



**2011 European Gigabit Ethernet Radios
New Product Innovation Award**





Frost & Sullivan's Global Research Platform

Frost & Sullivan is in its 50th year in business with a global research organization of 1,800 analysts and consultants who monitor more than 300 industries and 250,000 companies. The company's research philosophy originates with the CEO's 360 Degree Perspective™, which serves as the foundation of its TEAM Research™ methodology. This unique approach enables us to determine how best-in-class companies worldwide manage growth, innovation and leadership. Based on the findings of this Best Practices research, Frost & Sullivan is proud to present the 2011 European New Product Innovation Award in the Gigabit Ethernet Radios domain to Siklu Communication, for the development of EtherHaul Gigabit Ethernet Radio.

Significance of the New Product Innovation Award

Key Industry Challenges Addressed by Siklu Communication

When cellular networks were at a nascent stage of deployment, they predominantly served as carriers of voice traffic. However, with the advent of smartphones and mobile broadband technologies, cellular network traffic has now become predominantly data intensive. According to industry estimates, if the demand for cellular network bandwidth continues to grow at the current pace, data traffic could outgrow voice traffic by 2013. The rate at which data traffic is growing could further increase once fourth generation (4G) technologies such as long term evolution (LTE) and worldwide interoperability for microwave access (WiMAX) are commercialized. As a result, mobile network operators are scouting for cellular network backhaul technologies that could allow them to seamlessly support the ever-increasing data traffic.

Upgrading the backhaul infrastructure is a key issue especially in next generation wireless networks as 4G cellular networks are capable of facilitating data rates of more than 100 Mbps per sector. To facilitate such multigigabit rates, many companies are looking toward developing solutions that would leverage the e-band of the wireless spectrum. The e-band, which occupies the 71 to 76 GHz, 81 to 86 GHz and 92 to 95 GHz spectrum, is often cited as an ideal frequency for backhaul communications as it is capable of facilitating gigabit wireless communications at low deployment and operational costs. The following are the common challenges faced by mobile operators:

- **Backhaul Capacity**

One of the main challenges faced by mobile operators is to provide a substantial increase in the backhaul capacity to support the mobile broadband revolution. The rise in the volume of data traffic across wireless networks has made it highly crucial for emerging wireless backhaul infrastructure to offer consistent functionality to both voice and data applications. With an increasing need to support the data traffic and thereby higher bandwidth, it has become imperative for operators to reform or enhance their existing wireless network deployments to support higher speeds and capacity.

- **Total Cost of Ownership (TCO)**

As broadband networks are being deployed worldwide, there is a growing concern that backhaul would become an increasing portion of the total cost of a network. The bandwidth requirements of emerging services are driving a need for much lower cost per bit from the backhaul. As the mobile operators look to add new capacity to their networks, they will encounter additional cost associated with the upgrades. Given that the installation cost is a significant portion of any deployment, efficient management and maintenance of the backhaul networks can reduce this large portion of the total network cost. Also the materials used in the development of backhaul solutions play a significant role towards the reduction of the total cost.

- **Green Initiative**

Energy conservation, reduced footprint, low weight, emission reduction and low power consumption are not just about catering to social responsibilities and helping improve the environment. It also allows developers to better control operating costs, thus improving their profitability and efficiency of their products.

Impact of New Product Innovation Award on Key Stakeholders

The New Product Innovation Award is a prestigious recognition of Siklu's accomplishments in the Gigabit Ethernet Radios space. An unbiased, third-party recognition can provide a profound impact in enhancing the brand value and accelerating Siklu's growth. As captured in Chart 1 below, by researching, ranking, and recognizing those who deliver excellence and best practices in their respective endeavors, Frost & Sullivan hopes to inspire, influence, and impact three specific constituencies:

- **Investors**

Investors and shareholders always welcome unbiased and impartial third-party recognition. Similarly, prospective investors and shareholders are drawn to companies with a well-established reputation for excellence. Unbiased validation is the best and most credible way to showcase an organization worthy of investment.

