

Quality Driven - Peak Performance



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ANTENNAS
FILTERS
DUPLXERS
MULTICOUPLERS
COMBINERS
SYSTEMS

Quality, Responsiveness and Innovation Since 1951

At Sinclair we have been helping customers communicate better since 1951. Sinclair provides antennas, filters, combining systems and radio coverage solutions for RF telecommunications networks. Designed to function in extreme weather conditions, Sinclair's products enjoy a reputation for high performance, reliability, durability and value.

SINCLAIR[®]
Superior then, Superior now.

Who We Are. What We Do.

ABOUT SINCLAIR

At Sinclair we firmly believe that customer expectations are to be exceeded not just met. To maintain our leadership position in the industry we have always focused on attracting and retaining individuals who bring passion, commitment and experience to the company. Our responsive and dedicated team aims to deliver the best in class products and services to each and every customer.

A History of Excellence

Since 1951, Sinclair has maintained its leadership position by attracting and retaining talented individuals passionate about adding value, combined with an unwavering commitment to product innovation and quality.

Sinclair's Performance Cornerstones

Sinclair's five performance cornerstones were inspired by the company's founder, Dr. George Sinclair, a pioneer in the development of antennas and filters for military applications.

1. Customized Solutions

Sinclair takes pride in its ability to communicate directly with major OEMs and carriers. Our system engineers design custom combining and multi-coupling solutions for both base station and mobile applications. When necessary, our team can also design new derivatives of standard products to meet specialized requirements. We begin every relationship by taking the time to understand the customer's business goals and technical requirements. By listening from the outset, Sinclair is able to deliver solutions that meet current challenges and anticipate future needs.

- Custom Products

Sinclair specializes in custom product designs, recognizing that off the shelf options may not offer the most optimum solutions, Sinclair remains committed to meeting the specific needs of its customers. We have an extensive library of more than 2000 product designs, including specialized variants of standard products as well as unique

products designed for highly sophisticated applications. Our engineers can design derivative products or completely new product platforms to satisfy specific customer needs.

- Custom Combining Systems

Sinclair provides custom combining and multi-coupling system design services to meet even the most challenging requirements. With tower space at a premium and frequency congestion on the rise, many communication projects require complex systems that demand advanced combining or multi-coupling, high levels of isolation or sophisticated interference protection. Our system engineers carefully analyze customer requirements and then provide a system design specifically tailored to the customer's needs.

For systems experiencing frequency interference problems, we seek to design practical and cost effective solutions to eliminate the interference.

Our solutions utilize components from our extensive portfolio of rugged and reliable products. Each customized system is documented under a unique Sinclair model number. Customers are able to re-order the same system or have the system modified should their requirements change. All performance specifications are repeatable and all systems are backed by the full Sinclair warranty.

2. Unbeatable Quality and Value

Sinclair is an ISO 9001:2008 certified company. Our products are designed for mission critical applications, built to deliver industry-leading performance under the most extreme environmental conditions, year after year. We offer customers the best value in electrical performance, reliability and durability. Sinclair's sales, engineering and manufacturing facilities in North America and Europe supported by our global network of channel partners, aim to offer the best quality products and services to our customers. Sinclair is also a founding signatory to the TETRA Memorandum of Understanding.

3. Broad Product Range

Sinclair designs products for the public safety, cellular, heavy transport, PTC, utility, natural resource, aviation, embedded antenna application and military sectors to name a few. Within the



Custom Solutions TO DEMANDING TECHNICAL PROBLEMS.

low band, VHF, UHF, Tetra and 700-1000 MHz bands, our 60-plus years of product design experience, has created what is considered to be the most comprehensive range of high-quality antenna and filter products available in the industry.

4. Experienced Team

We foster an environment that encourages innovation and nurtures experience. Many of our technicians, engineers and assemblers have been designing and building Sinclair products for over 25 years, while many of our sales and sales support staff also have more than 25 years of industry experience. It is the combined skill and dedication of our team members that drives our success. With experienced product design teams in the USA and Canada, we continue to lead in developing rugged, low-PIM antennas, high-performance multifunctional transportation antennas and low profile filter system architectures for public safety, defense and private wireless networks.

