

December **2019** Year in Review issue

# SatMagazine

An artistic rendering of a satellite in orbit. The satellite is a rectangular box with two large solar panel arrays extending from its sides. The panels are dark with a grid of solar cells. The satellite is positioned in the upper left quadrant of the frame, angled towards the viewer. Below it, the Earth's surface is visible, showing a mix of blue oceans and brownish-yellow landmasses. The horizon of the Earth is a thin blue line against the blackness of space. The overall scene is brightly lit, suggesting the sun is high in the sky.

Telesat's Phase 1 LEO satellite on-orbit.  
Artistic rendition is courtesy of SSTL.

# Gilat Satellite Networks

*Looking into 2020, Gilat will continue to focus on the market segments of IFC, CBH, and Broadband, bringing to market technical innovations to best address its extensive customer base worldwide.*

**Gilat Satellite Networks is committed to the ongoing development of cutting-edge technologies and products that improve the quality of lives by enabling broadband communication that reaches all parts of the world, on land in the air and at sea.**

2019 was a remarkable year for Gilat with significant achievements, which are a testament to Gilat's recognized leadership and innovation. Four of these achievements are discussed below. First, the landmark achievement of becoming a prominent player in the ground segment for Non-Geo Stationary Orbit (NGSO) Satellites. This achievement was marked in November this year, with SES selecting Gilat's ground segment for its next-generation platform, O3b mPower Medium Earth Orbit (MEO) constellation.

In the Inflight Connectivity (IFC) market segment, Gilat has increased its presence with the selection by a Tier-1 Business Aviation service provider for a full aero terminal, thus expanding Gilat's aero offering from Commercial Aviation into the Business Aviation market segment. This win also broadens Gilat's portfolio to include a tail-mount antenna (TMA) for business jets, in addition to Gilat's leading airborne modem. In the Mobile market segment, Gilat's cellular backhaul solution was recognized this year by the industry analyst NSR, as the world leader in shipments of cellular backhaul over satellite, with 35 percent market share in modem shipments. During 2019, Gilat continued to expand its presence worldwide with additional tier-1 Mobile Network Operators (MNOs).

And finally, in the Broadband market segment, Gilat has reached an important milestone in Australia with NBN Co launching the largest operational satellite network installed in Australia. Gilat's comprehensive ground equipment and network management system are the infrastructure for this vast network now installed and operational throughout Australia, meeting NBN's stringent requirements for uninterrupted communication.

## **Non-Geo Satellite Orbit (NGSO) Landmark Achievement**

In 2019, the market for Non-Geo Satellite Orbits (NGSO) has seen a significant move forward as the list of NGSO constellations grew, and new large players such as SpaceX and Amazon have entered the market and are influencing the market dynamics.

In the fourth quarter of this year, Gilat marked an outstanding achievement reaching a major landmark in fulfillment of its strategy to be a significant player in the Non-Geostationary Orbit (NGSO) Satellites. Gilat's multi-orbit GEO/NGSO platform was selected by SES for its revolutionary mPOWER Medium Earth Orbit (MEO) constellation. Gilat was selected for its technological innovation and proven track record worldwide. The innovative ground network design significantly reduces cost per bit, provides best-in-class spectral efficiency, and demonstrates a step function in modem performance, all vital for revolutionary multi-terabit high-performance constellations such as mPOWER.

In addition, a series of successful tests were conducted throughout the year over Telesat's Phase 1 Low Earth Orbit (LEO) Satellite. A first-ever live in-flight demonstration for broadband connectivity over LEO was the result of Gilat's cooperation with Global Eagle at the end of 2018. Then in early 2019, Gilat further demonstrated exceptional mobility connectivity, this time with a tier-1 maritime service provider. This was an industry-first milestone for maritime applications requiring exceptionally low latency and high bit-rate. And, most recently another remarkable industry milestone was recorded of the fastest ever modem speeds of 1.2 Gbps total throughput using Gilat's modem over Telesat's Phase 1 LEO Satellite.

Gilat is heavily engaged in this upcoming market, and is positioned as a major player for the ground segment requiring higher performance, better efficiency and reduced cost per bit.



Gilat Satellite Network Headquarter Offices

## **Inflight Connectivity (IFC) Entry to Business Aviation**

In the Inflight Connectivity (IFC) market segment, several milestones were noted, marking Gilat's global IFC leadership. Gilat has increased its presence from Commercial Aviation to Business Aviation with the selection of a Tier-1 Business Aviation service provider. The Business Aviation segment requires premium service and therefore calls for a high-end robust solution that must be based on innovative technology. Gilat is therefore, particularly proud to have met the customer's demanding high performance and reliability requirements. This win not only adds to Gilat a new IFC market segment but also strengthens Gilat's IFC portfolio with an additional 12" tail mount antenna (TMA) in addition to its industry-proven Taurus aero modem.

Also, Gilat aero modem, Taurus, has been selected by Honeywell for its Jetwave Satellite Communication Solution. The integration of Gilat's aero-modem will enable Honeywell to offer its JetWave solution within territories as well as to roam in-and-out of territories where Gilat's ground network is deployed. The Honeywell-Gilat solution is to be deployed first in China over Gilat's already deployed HTS Ka network for both domestic and cross border flights, and then expected to expand to additional regions around the globe.