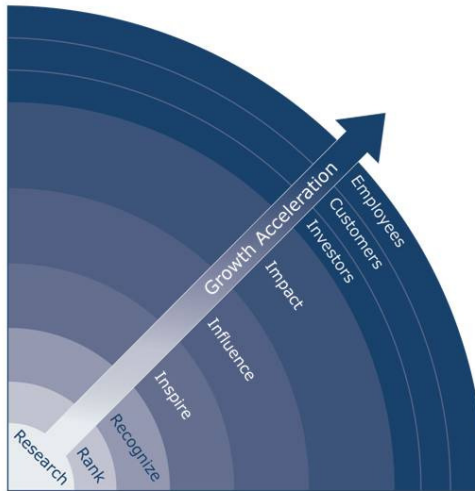
- **Customers**

Third-party industry recognition has been proven to be the most effective way to assure customers that they are partnering with an organization that is leading in its field.

- **Employees**

This Award represents the creativity and dedication of Siklu's executive team and employees. Such public recognition can boost morale and inspire your team to continue its best-in-class pursuit of a strong competitive position for Siklu Communication.

Chart 1: Best Practices Leverage for Growth Acceleration



Key Benchmarking Criteria for New Product Innovation Award

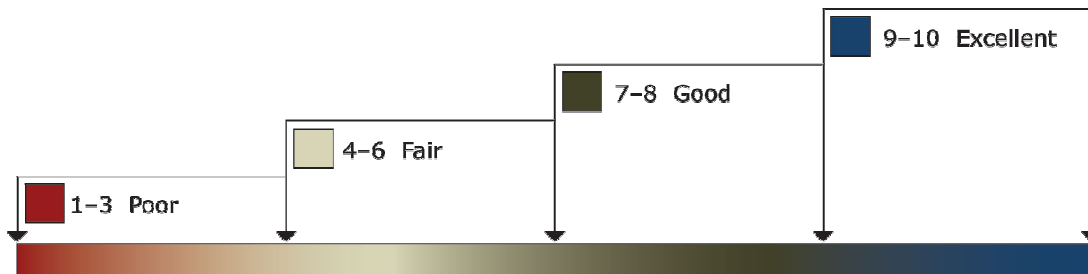
For the New Product Innovation Award, the following criteria were used to benchmark Siklu's performance against key competitors:

- Innovative Element of the Product
- Leverage Leading Edge Technologies in Product
- Value Added Features/Benefits
- Increased Customer ROI
- Customer Acquisition/Penetration Potential

Decision Support Matrix and Measurement Criteria

To support its evaluation of best practices across multiple business performance categories, Frost & Sullivan employs a customized Decision Support Matrix (DSM). The DSM is an analytical tool that compares companies' performance relative to each other with an integration of quantitative and qualitative metrics. The DSM features criteria unique to each Award category and ranks importance by assigning weights to each criterion. The relative weighting reflects current market conditions and illustrates the associated importance of each criterion according to Frost & Sullivan. Fundamentally, each DSM is distinct for each market and Award category. The DSM allows our research and consulting teams to objectively analyze each company's performance on each criterion relative to its top competitors and assign performance ratings on that basis. The DSM follows a 10-point scale that allows for nuances in performance evaluation; ratings guidelines are shown in Chart 2.

Chart 2: Performance-Based Ratings for Decision Support Matrix



This exercise encompasses all criteria, leading to a weighted average ranking of each company. Researchers can then easily identify the company with the highest ranking. As a final step, the research team confirms the veracity of the model by ensuring that small changes to the ratings for a specific criterion do not lead to a significant change in the overall relative rankings of the companies.

Chart 3: Frost & Sullivan’s 10-Step Process for Identifying Award Recipients



Best Practice Award Analysis for Siklu Communication

The Decision Support Matrix, shown in Chart 4, illustrates the relative importance of each criterion for the New Product Innovation Award and the ratings for each company under evaluation. To remain unbiased while also protecting the interests of the other organizations reviewed, we have chosen to refer to the other key players as Competitor 1 and Competitor 2.