Sinclair remains committed to staying at the forefront of innovation by tailoring solutions that meet specific customer requirements.

5. Superior Customer Service

We support our customers through a broad network of customer service representatives, direct sales staff, manufacturers' representatives as well as leading distributors, integrators and dealers. A fundamental principal and requirement throughout the company is having a keen sense of urgency and an unwavering commitment to execute. Having a customer centric view, we are frequently recognized and complimented for our responsiveness and dedication to serve our customers.

Serving the Community

At Sinclair we care about the communities in which our people live and work and this is why we have made it a priority to integrate social responsibility into our family-oriented corporate culture.

SINCLAIR
Superior then, Superior now.



Products and Systems

COMMITMENT TO PRODUCT DEVELOPMENT

Sinclair Technologies is recognized globally as an industry leader in designing and manufacturing high quality base-station antennas, filters, receiver multicouplers, transmitter combiners and customized RF base station combining systems constructed from these elements.

1 Low PIM Dipole Antennas

Base Station VHF, Tetra and UHF low PIM antennas ideally suited for multi-coupled systems. Available in single, two, four or eight-bay configurations with gain values between 2-11.5 dBd and bi-directional or offset patterns.

2 High Performance fiberglass Collinear Antennas

Widely used throughout the world and are designed to withstand severe environmental conditions, hence often used in remote and austere regions. Offering omni-directional coverage, these antennas have gain values between 0-11.5 dBd, and cover frequency bands between 138-960 MHz. Low PIM rated antennas are also available.

3 Enclosed Dipole Array Antennas

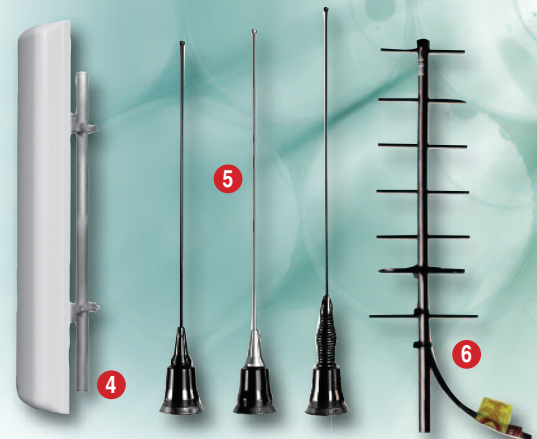
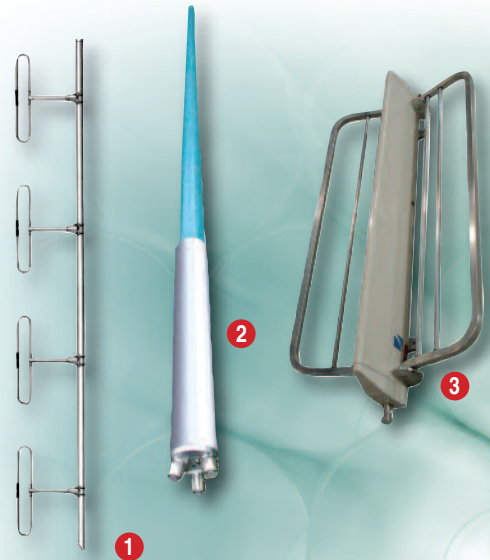
These versatile antennas, covering between 746-960 MHz, are well suited for applications requiring specific coverage patterns. The reflector model allows for adjustable horizontal beam-widths to optimize signal coverage.

4 Panel Antennas

Designed to offer high performance in a light-weight, sturdy radome, these circular polarized, vertical polarized or dual cross-polarized antennas are ideal for sector coverage in the 380-512 MHz range.

5 Excelsior™ Mobile Antennas

Sinclair's mobile antennas are built to last, featuring rugged ABS housing and stainless steel fittings and cover frequencies between 40-970 MHz. These highly robust antennas also feature an integral gasket that restricts water ingress and corrosion.



6 Yagi Antennas

Sinclair offers a wide range of reliable and resilient directional yagi antennas that operate in various frequencies between VHF to 1 GHz. Anodized and alodine coated models are also available.

