Gilat
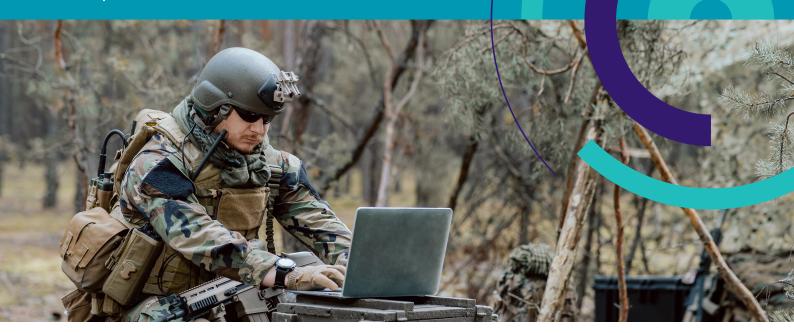
Next Generation Military And Government Solutions

Advanced Satcom Technology for Today's Net-Centric Battlefield

Benefits

- World leader in diverse SATCOM solutions and technologies

- Globally proven advanced SATCOM solutions for military and government

- Net-centric solutions for ground, sea and air

- Enables modularity and scalability with high performance for military operations

- High level of transmission security and secrecy for military COMMs/C5ISR operations

- High-throughput SATCOM terminals for unmanned airborne missions (UAS)

- Ruggedized, lightweight, fast to deploy on armored fighting vehicles (AFV) or carried in a backpack (Manpacks)

- Support diverse range of government services including homeland security, emergency response and disaster recovery

- One-stop-shop including ground segment equipment for satellite networks, modems, antennas, BUCs and leading network management system

Today's Net-Centric Battlefield

The quest for technological superiority and innovation is not surprising when armed forces are trying to preserve and reinforce their strategic advantage. The digital transformation of military operations continues to shape the future of global security. Seamless collaboration and communication are crucial for helping defense agencies realize a more modern way of working and managing themselves more effectively; sharing vast amounts of critical information (including voice, data and video) in real time makes military maneuvers more efficient and effective.

Today's modern militaries move faster, smarter and with greater precision than ever before, based on information systems which consume high bandwidth. They require a high level of transmission security and secrecy for military COMMs/C5ISR operations.

This new paradigm, the net-centric battlefield, is achieved by implementing a globally interconnected broadband communication network (including infrastructure, systems, processes, and people) that speeds up 2-way communications and increases situational awareness. Terrestrial communication is no longer sufficient for today's ground, air and naval forces that all depend on real-time communication. Satellite communication (SATCOM) is required to meet these growing needs.

Why Satcom?

Vast amounts of data must be shared in a timely, seamless and resilient way among warfighters, officers, applications and platforms during all phases of warfighting efforts. This, in turn, allows combat units to be smaller in size, more effective and precise and allows them to take on a different range of missions than non-networked units. Net-centricity enables the real-time, free flow of information across the battlespace so that data is shared, processed into information and then provided to the people or systems in need. Communications networks are being shaped by Big Data and include Wi-Fi, cellular, voice, video and other technologies. In order to achieve this new level of connectivity and operational continuity, wherever forces may be located and in spite of any enemy efforts to block communication, modern militaries are now, more than ever before, using satellite communications (SATCOM) to help ensure the successful completion of land, sea and air missions.

More specifically, military SATCOM is used by deployed troops, naval vessels, aircraft and spacecraft to maintain contact at the tactical, operational and strategic levels. For example, deployed special forces troops may be operating hundreds or even thousands of miles from their headquarters in a remote and undeveloped environment. SATCOM may be the only means they have of sending and receiving radio traffic across such vast, barren distances. This is also the case for aircraft or ships during military operations or maneuvers. SATCOM also enables a deployed expeditionary force, possibly in a theatre of operations far away from their country, to keep in touch with headquarter commanders back home.

Combat troops need fast, reliable and secure communications in areas beyond the bounds of traditional fixed and wireless networks. Communication must be available anywhere and at all times. SATCOM-on-the-Move and SATCOM-on-the-Pause are key enablers for today's Net-Centric battlefield.

SATCOM technology enables critical connectivity with combat-proven defense solutions. Troops can access real-time intelligence, where and when they need it, while sharing vital information with friendly forces across the battlefield.