Chart 4: Decision Support Matrix for New Product Innovation Award

Measurement of 1-10 (1 = lowest; 10 = highest)	Award Criteria					Weighted Rating
	Innovative Element of the Product	Leverage Leading Edge Technologies in Product	Value Added Features/Benefits	Increased Customer ROI (small change)	Customer Acquisition/Penetration Potential	
Relative Weight (%)	25%	15%	15%	20%	25%	100%
Siklu Communication	9	8.5	8.5	9	9	8.9
Competitor 1	8	7.5	8	8	7.5	7.8
Competitor 2	7.5	8	7.5	7	7.5	7.5

Criterion 1: Innovative Element of the Product

The gigabit Ethernet radios from Siklu Communication leverage the wide bandwidth allocated to the E-Band frequency spectrum. The E-band spectrum is licensed, yet uncongested and inexpensive, and can support high throughputs. Cost is a critical factor in the mobile backhaul industry and Siklu offers a low TCO by using low-cost E-band and through innovative product design. The EtherHaul system is uniquely based on an all-silicon design that results in fewer components, greater reliability, and reduces prices down to 80% less than equivalent radio systems. They also feature carrier grade, high capacity Ethernet. With the main aim of catering to the strenuous carrier wireless backhaul demands, the EtherHaul radios can be leveraged for mobile backhaul, enterprise or Ethernet service provider networks.

Siklu has successfully leveraged hitless adaptive bandwidth and modulation. This provides a wider range of robustness and increases link reliability, allowing operators to maintain, prioritize, and verify quality of service (QoS) in all weather conditions. The solution comes with full carrier Ethernet capabilities and it is Metro Ethernet Forum (MEF) compliant, ensuring full interoperability and immediate integration into operator's networks. The EtherHaul radios consume lower power compared to competing products, reducing the electricity bill and can also be fed by standard power over Ethernet (POE). It also has a small form factor, allowing operators to reduce the landscape distortion and save space on the mounting poles. The low weight of the equipment, eases on installation,

and reduces the demand on the poles, thus resulting in the ability to install on low cost poles, which seems to be a tendency in the emerging markets.

These innovative elements permit the EtherHaul solution to gain significant advantage against its competitors.

Criterion 2: Leverage Leading Edge Technologies in Product

Siklu has implemented a revolutionary design that enabled deep integration of a single radio frequency integrated circuit (RFIC) comprising of the full RF front end including the power amplifiers, low noise amplifiers (LNAs), mixers and filters. This is one of the very few silicon germanium (SiGe) design in the world operating in the E-band spectrum, reducing the costs from several thousands of dollars for an E-band radio module to a few tens of dollars for a single chip transceiver.

The EtherHaul radios have also leveraged a single baseband chip incorporating the modem, converters- analog to digital and digital to analog, and a powerful machine that controls the QOS over the wireless link. By leveraging this design, Siklu has avoided the use of third party modems thus reducing the cost of this module.

The company which is based out of Israel has also leveraged a patent pending dedicated design of the antenna to meet the Federal Communication Commission (FCC) and European Telecommunications Standards Institute (ETSI) standards, while reducing the costs compared to available off-the-shelf antennas. All the above mentioned technologies have been solely developed by Siklu and are part of Siklu's intellectual property (IP).

The EtherHaul solution can be easily integrated into provider or enterprise networks and provides advanced carrier Ethernet features including cutting-edge, integrated layer 2 switching and Ethernet operations, administration and maintenance (OAM) capabilities. Highly-scalable, EtherHaul radios are software-upgradable to support future layer 3 networking and routing needs.

Frost & Sullivan firmly believes that these unique attributes of the EtherHaul Gigabit Ethernet Radios enables Siklu to gain significant advantage against its competitors.

