

Icom America Systems



SYSTEMS FOR PEOPLE WHO MAKE SMART CHOICES

Communication Solutions

- Privately Owned
- Conventional and Trunked
- On Premises and Wide Area
- Government and Commercial



Icom America Inc.



About Icom America Inc.

Located in Bellevue, Washington, Icom America's corporate headquarters houses an industry leading communications company.

Besides being the fastest growing Land Mobile radio brand, the Icom name is well known to the amateur (ham), marine, avionic and wide band receiver communities.

Icom America Systems (IAS) was developed by Icom America in 2002 as a "one-stop shopping" source for all your communications system needs. IAS designs, assembles, and installs complete custom-designed systems that can provide communications for a large area, campus, plant, or building.

Customer owned systems offer fixed costs, exclusive access plus total independence from the public power and communications grid.

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IAS Capabilities

One-Stop Systems Solutions for People Who Make Smart Choices

Icom America Systems, a business enterprise of the Land Mobile Division of Icom America, Inc., providing complete systems package for today's communication needs, assembling high quality "one-stop-shop systems" for installation at customer's locations around the globe.



Turn-key Convenience and Profitability for You

User-owned systems may be amortized over time with a specific "pay-back" period, unlike cellular services that continue as an ongoing expense. IAS trunked systems offer greater privacy than conventional 2-way and increased capacity (4-5 times more subscriber units than conventional). Icom America Systems are designed, assembled, tuned, aligned and staged prior to shipment. Our systems are ready to be installed upon receipt – and we will assist with installation if desired. IAS offers flexible solutions to handle many applications; trunked or conventional, local or wide area.

The FCC has made it clear:

January 1, 2013 is when radio systems must be 12.5 kHz or better narrowbanded.

No delays. No extensions.

– "Licensees, frequency coordinators, and equipment manufacturers reminded of narrowband migration deadlines in the 150-174 MHz and 421-512 MHz bands", FCC Public Notice DA 09-2589, December 11, 2009

IAS Capabilities

Privacy, Security & Narrowband Compliance

An IAS private radio system is more secure than cell phones, speeds communications within a group, and allows swift and efficient one to one, one to group, or one to all messaging. An IAS system is a closed system, offering optional independence from the power grid while providing greater privacy. IAS also offers flexible solutions to handle many applications; trunked or conventional, local or wide area. And you can count on IAS to migrate into narrowband or digital very narrowband at your pace and means – a “forklift upgrade” is not always required to realize the productivity and security benefits that digital radio has to offer.



Expert, In-House Design and Assembly Team

Icom America Systems offers a short path to build-out and implementation. Our systems specialists are well versed and experienced in creating turnkey systems. Our systems are designed, assembled, tuned, aligned, programmed and tested to the highest industry standards. Our staff of licensed technicians has extensive industry experience. All assembly is done “in-house” by the Icom America Team.





Flexible, Top-Shelf Components

All IAS system contents have been selected for their performance, reliability, history of operation in the field & value for the customer. IAS is proud to incorporate world-renowned “partner products” in its system solutions. And who better than IAS to introduce your team to IDAS™, Icom’s 6.25 kHz digital solution for today’s and tomorrow’s 2-way radio needs.

World-Class Support

Our large service facility and full time trained service technicians stand ready to assist. Only a small handful of companies offer complete systems packages and fewer still sell beyond their own brand. IAS’s loyalties are to you, to provide the best equipment for the application. Discover the IAS advantage.

Project Management

In addition to production and assembly of “stand-alone” RF communication systems, IAS offers complete project management services. Our project management partners are very experienced in all facets of “turn-key” systems implementation.

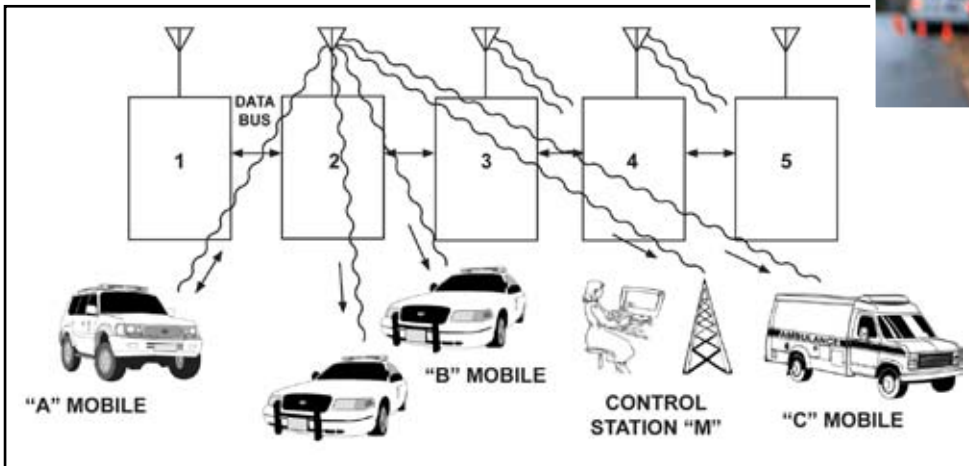


What is a System?

