600 mV RMS into 600 Ω ±10%
AF Response.....	300 to 3400 Hz

Receiving Specifications

Receiving Sensitivity.....	AM: -103 dBm for 10 dB SINAD
Selectivity.....	Wideband: ≥ 60dB/ ± 25 kHz Narrowband: ≥ 40dB/ ± 8.33 kHz
Squelch Sensitivity.....	Setting the Squelch on/off Points in 5~25dB Output SINAD
Image Rejection.....	-80 dB
IF Rejection.....	-80 dB
Loudspeaker Output.....	2 W
Sound Recorder Output.....	700mVrms into 600 Ω
Differential AF Output.....	700mVrms into 600 Ω balanced
AF Response.....	300 to 3400Hz
Audio Distortion.....	Maximum 5%
Receiver Input Protection.....	+30 dBm Input

Physical/Environmental Specifications

Dimension of R/T Unit.....	19" Standard Rack, 3HU, 480 mm Depth
Weight of R/T Unit.....	Maximum 28 kg
Dimension of Remote Control Unit.....	100×132×202 mm
Weight of Remote Control Unit.....	Maximum 2 kg
Operating Temperature.....	-20°C ~ +55°C
EMC Standard.....	MIL-STD-461F

GRC-630/E VHF/UHF Radio family for ATC communication



GRC-630/E represents the latest generation of stationary radios for both civil and military air traffic control. Possible applications range from small airport emergency systems requiring only a few radio channels to countrywide communications systems with several hundred radio channels.

Product Overview for the VHF and UHF Frequency Ranges

GRC-630/E radios for the VHF frequency range (118 MHz to 136.975 MHz) are suitable for civil applications. This radio for the UHF frequency range (225 MHz to 399.975 MHz) is suitable for applications in military air traffic control (air force, navy, army aviation forces).

VHF Receiver

118 MHz to 136.975 MHz

VHF Transmitter

40 W, 118 MHz to 136.975 MHz

UHF Receiver

225 MHz to 399.975 MHz

UHF Transmitter

40 W, 225 MHz to 399.975 MHz

Key Facts

- Output power of 40 W for VHF and UHF
- Automatic main/standby operation
- 8.33/25 kHz channel spacing for VHF and 25 kHz channel spacing for UHF
- Carrier offset (only in VHF)
- Excellent RF characteristics
- High intermodulation rejection
- High output power at high modulation depth
- Receiver with excellent immunity to interference
- Cross modulation rejection better than required by ETSI standard
- Low noise/low distortion receiver mode
- Very compact design
- Five basic modules: transmitter, receiver, power supply, power AMP, Baseband unit
- The transmitter is designed for 15 W continuous (ideal for ATIS)
- The AC power supply has a wide supply voltage range (230V AC or 115V AC)

General Specifications

Channel Spacing.....	25 kHz, 8.33 kHz
Number of Preset Channels.....	119
Power Supply.....	DC supply: 28 VDC AC supply: 230V AC or 115V AC
Power Consumption.....	Approx. 120W (Receive) Approx. 420W (Transmit)
Radio Mode.....	AM A3E Standard
Radio Control Interface.....	RS422 10/100 Ethernet (RJ45 Connector)

Transmitting Specifications

Output Power.....	AM Carrier Power 40W ± 1dB
AM Modulation Factor.....	At Least 80%
Modulation Distortion.....	Maximum 5%
Harmonic Suppression.....	≥ 70 dBc
Non-Harmonic Spurious Suppression.....	≥ 80 dBc
AF Input.....	200 mV to 600 mV RMS into 600 Ω ±10%
AF Response.....	300 to 3400 Hz

Receiving Specifications

Receiving Sensitivity.....	AM: -103 dBm for 10 dB SINAD
Selectivity.....	Wideband: ≥ 60dB/ ± 25 kHz Narrowband: ≥ 40dB/ ± 8.33 kHz
Squelch Sensitivity.....	Setting the Squelch on/off Points in 5~25dB Output SINAD
Image Rejection.....	-80 dB
IF Rejection.....	-80 dB
Loudspeaker Output.....	2 W
Differential AF Output.....	0dBm into 600 Ω balanced
AF Response.....	300 to 3400Hz
Audio Distortion.....	Maximum 5%
Receiver Input Protection.....	+30 dBm Input

Physical/Environmental Specifications

Dimension of R/T Unit.....	19/2” Standard Rack, 3HU, 330 mm Depth
Weight of R/T Unit.....	Maximum 10 kg (Transmit) Maximum 6 kg(Receive)
Operating Temperature.....	-20°C ~ +55°C
EMC Standard.....	MIL-STD-461F

Airport Maintenance and Repair Center



This center is used to maintenance, repair and overhaul of airports communication, electrical and navigation systems. Based on the mission type, repair centers include two main groups that are as follows:

- Fixed Repair Station
- Mobile (moveable) Repair Station

Advanced Visual Docking Guidance System (A-VDGS)



Our advanced visual docking guidance systems ensure safe and precise aircraft stops every time, even in low visibility.

The A-VDGS plays a key role in our intelligent APRON offering, acting as intelligent sensors at the gate to collect and distribute real time gate intelligence and accurate flight information between stake-holders for more efficient aircraft turn arounds.

Foreign Object Debris (FOD) Detection System



In aviation and aerospace, foreign object debris (FOD), is any particle to substance, alien to an aircraft or system, which could potentially cause damage. External FOD hazards include bird strikes, hail, ice, sandstorms, ash-clouds, or object left on the runway.

Laser FOD (LFOD) detection system uses high speed cameras, custom optics and laser line projectors to acquire both 2D images and high resolution 3D profiles of airport runways, taxiways and aprons in order to automatically detect even the smallest objects at highway speeds.

The LFOD system can be operated both during day and night as well as under all types lighting conditions. Surfaces light by the sun or covered by shadows as well as pavement types ranging from dark asphalt to concrete can be scanned at inspection speeds from zero to a hundred km/h.



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