Criterion 3: Value Added Features/Benefits

One other key criterion used to evaluate the significance of this product in the market is the feature set that adds or increases the value of this product. Nowadays, access and transport wireless products are expected to inter-operate with multiple backhaul and transport elements including switches, routers and aggregation devices. Siklu has incorporated in its equipment a full-featured network processor encompassing the requirements of advanced networks. The incorporated components include provider bridge, QoS and prioritization engine, Ethernet link & service OAM and resiliency.

In order to apply to the advanced mobile backhaul demands, Siklu's radios support synchronous Ethernet (SyncE) as well as optimized transport of Institute of Electrical and Electronics Engineering (IEEE) 1588 packets. These

advanced timing over packet standards ensure full and proper synchronization of distribution to the network elements.

With 1 gigabit per second (Gbps) throughput, the EtherHaul radio future-proofs the backhaul network to meet data growth demand from 4G, LTE and WiMAX installations. The bandwidth aware QoS mechanism differentiates between multiple services, guaranteeing efficient transport of all services - timing, signalling, voice, video, web surfing and more.

These value added benefits are expected to increase the adoption of the EtherHaul radios by mobile operators.

Criterion 4: Increased Customer ROI

One other true measure of significance is the impact that the product has on improving the value offered to the customer, in comparison with competing solutions. Cost effectiveness or reducing the price of the products aid mobile operators in reducing the cost of backhaul, eliminating one of the main barriers to deployment of mobile broadband services. This helps them meet broadband demands keeping costs in line with backhaul of voice services. The ROI is calculated comparing the available alternatives. The cost savings associated with Siklu radios help the operators in achieving the ROI in a matter of few months.

Additional operational cost savings that benefit operators are achieved through of small form factor, low power consumption, low components count and low weight. The small form factor enables easy deployment of multiple links on the same pole, or easy installation on wall mounts for business service delivery. Low power consumption results in reduction of electricity bill and the ability to connect one single cable to carry both the data and the power with standard POE. With only three active components, the mean time between failures (MTBF) of the device is as good as 80 years and beyond. The reduction in overall weight enables a single person installation, reducing the installation costs, complexity and time to deploy.

In this case product innovation has resulted in cost savings and increased operational benefits for the end-users.

Criterion 5: Customer Acquisition/Penetration Potential

Siklu Communication designs its products primarily for mobile backhaul, and in particular for connectivity of base stations in the last/first mile. A secondary market is the Ethernet service delivery as provided by internet service provider (ISP) to business customers and enterprises. With the demand for new spectrum due to the congestion of the traditional microwave spectrum used for backhaul, and the need for more bandwidth, the E-band spectrum presents the desired solution for more and wider channels. Having an affordable solution in this space boosts the interest of the service providers in this technology domain.

Siklu is expanding its presence in Europe in response to a growing need among mobile operators to boost network capacity while minimizing costs. Siklu's strategy to market the EtherHaul solutions includes partnering with other equipment manufacturers (OEMs), tier-I radio access network (RAN) vendors such as Ericsson, Huawei, and specialists such as NEC. The company also partners with local system integrators and has more than twenty distribution channels established all over Europe and India with more expected in the future. They are also planning

to establish presence in new markets such as North America, Latin America (LATAM) and Africa through local partners. Siklu's patent-pending innovation offers increased network capacity to address the bottleneck in bandwidth, while reducing operational and capital expenditure by as much as 80 percent.

Siklu's EtherHaul belongs to the next generation of millimeter-wave or E-band solutions that have the dual benefit of offering high Gigabit-per-second network capacity while relieving frequency congestion by operating in the E-band spectrum. The company's mobile backhaul solution, which targets the last-mile between the base station and the operator point of presence, has traditionally been addressed by microwave, fiber or copper technology. Siklu has addressed many aspects of the system and introduced an all-silicon design to offer a good price-performance ratio, small footprint and low power consumption which make it an environmentally friendly solution.