Conventional

Conventional 2-way Simplex

Communication to/from another radio (walkie-talkie mode). Since it is “line of sight” the range is limited by the curvature of the earth and obstructions.

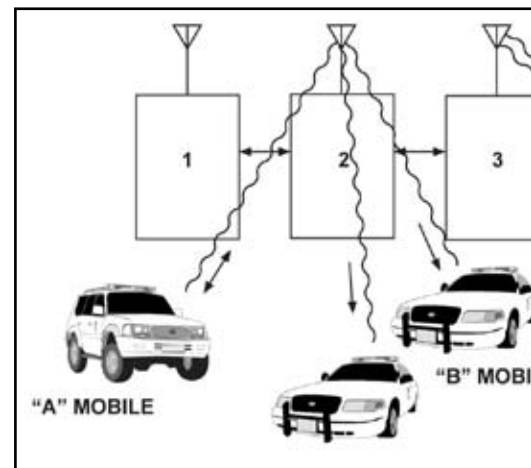


A conventional system is fine for smaller organizations, but may overload some channels while not utilizing other, open channels. Conventional systems are affordable and can be the ideal solution to many system needs. However, operating a conventional system is not always an efficient use of spectrum.

Conventional Repeater

A conventional repeater extends range by receiving the low power signal, amplifying it and retransmitting at a higher power. It is often located on a high point (mountain, tower or building) to increase the “sight line” over the horizon.

Repeaters may also be located in a plant, warehouse, yard, campus, etc. to increase range within a specified area. These may be high or low power.



Private system owners may load 4-5 times more subscribers per channel by using a trunked system. ▲

What is a System?

Trunked

Trunking is the automatic sharing of repeaters in a multiple repeater system.

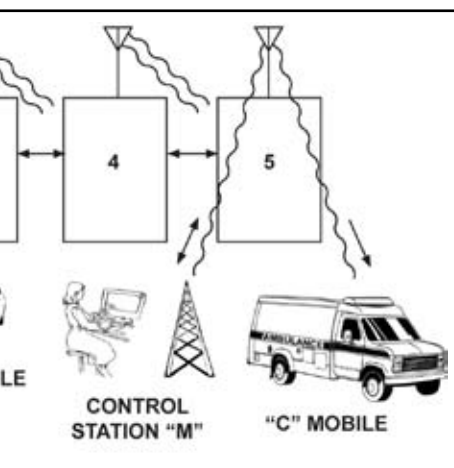
The basis of operation is that individual subscribers actually use the system a small percentage of the time, for short periods. And a large number of users don't use the system at the same time. This is the same theory for the public telephone system.

Conventional System (before trunking)

- One channel is busy while others are not being used at all. This is poor use of spectrum and limits the capability of the system.

Trunked System

- All channels are connected and calls are directed to open channels by a continuous exchange of data between the trunking controller and the individual subscriber units.
- In LTR® trunking, the repeater is held only for the duration of the transmission. A conversation of many transmissions may take place on several channels.



- Called "transmission trunking", LTR provides maximum efficiency. The time between transmissions can be used by others.

- All channels are utilized in LTR trunking. Other protocols require a "control channel", no available for normal transmissions. LTR is more efficient.

Other System Types

Interconnect

You can make or receive a telephone call with a 2-way radio when the repeater has a telephone interconnect feature, which connects it to the public telephone system.

During telephone interconnect operation, the Push To Talk button (PTT) must be pressed to speak and released to listen. This is termed "half duplex" operation.

Dispatch Operation

"Dispatch" is when one unit calls all the other units in a group. It could be the actual dispatcher or another mobile unit in the field. This is sometimes called "one to many."

Despite cellular technology advances, dispatch operation is best done by 2-way radio systems. Communication is instant, dependable and economical.



Types of Systems

IDAS™ Trunking

IDAS is the best choice of professional digital two-way radios available today. IDAS is a communications platform that will grow with your company into the future.