On another front, a significant industry trend to offer free WI-FI for airline passengers has been declared by several US airlines and, as such is a tailwind in Gilat's business. This is due to a significant expected usage increase and particularly a usage shift to a mix of business and leisure travelers. Free WIFI is likely to enhance the usage of higher bandwidth applications such as streaming and social media.

To support this trend of an increase in the IFC bandwidth, additional equipment is required to provide the required satellite resource utilization. Gilat is well-positioned for this opportunity, with its field-proven, high-performance solution that easily meets the demand for hundreds of concurrent passengers, providing hundreds of Mbps. with an excellent user experience.

Gilat's Taurus aero modem is being used by Gogo for Commercial Aviation for some time, providing an excellent user experience and is more than capable of delivering the required additional free WI-FI service. Gilat's solution is installed in a large number of airlines, including Aero Mexico, Air Canada and Delta Air Lines delivering Gogo's 2Ku service, which is installed to date on more than 1,300 aircraft.

## **Cellular Backhaul (CBH) Market Leader**

In the Mobile market segment, Gilat's cellular backhaul (CBH) solution was recognized by the industry analyst NSR as the world leader in shipments of cellular backhaul over satellite, achieving a 35 percent market share in modem shipments. In the fast-spreading 4G/LTE networks, Gilat has over 80 percent of satellite-based cellular backhaul installations worldwide.

Gilat supplies its renowned backhaul solution globally to Tier-1 Mobile Network Operators (MNOs), so these large mobile carriers can extend their network coverage to remote locations, as well as to islands, highways, and tourist attractions to support their subscribers who require high-quality broadband connectivity wherever they go. Gilat offers the backhaul network and VSATs as well as full turnkey solutions providing managed services in numerous deployments such as in the Americas and Asia.

In 2019 Gilat expanded its installed base with Tier-1 logos such as NTT DOCOMO in Japan and TIM in Brazil. These success stories add on to continuously expanding coverage of existing customers that include among others: Sprint and T-Mobile in North America, EE in the UK, Telstra and Optus in Australia, SoftBank, and KDDI in Japan and Globe in the Philippines.

In addition, Gilat is leveraging its 4G superiority to becoming a significant player in 5G. The required high speeds, low latency, and flexible network architecture are addressed by Gilat with its proven technology and roadmap. Speeds over 1Gbps. will be provided based on innovative wideband technology, and the integration of the ground segment into the 5G eco-system will utilize SDN/NFV, Cloud, Edge Computing and Network Slicing.

Gilat is a SaT5G Project member and as such is involved in bringing satcom into 5G and has participated in several tests with industry partners. This year Gilat also participated in the first-ever successful test that was conducted, demonstrating 5G connectivity over Telesat's Phase 1 LEO Satellite powered by Gilat's modem. The successful test was done at the 5G Innovation Centre at the University of Surrey in the UK and was conducted by a tier-1 European operator, demonstrating 5G backhauling with Gilat's modem.

## **Broadband Launch of Massive Network in Australia**

Gilat has reached an important milestone in Australia with NBN Co. this October, with the launch of NBN's business satellite services meeting the connectivity demands for businesses and government customers throughout regional and rural Australia. Gilat's comprehensive ground equipment and network management system are the infrastructure for the largest operational satellite network installed in Australia to meet NBN's stringent requirements for uninterrupted communication throughout Australia.

The commercial launch of this flagship project initiates the commencement of Gilat's managed services to NBN. During the launch event, NBN's CEO, Stephen Rue said: "We're redoubling our commitment to regional Australia with a focused Business Unit responsible for engaging with regional customers and meeting their needs."

The successful launch, coupled with the declared focus on regional and rural areas of Australia, demonstrates a growing commitment for satellite communication based on Gilat's multi-service platform for cellular backhaul, mobility services and enterprise offerings.

## **Bottom line**

The win with SES positions Gilat at the forefront of ground networks for NGSO constellations and puts Gilat in an excellent position to win additional opportunities in the vast market that NGSO creates, and further than that, Gilat's product roadmap will serve not only NGSO but also the new generation of GEO HTS and VHTS satellites.

With the growing importance of mobility applications and the emergence of NGSO constellations, Electronically Steered Array (ESA) antennas are another key focus area for Gilat and will indeed carry into 2020. Major progress is being made on Gilat's joint development with Airbus of an ESA antenna for in-flight connectivity, as part of the European Commission's Horizon 2020 program. This Ka-band ESA terminal is based on Gilat's chipset for its Phased Array Antenna (PAA).

Gilat is investing in ESA antennas for the aero market to address the expected efficiency challenges of the upcoming market transformations. The characteristics of ESA antennas such as flat panel, instantaneous bandwidth, beam agility, multi-beam connectivity, scalability/modularity, and longevity — are imperative for unlocking new business opportunities and for maximizing performance of satellite networks.

Looking into 2020, Gilat will continue to focus on the market segments of IFC, CBH, and Broadband, bringing to market technical innovations to best address its extensive customer base worldwide, as it continues to materialize the vision of broadband connectivity for all, anywhere, anytime.

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*Oren has more than 20 years of industry experience, and has held management positions in R&D, product management and product marketing, for international high-tech companies. In this capacity she contributed to next generation product definition and was responsible for delivering the company's vision to the media and analyst community. Oren has published thought leadership articles in renowned international journals, and has spoken at numerous industry conferences worldwide. Oren received a BSc in Computer Science from George Washington University.*