7 High Performance Transport Antennas

Sinclair offers a full suite of high performance transport antennas. Our SM series, ST421R and StealthWave™ series antennas are the best in class and are ideal for a diverse range of transportation applications. The SM202 for example, is a low profile, multifunctional, dual port, broadband transport antenna that covers frequencies between VHF to 2.5 GHz.





8 Excaliber™ Rail and Transport Antennas

Low profile, cast aluminum or radome-enclosed VHF, Tetra, UHF and 800-900 MHz band antennas designed for vehicles, buses, trucks, trains and other heavy transportation applications. The VHF, Tetra and UHF Excaliber™ antennas have become a global standard for railroad locomotive service in the 138-512 MHz frequency range.

9 Log Periodic/Data Antennas

Designed for use in data systems, these rugged but lightweight antennas operate in the 800-1000 MHz frequency range.

10 Expandable Multi-couplers

Sinclair's two key architectures, Pass-Reject C series and Pass-Thru CS series, provide a wide range of expandable multi-coupling solutions for frequencies between 132-512 MHz.

11 Compact Combining Solutions

Sinclair offers a variety of space saving, compact, hybrid ferrite transmitter combiners for combining closely spaced transmitter frequencies. Assembled in a 1U tray, the new TCC series allows 2 or 4, 60-Watt transmitters to be combined with one antenna. The TC series transmitter combiners are able to combine 125-Watts per channel.

12 Mobile Duplexers

Compact, lightweight and housed in a durable aluminum extrusion, these units are available in frequency ranges between 138-960 MHz.

13 Base Station Duplexers

Sinclair's Q-Circuit reject and band pass designs, coupled with either our proprietary Res-Lok modular extrusion or standard 7" cavities, create a series of extremely versatile duplexers that offer exceptional performance in frequency ranges between 66-960 MHz.

14 Tower Top Amplifiers

Designed to enhance receive system sensitivity by compensating losses encountered in long feed cable runs, these units are available in the 406-512 and 806-960 MHz frequency ranges.

15 Cavity Ferrite and Trunking Transmitter Combiners

Sinclair's TJ, TN, CT and RTC can combine up to 20 channels to a single antenna for use in systems between 132-960 MHz.

16 Receiver Multi-couplers

Designed to conserve valuable tower space and decrease system maintenance costs by allowing between 2-32 channels to be connected to a single antenna line for frequencies between 138-960 MHz. Available with various power supply and pre-selector options.

17 Custom Antenna Combining Systems

Our customized RF multi-coupling systems utilize Sinclair's high quality components to develop complex combining systems based on client's needs and requirements.

A Senior Network Analyst at one of Canada's major police agencies commended Sinclair's design, shipping and setup crews for going an extra mile to help them succeed in meeting their crucial deadline. He added "Being there late on the weekends, to being there late at night during the week nights, was truly appreciated".

Smart Communications Deploying Sinclair Systems

G8 and G20 are two of the most important international forums where leaders from the world's most powerful countries meet to discuss global issues such as economy, environment and human rights, etc.

According to Canadian public safety officials, the 2010 G8 and G20 summits held in Toronto and Huntsville represented the largest deployment of security personnel for a major event in Canadian history. Canadian Forces, Toronto Police Agencies, other Law Enforcement Agencies and Emergency Services were responsible for ensuring security of thousands of Summit attendees, visitors, delegates and residents. Reliable, unfailing and high quality communication was a critical element to ensure proper coordination of security efforts between all agencies.

Two of our key customers, a major law enforcement agency and a major telecommunication company both chose Sinclair as a trusted supplier of private wireless communication systems for the events. For the G20, Sinclair supplied several multiple channel combining systems, all designed with high quality Sinclair components, including receiver multi-couplers, high-Q cavity filters, broadband pre-selectors and isolators. For the G8, Sinclair supplied complex combining systems featuring Sinclair's hybrid couplers, receiver multi-couplers, high-Q cavity filters and duplexers.