Greater audio quality, enhanced security, integrated data are all inherent in IDAS, which is available now in conventional mode for systems or with IDAS trunking where radio users find it hard to gain access to busy channels. IDAS trunking makes the most of the radio spectrum you have.

IDAS takes the idea of radio spectrum efficiency one step further. It surpasses the FCC current mandate to go to narrow band voice channels by leapfrogging the 12.5 kHz target and going directly to 6.25 kHz channels. This aligns with the FCC's vision of getting the 6.25 kHz in the near future.

IDAS trunking is similar in approach to other popular trunking methods. IDAS uses in-band control messages, but instead of sub-audible tones, IDAS uses digital control messages in the packet. IDAS trunking has more capacity than other means, and the big advantage of automatic switchover to a secondary home channel in the event the primary fails.



Despite the differences, an analog LTR® system can have a smooth migration to IDAS trunking since the subscriber radio (handheld or mobile) can understand both protocols and can scan between the two. Of course, since scanning requires checking numerous channels, care should be taken as the system scales in size so un-due decoding delay is not experienced.

Another feature of IDAS trunking is the controller is a module that is inserted into the repeater chassis. This saves rack space in the communications room, and simplifies set-up.

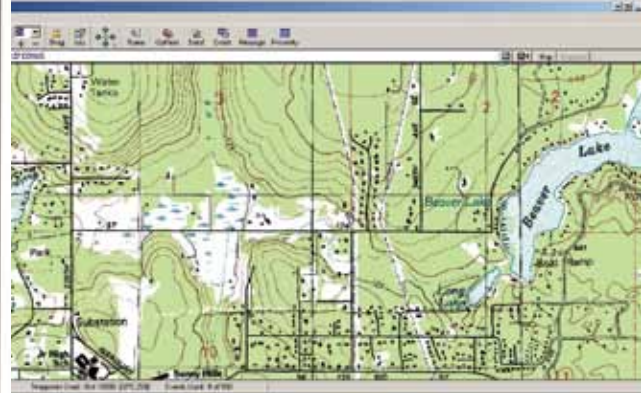
IDAS Multi-Site

An IDAS conventional IP network can extend your communication coverage. It lets you connect up to 16 dispersed sites and allows you to communicate like a single site. In the near future, IDAS multi-site trunking will be available.



iDAS™
ICOM DIGITAL ROVANCED SYSTEM

*IP virtual
radio*



Hybrid Multi-site System



F3161D series

F5000 series

F5061D series



CY5000 series

Types of Systems

P25 Trunking

The need for interoperability is well known in the Land Mobile Radio (LMR) industry. One means of implementing interoperability is the Common Air Interface (CAI) defined by the P25 standard that allows handsets from multiple agencies to communicate in the same area. Interoperability however is a much larger issue than simply having fire and police staff communicating between their handsets at the same incidence scene. That type of interoperability currently only exists in the telephone network.

A second technology being used to achieve interoperability is IP (Internet Protocol). IP technology allows multiple communications devices (telephone, LMR radio, and cell phone, PC) to be interconnected since they are all communicating in the common format of all digital IP packets. Voice over IP (VoIP) is the most familiar form of this type of communication allowing a standards telephone to talk to a PC based telephone. That same technology is now being used in LMR networks to achieve true interoperability.

Icom America Systems teams with partners to offer infrastructure equipment as a completely integrated P25 system solution, with full engineering, project management and field support to ensure performance. Customers will benefit from the “one source” opportunity to purchase a true “turn-key” P25 communication systems with all components designed to work together and supported by one team.

IAS offers a solution to agencies that currently use analog, but are planning to migrate to P25 conventional or P25 trunking in the near future. Icom America Systems will custom design a system that will work in all modes.