There are 3 major advantages of using SATCOM in today's modern battlefield:
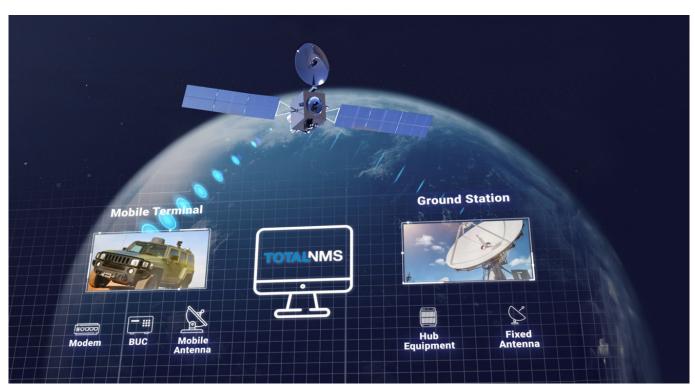
1 – Modularity and Scalability
The ability to quickly deploy and manage a network that can easily be adjusted and scaled without the restrictions of the local communications infrastructure is essential to military operations.

2 – Performance
Communication systems must support the speed, scale, and complexity needed for military operations in the information age that are enabled with today's high throughput satellites.

3 – Security and Secrecy
Militaries and governments must apply security controls to transmissions in order to prevent interception, disruption of reception, communications deception, and/or derivation of intelligence by analysis of transmission characteristics such as signal parameters or message externals.

End-to-end in-house SATCOM capabilities for land, sea and air missions including ruggedized antennas, VSATs, modems and SSPAs

Gilat is the Leader for End-to-End Satcom Solutions

Gilat believes in the right of all people to be connected and has been pursuing this vision for over 30 years. Gilat leads the global market with turnkey, end-to-end solutions and services in numerous vertical markets including cellular backhaul, mobility and enterprise with a particular focus on military and government.

Gilat is committed to providing technology-based solutions for military & government applications in order to help countries solve complex operational challenges. Furthermore, Gilat offers government and military organizations a set of advanced SOTM/SOTP solutions for connectivity everywhere throughout the battlefield and any operations arena.

Gilat's SATCOM solutions have been designed specifically to meet the needs of today's net-centric battlefield, including: flexible, secure platforms for huge amounts of data and high-bandwidth applications to connect soldiers, platforms and terminals across land, sea and air; continuous and resilient connectivity to ensure that information is available when, where and how it is needed; with all necessary technology, equipment, applications, products and solutions under one roof.

Expertise in Multiple Military & Government Applications

Security forces require ruggedized terminals that can be deployed on armored fighting vehicles (AFV) or carried in a backpack (Manpacks), ensuring seamless connectivity for both on-the-move and on-the-pause missions. In addition, Gilat's low SWaP (size, weight and power) systems allow military and border patrol teams to exploit the full potential of long-endurance UAS for ISR missions.
Gilat has successfully deployed a broad set of solutions worldwide for military and government applications, which include:

- Compact, aerodynamic, low-profile antenna systems for land vehicles and aircraft with always-on, two-way broadband for Ku-, Ka-, and X-band on-the-move and on-the-pause communication.
- Deployable manpack terminals for civilian and military operations that delivers high-speed data, video and voice services under the toughest environmental and battle conditions.
- High-throughput SATCOM terminals for unmanned airborne missions designed to provide the uninterrupted broadband connectivity needed on long-endurance Beyond Line-of-Sight (BLoS) missions.
- High-throughput satellite modems to support a wide range of IP-based voice, video and data services.
- A comprehensive management system enabling satellite network operators to rapidly introduce services, effortlessly maintain the network, and optimize network resource utilization.

Furthermore, Gilat has vast global experience and expertise in integrating the required SATCOM equipment on various platforms for multiple applications on air, land & sea.

Homeland Security and Government Emergency Response

Gilat's high-performance and quick-to-deploy systems also support a diverse range of civilian services. Satellite-enabled solutions support a wide variety of emergency preparedness and response use cases. Not only is satellite an ideal solution in rural and remote areas where deploying a terrestrial network is cost- prohibitive or unfeasible, it is also an effective backup solution in urban and other areas.

Satellite communications assist in emergency response and public safety operations by enabling effective real-time communications for first responders in crisis situations. Firefighters, police and rescue

Gilat's one-stop-shop product portfolio

services, responding to anything from terrorist bombings to tsunamis and massive forest fires, count on Gilat's Satcom-on-the-Move (SOTM) solutions to manage emergency response and public safety efforts in the most challenging environments. Response teams gain access to always-on, real-time video streaming, voice and high-speed data communications that help them do the important work of saving lives.