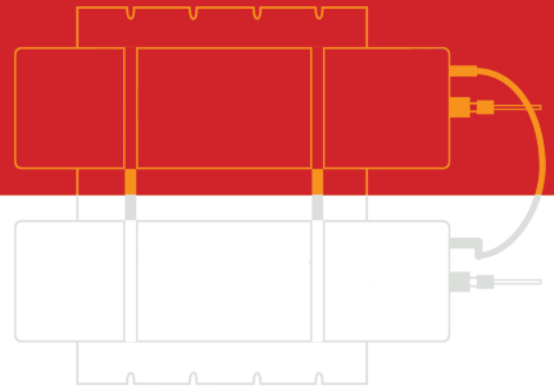
These systems were required to form a critical component of a private mobile radio communication network being set-up specifically for the two events. Normally, systems engineers are informed of the customer's full scope and

specifications, including the required frequencies, allowing them to design the most optimal solution. However, the G20's aggressive timelines and tight security dictated that only general frequency ranges could be released initially. Utilizing their system design expertise, Sinclair's engineers were able to overcome this challenge by modeling generic multi-coupling systems based upon broad parameters that could be quickly fine-tuned once the specific frequencies were disclosed. Thus when the actual frequencies were finalized closer to the event, the systems were ready to ship by the required deadline. Another challenge was to provide 24/7 troubleshooting support to multiple Toronto locations, including the RF congested downtown business corridor. Working around the clock, Sinclair's engineers were able to offer the support for all Sinclair's systems prior to and during the G20 Summit, which included resolving RF traffic issues caused by interfering signals.

The G8 Summit in Huntsville presented its own set of challenges that required complex system designs compounded by limited vehicular access to certain sites. While not a service generally offered by Sinclair, its engineers were contracted to be present on site to install and test the RF multi-coupling systems, which aided in project timing and efficiency.

Building upon their many years of industry experience, Sinclair systems engineers not only installed and tested the systems within an aggressive time frame but also provided the necessary 24/7 on-site support and troubleshooting.





Sinclair Supports Disaster Response

In April 2010, the largest marine oil spill in the history of the petroleum industry resulted from an explosion on the Deep Water Horizon Drilling Rig in the Gulf of Mexico. The explosion was catastrophic and caused extensive damage to marine and wildlife habitats, as well as the local fishing and tourism industries.

In order to prevent oil from spreading into hundreds of miles of beaches and wetlands along the coast, a massive clean-up and prevention operation was quickly launched. As part of the clean up process, aircrafts worked directly with the skimmer vessels to guide them towards the oil spill. Due to the time sensitive nature of this operation, seamless communication along the coastal region was critical to its success.

Our customer, a global leader in providing integrated communication solutions, was awarded the contract to supply a mobile radio communication network throughout the affected region.

To achieve this goal they partnered with Sinclair to provide the base station antennas and RF multi-coupling systems.

Sinclair was contacted over a weekend to immediately deliver VHF, PIM rated antennas. Sinclair's production team pulled together the necessary resources and commenced production over that weekend and succeeded in expediting antennas to the customer within days.

Over the course of the project, the customer made several other urgent requests for immediate delivery of both antennas (including aviation antennas) and multi-coupling systems. Continuing to recognize the urgency, Sinclair's engineers and customer service teams worked closely with the customer to design customized Combining/Multi-coupling systems within hours of their request. Sinclair was able to manufacture, assemble, test and ship the



first three systems within 3 days (normal lead time is 4-6 weeks) of the request. These customized compact systems offered frequency flexibility within the specified Tx and Rx passbands. Because the systems themselves were frequency neutral within the specified Tx and Rx range (1 MHz of spectrum for each), the customer could use frequencies that were available in each particular area where the systems needed to be deployed, making them ideal for operation in several remote areas around the Gulf.

Sinclair's team was instrumental in anticipating the customer's needs and suggesting changes during the project in order to deliver the best quality service.

To ensure continued coverage within the affected areas, Sinclair's dedicated employees worked around the clock to expedite material and deploy added resources to manufacture,

assemble, test, package and ship products quickly, ensuring seamless communication between key participants in the rescue operation. The leak was successfully sealed on July 15th 2010.

A manager working for our customer stated that Sinclair proved to be a reliable partner, responding with speed and efficiency, exceeding their expectations.

