



*Microwave and Wireless
Turnkey Systems*



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Microwave, Cellular and PCS Systems



Andrew has been an industry leader in the design, manufacture and supply of telecommunications equipment since 1937. We offer a complete line of premium quality microwave, cellular and PCS equipment for all radio applications.

We know what it takes to meet today's design and installation requirements and to quickly get your system generating maximum revenue. It takes "The Andrew Advantage: Products Plus Services."

The Andrew Advantage

The Andrew Advantage is premium products backed by a team of professionals dedicated to excellence. Andrew designs, manufactures and stocks thousands of high performance components. These components are engineered to work together, giving the most cost effective solutions for your system. As a single source supplier, we provide system preplanning and design, site preparation, installation, testing, and program management.

Our involvement in your project is flexible and we will handle whatever amount of responsibility you want to give us. We can supply the individual component parts, or take your concept from a paper proposal to a complete communication system on time, to specification, and within budget. Whatever your needs might be, use the Andrew Advantage to your advantage.

Andrew Products

- *Microwave antennas*
- *Base station antennas for cellular and PCS*
- *HELIAX® coaxial cable*
- *HELIAX® elliptical waveguide*
- *Circular waveguide*
- *Rectangular waveguide*
- *Equipment shelters*
- *Transmission line support systems*
- *Pressurization equipment*

Andrew Services

- *System engineering*
- *Program management*
- *Site civil engineering*
- *Transportation*
- *Tower erection*
- *Shelter installation*
- *Electronics installation*
- *Antenna installation*
- *Transmission line installation*



When you choose Andrew for your Terrestrial Microwave, Cellular or Turnkey System, you get products and services that lead the industry in quality and reliability.

Andrew Turnkey Systems Management Teams have the proven capability and expertise to completely coordinate and manage your next project. In addition to supplying all of the materials and components, Andrew can provide people to help in preplanning and design, site preparation, installation, and testing. Since every project is unique, you can pick and choose from any or all of our services to meet your specific requirements.

Program Planning and Design

In order to have the most cost-effective system, Andrew will supply a team of experienced professionals who will assist you when you begin the initial planning stages of your project. This group will work with you so your project is completed on time and on budget.

Preplanning can help you avoid costly delays by ensuring that you have achieved the best component interface designs which will provide the highest system performance at the least cost to you. Accurate material lists are supplied which can eliminate the need for last minute shipments. And preplanning results in more efficient use of field time.

The Andrew difference begins on the drawing board. Andrew engineers have extensive experience in all aspects of system design, development and practical installation. Our laboratories are fully equipped, and the latest equipment is employed for the most effective designs possible. Computer modeling guarantees a high level of performance in actual service. Conservative design approaches provide reliable operation under extreme conditions.

Program Management

Andrew can provide a Program Manager who assumes responsibility for the implementation, installation, testing, and inspection of your project. Working with the Program Manager, experienced engineering and support personnel will integrate all services and system components supplied by Andrew or others. The Program Manager will monitor all crews and their performance and report progress to you.

We provide complete site preparation including site clearing and grading, construction of foundations for earth station antennas, towers, equipment buildings, electrical work, fence installation, construction of access roads, site clean up and debris disposal.

Ongoing inspections by our experienced field supervisors, site superintendents and field inspectors ensure that Andrew provided products and services meet our strict standards and meet your project requirements.



Andrew professionals assist you in the initial planning of your project.

Since communication with all parties is an essential part of any project, daily status reports from the field are received to monitor progress. Weekly status updates are given to you.

This total coordination saves time and money by eliminating schedule conflicts, extra personnel and material oversights.

Since Andrew can supply you with a wide range of systems management programs and capabilities, you can be assured that Andrew professionals will have your project completed on time and within your budget. You can depend on Andrew products and services for a top performing system.

Emergency Assistance

When you are faced with an emergency, Andrew is ready to help. Technical assistance is available 24 hours a day. HELIAX® coaxial cable and elliptical waveguide shipments are normally possible within hours for emergency situations.