Gilat's One-Stop-Shop Product Portfolio

Gilat's broad product portfolio is designed to handle diverse high-bandwidth applications. Gilat offers a one-stop-shop which includes cutting-edge ground segment equipment for satellite networks, modems, antennas, and BUCs all powered by our innovative technology. Gilat also offers an industry leading network management system. Gilat's offering combines unmatched technical know-how and field experience to help militaries and governments deploy and operate their network infrastructure while reducing total cost of ownership and lowering risk.

SkyEdge IV Network Platform

SkyEdge IV is Gilat's next generation multi-service platform built with Gilat's new, advanced Elastix-Architecture. The new platform is designed to provide the best ground segment solution for the Elastix Era of multi-orbit Software-Defined Satellites (SDS) placed in multi-orbit (GEO and NGSO), providing very high capacity over thousands of concentrated beams focused on specific customers.

SkyEdge IV delivers innovative transmission technologies with exceptional performance and space segment efficiencies. Wideband DVB-S2X carriers in the forward direction and adaptive transmission in the return direction combining elastic SCPC and TDMA over shared BW enable high on-the-move service availability and maximum bandwidth efficiency at any condition — beam peak, beam edge, fade and different traffic demands. This is achieved by adaptive power control, changes to the carrier symbol rate, ModCod and spread-spectrum factor per VSAT on a per time-slot basis.

In addition, SkyEdge IV provides unparalleled security and safety for military operations communications, via FIPS 140-3 Level 3, TRANSEC end-to-end solutions for C4I/C5ISR systems based on robust VSAT applications.

SkyEdge IV provides a wide modem portfolio to answer any specific defense communication need from simple broadband modems to ultra-high throughput and high PPS modems achieving > 2Gbps aggregated throughput and high packets-per-second processing to support a wide range of IP based voice, video and data services.

Gilat's compact tactical modems enable government agents and defense personnel to accomplish their critical missions, offering rapid connectivity for data, video and voice, even under the harshest conditions. SkyEdge IV Aquarius family military-grade VSATs offers secure, highly reliable broadband C4I/C5ISR satellite communications for the net-centric battlefield, helping to ensure information superiority for troops on the ground.

Furthermore, Gilat offers Taurus-M a fast-to-deploy, lightweight and easy-to-operate military modem that meets the most rugged military specifications and is the smallest modem on the market today which offers these capabilities.

SkyEdge IV includes an advanced total network management system, Elastix-TotalNMS, enabling full configuration, control and monitoring of all hub elements and remote terminals, regardless of their physical location.

SkyEdge IV is backward compatible to SkyEdge II-c.

Antennas

Gilat offers compact, low-profile, aerodynamic antenna systems for land vehicles and aircraft that enable real-time broadband satellite communications while on-the-move or on-the-pause and are particularly suitable for operation in harsh environments.

These low-profile antennas offer always-on, two-way broadband for Ku-, Ka-, and X-band on-the-move and on-the-pause communication. An integral part of Gilat's on-the-move terminals, these antennas feature band switching, superior transmission and reception performance, as well as a unified management system.

Minimal size, weight and power (SWaP) allows for convenient installation on small vehicles and marine vessels. The extremely lightweight system ensures safe mounting, for quick and easy operation by non-technical personnel.

Gilat antennas can be deployed as part of a complete integrated SOTM terminal — consisting of the antenna, BUC and modem — controlled by a unified management system. Integration with Gilat's special-purpose SOTM modem allows for operation in low SNR conditions. When integrated with 3rd-party modems, the antenna is supplied with an Antenna Control Unit (ACU).

BUCs

Gilat's innovative and field-proven block upconverters (BUCs), designed and manufactured by Gilat's subsidiary Wavestream, are a key component within the integrated and high-speed terminals.

Gilat BUCs for Ku-, Ka- and X-bands are powered by innovative technologies, which are designed to provide higher output in smaller form factors that use less energy. Their compact product footprint meets critical space and weight limitations and enables customers to increase operational efficiencies and reduce lifecycle maintenance costs.

Gilat's ruggedized BUCs are designed to meet the challenging demands of satellite communication on-the-move applications, as well as fixed satellite operations, in extreme environmental conditions. Gilat BUCs have been successfully deployed worldwide, providing reliable broadband connectivity to thousands of customers worldwide.