110W mobile kit

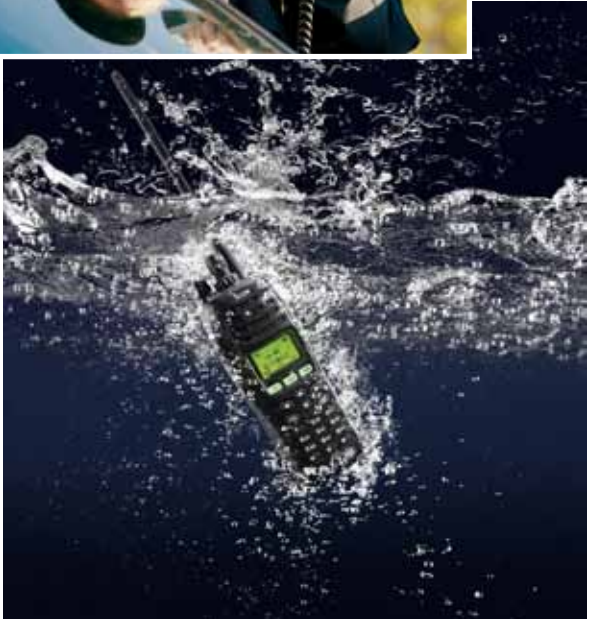


F9511S base





F9011 series



*F9511HT series
shown with optional
dual head and speaker*

System Components

Repeater

A receiver and transmitter in one unit. The signal is received on one frequency and re-transmitted on another. Repeaters may be low (5-30W) or high (50-100W) power. They may be mounted in an open rack, a tiered cabinet or a desktop housing. Several repeaters may be installed in one rack or cabinet.

Transmit Combiner

This enables 2 or more transmitters to operate from a single antenna at the same time. The transmitters of all the repeaters in the system are connected to the combiner.

Receiver Multicoupler

This enables multiple receivers to operate on a single antenna. It amplifies weak signals and rejects all unwanted ones. Directs each received signal to the proper receiver. The receivers of all the repeaters in the system are connected to the multicoupler.

Duplexer

A group of cavity resonators connected and tuned together to enable repeater operation on a single antenna, at the same time.

Trunking Controllers

The trunking controller connects the repeaters through a bus. One is required for each repeater in the system. The controllers exchange data with the subscriber units to assign transmissions to an open channel.

Other Components

Several other components may be required depending on the application:

- Power supply
- Emergency power backup
- Filters
- Cabinet
- Rack
- Desk top housing
- Tone remote control
- Phone interconnect

A countertop or floor standing cabinet featuring a 100 Watt UHF conventional repeater system. Icom's heavy-duty IC-FR4000 repeater is at the heart of the system, surrounded by other components custom ordered and tuned by IAS technicians.





"Real-world" snapshots of various radio systems under construction in the IAS assembly area.

For many more example photos, visit online:
<http://www.icomamerica.com/en/systems/slideshow/default.aspx>

Customer Service & Business Processes

Customer Service

We provide a toll free phone number for our customers. Our IAS associates are happy to assist with any questions, Monday through Friday, 8 AM through 5 PM Pacific Time.

Fault Management

Please report any failures or faults to our systems department. Once the report is received, it will be assigned to the appropriate IAS associate for handling. We will contact the customer within 24 hours from time of report, notifying them that the report has been received and is under review. We strive to provide a final resolution within 48 to 72 hours from receipt of report, unless the degree of fault is too large to resolve within this standard timeframe. We will diligently communicate to the customer of any progress and updates regarding their report.

Escalation Procedure

For any reason your requests should require Senior Management involvement, the request will be forwarded in a timely manner.

Technical Documentation

IAS assembled systems are shipped with users manuals and filtering sweep sheets. Based on customer requirements, as-built, site acceptance, system acceptance, and training materials may also be included.



Customer Training & Field Installation

Systems department have technical specialists who are available upon request to perform technical training and/or field installations.

Icom America Systems Questionnaire

To ensure that IAS provides you with a system solution that meets your specific performance criteria, our Technical Specialists will work closely with you – in a consultative fashion – and perform a comprehensive needs analysis. The parameters and operation of your custom designed system are discussed and clearly documented on the system questionnaire. Our staff uses this questionnaire to develop your system design.

Thank You

We look forward to serving all your two-way radio system needs. Contact us today.



On-Line IAS Questionnaire



www.icomamerica.com/en/systems

Before we can begin an order, we need to learn more about your needs. If you would like assistance filling in the questionnaire, please give us a call!



Flexibility

Why is a “one-stop system” from Icom America Systems right for you?

- Trunked systems offer more privacy than conventional two-way systems
- Trunked systems increases system capacity (4-5 times more subscriber units)
- Significant cost savings
- Relieves workload of systems maintenance workers
- Packages may be customized for a specific application – IAS solutions offer flexibility and one-on-one participation in meeting your application needs



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Flexible Product Line Meets Your Needs

We offer a complete family of individual repeaters, pre-configured packages of conventional and trunked multichannel systems and custom designed systems to meet specific application requirements. All system components have been selected for their performance, reliability, history of operation in the field and value for the customer. Some typical applications are:

- Industrial parks
- Yards
- Taxis
- Shopping malls
- Universities
- Smaller metro communities
- Casinos
- Warehouses
- Factories
- Campus
- Utilities

If there's a group of people who need to stay in touch, Icom America Systems has an affordable solution for you!

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