Conclusion

In recent years, the rapid acceptance of smart phones and smart devices has propelled the demand for mobile broadband. Mobile users are constantly interconnected to mobile voice, data, and video services. Mobile operators are therefore frequently confronted with the immense challenge to fulfil this surging demand and are aggressively seeking solutions to mitigate the network strain. With the increasing interest in wireless backhaul systems, mainly attributed to its flexibility characteristics, enterprises face several limitations pertaining to its implementation. Presently, these systems are inadequate to operate in highly congested environments due to frequency interference. Additionally, current offerings possess a relatively high rate of latency. Resultantly, it could severely hinder synchronization of data streams. In this regard, enterprises are avidly seeking a more robust and reliable system to bolster their data transmission and enhance their overall performance. Siklu's EtherHaul Gigabit Ethernet Radios allow mobile operators and service providers to tackle the shortage of bandwidth caused by the dramatic increase in the use of mobile applications.

Frost & Sullivan presents the 2011 New Product Innovation of the year Award to Siklu Communication in the Gigabit Ethernet Radios space.

The CEO 360 Degree Perspective™ - Visionary Platform for Growth Strategies

The CEO 360 Degree Perspective™ model provides a clear illustration of the complex business universe in which CEOs and their management teams live today. It represents the foundation of Frost & Sullivan's global research organization and provides the basis on which companies can gain a visionary and strategic understanding of the market. The CEO 360 Degree Perspective™ is also a “must-have” requirement for the identification and analysis of best-practice performance by industry leaders.

The CEO 360 Degree Perspective™ model enables our clients to gain a comprehensive, action-oriented understanding of market evolution and its implications for their companies' growth strategies. As illustrated in Chart 5 below, the following six-step process outlines how our researchers and consultants embed the CEO 360 Degree Perspective™ into their analyses and recommendations.

Chart 5: How the CEO's 360 Degree Perspective™ Model Directs Our Research



Critical Importance of TEAM Research

Frost & Sullivan's TEAM Research methodology represents the analytical rigor of our research process. It offers a 360 degree view of industry challenges, trends, and issues by integrating all seven of Frost & Sullivan's research methodologies. Our experience has shown over the years that companies too often make important growth decisions based on a narrow understanding of their environment, leading to errors of both omission and commission. Frost & Sullivan contends that successful growth strategies are founded on a thorough understanding of market, technical, economic, financial, customer, best practices, and demographic analyses. In that vein, the letters T, E, A and M reflect our core technical, economic, applied (financial and best practices) and market analyses. The integration of these research disciplines into the TEAM Research methodology provides an evaluation platform for benchmarking industry players and for creating high-potential growth strategies for our clients.

Chart 6: Benchmarking Performance with TEAM Research



About Siklu Communication

Serving providers around the world, Siklu Communication is based near Tel Aviv, Israel. Siklu provides low cost high capacity wireless backhaul solutions. The company's success centers on an innovative silicon based design of the E-band radio system and components that has resulted in systems priced at lower cost. The EtherHaul delivers Gigabit speeds and is ideal for a wide range of urban and metropolitan Ethernet wireless backhaul applications. Paving the way for the mobile wireless backhaul revolution, Siklu Communications delivers carrier-grade millimetric-wave Gigabit Ethernet radio solutions with paradigm-shift in price performance. Solutions from Siklu are ideally suited for the both mobile backhaul and carrier Ethernet business services. Siklu is backed by a group of prominent and experienced international investment funds and private investors.



About Frost & Sullivan

Frost & Sullivan, the Growth Partnership Company, enables clients to accelerate growth and achieve best-in-class positions in growth, innovation and leadership. The company's Growth Partnership Service provides the CEO and the CEO's Growth Team with disciplined research and best-practice models to drive the generation, evaluation, and implementation of powerful growth strategies. Frost & Sullivan leverages 50 years of experience in partnering with Global 1000 companies, emerging businesses and the investment community from more than 40 offices on six continents. To join our Growth Partnership, please visit <http://www.frost.com>.

Emily Bailey
Frost & Sullivan
DDI: +44 (0)20 7915 7869
Email: emily.bailey@frost.com
www.frost.com