

# Gilat Satellite Networks

By Doreet Oren, Director of Product Marketing and Corporate Communications

**During 2018, Gilat helped the world move closer toward closing the digital divide by providing solutions that enable abundant broadband connectivity to unserved and underserved areas on the land, sea and air.**

## HTS — Broadband

Early in the year, Gilat was selected to deliver the satellite platform for Australia's National Broadband Network, **NBN Co**. Gilat's **X-Architecture** platform is now being integrated into NBN's ten satellite gateway infrastructure, allowing NBN to address Australia's broadband demand for businesses and government customers.

During 2018, Gilat signed a partnership agreement with Russian satellite operator **Gazprom Space Systems** (GSS) to provide broadband coverage over a new Ka-band satellite, **Yamal 601**. This satellite will be launched in 2019 and is planned to serve the European and Asian regions of Russia. Already having a longstanding partnership with **Eutelsat**, Gilat has become the dominant player in the Russian Ka-band satellite broadband market.

Similarly, in China, Gilat became the sole provider of the ground network for HTS Ka-band capacity across the entire country. Gilat's network will operate with the soon to be launched **ChinaSat-18 (CS-18)** and the existing **CS-16** satellites. The deployments with Gazprom, Eutelsat and **China Satcom** create a unique ground network that stretches from Asia to Europe and enables continuous Ka-band coverage. This "*Space Silk Road*" covers two billion people, 23 million square kilometers and 30 countries.

Gilat further strengthened its leadership position with additional collaborations worldwide. In Latin America, Gilat partnered with **Hispasat** to provide the ground segment for the **Amazonas 3** and **Amazonas 5** satellites over Mexico and Brazil. In Japan, Gilat partnered with **SKY Perfect JSAT**, Asia's largest satellite operator, to support its solutions for Mobility and Fixed broadband services.

Gilat's single platform for multiple applications is the basis for expanding its offering worldwide from enterprise and consumer broadband services to applications such as **In-Flight Connectivity (IFC)** and cellular backhaul. For example, Gilat is seeing further development of IFC in China and Russia.

## In-Flight Connectivity (IFC)

At the start of 2018, a live demonstration of Gilat's Ku-/Ka dual-band aero terminal, **AeroEdge 6000**, took place at a customer's site in China. The terminal demonstrated unprecedented speeds of more than 130 Mbps while maintaining application continuity with automatic beam/gateway and satellite switchover. This terminal is the only dual-band complete aero terminal that can operate and provide service over any satellite and any network, as well as having the flexibility to interwork with other modems, antennas and power amplifiers. This distinct advantage accommodates the diverse requirements of airlines and service providers.



The year ended with the achievement of a major milestone with promising business opportunities worldwide. Gilat's AeroEdge 6000 passed the standard for environmental testing of avionics hardware, receiving the DO-160 certification and qualifying for installation on commercial aircrafts.

## Cellular Backhaul (CBH)

As the quest for data communication over mobile devices continues to grow, Gilat is seeing a major expansion of satellite-backhauled LTE sites, as well as ongoing growth of the capacity required for current sites. A wide variety of use

cases are being deployed, such as coverage for islands, metro-edge and tourists visiting national parks and mountainous areas, as well as using satellite-based CBH to support disaster recovery. The growing number of Gilat customers and sites indicates that the industry is overcoming the myths that were associated with cellular backhauling over satellite and is embracing satellite backhaul as a mainstream solution. Today satellite backhauling is being used to complement terrestrial solutions with an uncompromised user experience, competitive bandwidth costs and significant reduction of complexity.

Gilat was selected for major new projects this year by **KDDI Corporation** in Japan and by **Telstra** in Australia. Global deployments also included reduced complexity with Layer-2 and Layer-3 integration of the satellite backhaul with the terrestrial network. All of the projects mentioned above take advantage of Gilat's multi-application, multi-beam, and multi-satellite X-Architecture that is optimized for HTS. The underlying multi-service **SkyEdge II-c** platform supports applications such as: enterprise, cellular backhaul and mobility services over a single platform. The platform delivers high spectral efficiency and optimized space segment via advanced DVB-S2X waveform and Gilat's innovative LDPC-based fast adaptive return access scheme.

## What's Coming Next?

### NGSO

In addition to its ongoing business, Gilat is heavily engaged in the next wave of satellite constellations — *i.e.*, **Non-Geostationary Orbit (NGSO)** — and this will continue to be a major focus in 2019. One of the high points in this area during 2018 was Gilat's collaboration with **Global Eagle** and Telesat in the first-ever live in-flight broadband testing with an LEO satellite. The testing, carried out on Global Eagle's **Albatross** test aircraft, has yielded continuous uninterrupted broadband connectivity, while also performing switchovers between Telesat's GEO and LEO satellites. Multiple broadband services were demonstrated and tested, including secure real-time video chat using **Skype** and **Whatsapp** in parallel, as well as secure Internet browsing. This milestone underscored the technological advantages of Gilat's solution, which supports multiple applications, satellites, bands and beams and is also the first in the industry to demonstrate multi-orbit connectivity.

### 5G

Satellite communications is an integral enabler of the 5G connectivity vision and has an inherent advantage when facilitating ubiquitous connectivity while driving network efficiencies forward. Gilat is active in the SaT5G European project which aims to introduce satellite communication-related standards into future releases of 5G standards.

As a leading global provider of 4G satellite backhaul services, Gilat sees the transition to 5G service enablement as a natural evolution of its current service offering, centered on its cloud-based X-Architecture. Gilat is working closely with customers and partners to enable effective extension of 5G service and use cases, as well as developing next generation high performance terminals. Leveraging its SkyEdge II-c platform, Gilat is developing efficient interfaces to 5G network functions and implementation of full network orchestration, network slicing, service slicing, QoS, acceleration and security.

## Electronically Steered Array (ESA)

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. 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.

In 2019, Gilat expects to continue to demonstrate technological innovation in key industry segments for the benefit of its extensive customer base worldwide. Moving forward, Gilat is committed to the ongoing development of cutting-edge technologies and products that improve the quality of lives through enhanced broadband connectivity all the time and everywhere.

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