Field Services

Andrew can provide complete field service capabilities for delivery, installation, testing, site preparation and program management for all your systems applications.

Andrew Field Service performs all aspects of site construction including:



Andrew trucks deliver all system equipment to any accessible site.

- *System engineering, installation preplanning, scheduling and program management*
- *Site civil work such as site clearing and grading, access road construction, fencing and grounding*
- *Tower and building foundation construction*
- *Delivery to site of all system equipment*
- *Tower erection*
- *Antenna and transmission line installation*
- *Factory installation of radio racks, wiring, power source equipment and other equipment in concrete shelters*
- *Installation of concrete shelters and on-site power connection*
- *System testing and guarantees*

Field services are also available individually. Antenna system installations by Andrew Field Service offer several advantages. Crews are self-contained and arrive fully equipped. Ongoing inspections and continuous field supervision help yield a maximum effort and proper installation. Field services include delivery to the site, installation, site civil work and system testing.

Site Preparation

Andrew has the engineering expertise and the field service experience to handle all details necessary for site construction. These include installation of equipment shelters, site clearing and grading, construction of tower and building foundations, tower erection, electrical work, installation of fences and construction of access roads.

Delivery

Andrew Field Service can deliver any product to any accessible site. Off-loading of equipment at the site is provided by Andrew.

Installation

Proper installation of a tower and the associated antenna and transmission lines takes experienced field service people. Andrew personnel are experienced in every aspect of erecting towers and installing shelters, antennas, and feeder systems. They are familiar with every tower member, every assembly drawing, and every procedure.

Installation crews are equipped with all the necessary tools, rigging equipment and test equipment to ensure an efficient and trouble-free installation.

Testing

After installation is completed, Andrew tests each antenna/transmission line system for VSWR across the specified operating band. A pressure integrity test is performed on pressurized systems.





System guarantees are offered when the complete system is furnished by Andrew and the installation is performed by Andrew Field Services.

Andrew products are designed to minimize the causes of inter-modulation, return loss and echo distortion.

Andrew antenna/transmission line systems can be used for fully loaded frequency plans. Optional guarantees for inter-modulation noise levels can be provided on request.

System Components

The wide range of products from Andrew promotes efficient system design. The large number of antenna/transmission line combinations allow you to design a system that meets performance objectives at minimal cost.

Shelters

When you select an Andrew concrete equipment shelter, you get custom-design at pre-engineered prices. Our computer-aided design means your custom requirements can be quickly and economically incorporated into our standard shelters. Andrew modular and multi-piece shelter designs allow for economical system expansion. All Andrew shelters are guaranteed for 10 years.

Microwave Antennas

Andrew has the industry's largest selection of microwave antennas for frequencies ranging from 335 MHz to 58.2 GHz. They are available in diameters of 1 to 15 ft (0.3 to 4.6 m) and in several performance levels. This wide variety of antennas means easier and more efficient system design.

Base Station Antennas

Andrew designs and manufactures patented base station antennas which are setting new industry standards for electrical and mechanical performance. Andrew base station antennas are the ideal choice for wireless applications, including PCS/PCN, Paging, Cellular, GSM, SMR and ESMR.

Microwave Transmission Lines

HELIAX® coaxial cable and elliptical waveguides are the standard of the industry. Both are available in a wide variety of sizes and have connectors to match all common industry standard flanges.

Andrew circular waveguide is recommended for very long vertical runs in systems where multiband capability is needed or where low attenuation is critical. A single waveguide run can carry two polarizations. By using circular waveguide, you can also use smaller antennas, which reduce tower loading and save antenna cost.



DryLine® dehydrator and line monitor.

Andrew has three sizes covering frequency bands in the 3.58 - 19.7 GHz range.

Andrew offers a full line of rectangular waveguide components for use in HELIAX® elliptical waveguide and circular waveguide systems.

Pressurization Equipment

Pressurization of your antenna system reduces your risk of damage and costly interruption of services. This means lower operating and maintenance costs over the life of the system. The wide variety simplifies system design and reduces cost. Andrew equipment includes basic dehydrators, monitors and a full line of accessories and related equipment.