



Product Brochure

ESR 2040Ka/ ESR 2040Ku

Delivering Superior In-flight Connectivity for Commercial Aviation

The demand for IFC services continues to rise worldwide. And with it, so do passengers' expectations for high performance and uninterrupted connectivity regardless of the duration and location of their flight. IFC providers should reevaluate their connectivity strategies and future-proof their networks with new technologies to provide consistently high throughput levels to each passenger at a reasonable price.

Electronically Steered Antennas (ESA) deliver a reliable technology platform with excellent SWaP, multi-beam support and seamless switchover between beams, satellites and gateways - with no moving parts. Passengers can experience continuous global coverage of the highest quality throughout their entire journey.

The ESR 2040KA and ESR 2040KU are Gilat's latest ESAs, delivering superior inflight broadband services for Commercial Aviation around the world.

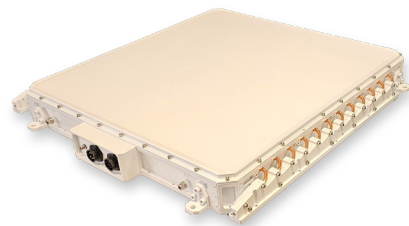
Multi-Point, Multi-Orbit SATCOM-on-the-Move

As a leading global provider of satellite-based broadband communications, Gilat is uniquely able to deliver the most advanced ESA. Gilat's technology has already been tested and deployed over GEO, MEO, LEO, and VHTS in Ku and Ka bands, including dual operations in GEO/LEO and seamless switchover between beams and satellites.

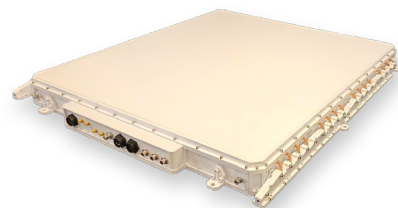
The ESR 2040KA and 2040KU were designed to be compatible across all existing GEO IFC networks while providing best in class link performance down to 20 degree elevation. Their flat design and light weight minimize drag and fuel consumption and the efficient SWaP enables passive cooling and minimal load on aircraft resources. Smart transmission power management guarantees adherence to relevant emission standards.

Benefits

- Ka and Ku ESA mobility antennas already deployed on maritime, land mobility and aero platforms
- Tested on GEO, VHTS and LEO constellations including seamless switchover between GEO and LEO
- High RF performance per beam enables GEO operation down to 20 degree elevation
- High spectrum - 500MHz/250MHz instantaneous BW per beam, dual beam, more than 2.5Gbps total throughput
- Interoperable with GEO and NGSO IFC modems, supports simultaneous GEO/LEO
- Reliable, ruggedized, efficient, high performance and built to address commercial aviation quality standards
- Ultra-flat antenna design guarantees optimal performance and minimal drag using passive cooling
- Extremely reliable, >50,000 flight hours MTBF



Tx Antenna



Rx Antenna

The dual transmit and receive operations of the ESR 2040KA and 2040KU empower GEO/MEO/LEO transitions of various options, including make-before-break and GEO/LEO simultaneous operations achieving the best possible global IFC coverage on GEOs and NGSOs combined. Advanced tracking algorithms and RF design provide for best-in-class elevation and skew compensation, improving antenna performance in real-world conditions.

The ESR 2040KA and 2040KU are fully integrated across a wide variety of IFC MODMANs, which enables smooth integration with most commercial modems and dual modem support. This facilitates exceptional network flexibility for service providers, integrators and aircraft manufacturers.

Technical Specifications: ESR 2040Ku

RF Performance

Transmit Band [GHz]:

13.75–14.5

Receive Band [GHz]:

10.7–12.75

G/T [dB/K]:

17.8 @ 11.85GHz, 90deg elevation on single & dual beam

EIRP [dBW]:

54 @ 14.25GHz, 90deg elevation

Field of View:

0°–360° azimuth
15°–90° elevation

Multi-Orbit Support:

GEO/LEO, single and dual beam operations

Tracking Accuracy [deg]:

0.2

Instantaneous BW [MHz]:

Tx: 500, **Rx:** 250 per beam

Dual Tx/RX Beam Support:

Yes

Beam Switching Time:

<0.4mSec

Polarization:

V/H and RHCP/LHCP incl. polarity switch

Electrical

Power Supply [V]:

48V, DC

Power Consumption [W]:

1080W – single beam

1280W – dual beam

Mechanical

Weight [KGs]:

56

Dimensions H X W X L [Cm]

(antenna only, excl. radome):
7 X 75 X 145

Operating Temperature [C]:

–55° to +71°

Technical Specifications: ESR 2040Ka

RF Performance

Transmit Band [GHz]:

27.5–30.0

Receive Band [GHz]:

17.7–20.2

G/T [dB/K]:

18 @ 19.2GHz, 90deg elevation

EIRP [dBW]:

52 @ 29.0GHz, 90deg elevation

Field of View:

0°–360° azimuth
15°–90° elevation

Multi-Orbit Support:

GEO/LEO, single and dual beam operations

Tracking Accuracy [deg]:

0.2

Instantaneous BW [MHz]:

Tx: 500, **Rx:** 250 per beam

Dual Tx/RX Beam Support:

Yes

Beam Switching Time:

<0.4mSec

Polarization:

RHCP/LHCP incl. polarity switch

Electrical

Power Supply [V]:

48V, DC

Power Consumption [W]:

790W – single beam

980W – dual beam

Mechanical

Weight [KGs]:

36

Dimensions H X W X L [Cm]

(antenna only, excl. radome):

7 X 61 X 108

Operating Temperature [C]:

–55° to +71°