Gilat Satellite Networks
21 Yegia Kapayim Street
Petach Tikva 49310, Israel

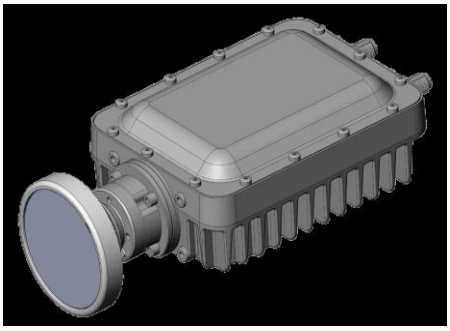
Module Specification sheet

2.5W & 4W Ka XCVR Rx Quad Band series

Fully Integrated with Gilat Ka antennas series

2.5W PN: AN8024 4.0W PN: AN8025

The models presented hereunder are approved for operation with Gilat SE-IIc VSATs and Antennas.
These XCVRs are of high quality & performance, offering the optimal cost effective solution for the VSAT industry market.



The 2.5W & 4W Transceivers (including feed and polarizer) are developed as an outdoor, and implement as an up/down converter for Tx and Rx.

The Tx path receives signals S Band (**1.4- 2.4GHz**) from Tx modem port and converts it into Ka band (**29-30GHz**).

The Rx path receives signals in K band (**17.7-20.2GHz**) and converts sub **quad bands** into L Band frequencies (**950- 2150MHz**) and passes to Rx modem port.

The Transmit and Receive Ka/K are in circular polarization.

The Transceiver utilizes an internal PLL local Oscillators for both receive and transmit channels.

The Tx LO synchronized with external reference 10MHz

The Rx LO synchronized with internal reference.

The Transceiver requires:

At Tx port - 10MHz, DC power and S Band signals

At Rx port – 13V/18V DC power, 22KHz tone and L Band signals.

To operate Rx chain, DC injection to Tx port must be applied

The Transceivers are installed as an outdoor, attached to the boom arm of a dish antenna. The installations are made all over the world, exposing the units to harsh environmental conditions and designed to be environmentally sealed.

Rx Sub Band Selection Table:

Rx RF Band In[GHz]	L.O[GHz]	DC	22KHz Tone
17.7-18.9	16.75	13V	Muted
18.3-19.5	17.35	13V	Applied
18.6-19.8	17.65	18V	Applied
19-20.2	18.05	18V	Muted

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Physical/Electrical Interfaces

Tx Input Signals via 75-Ohm F-Type connector

- *DC power*
- *IF S Band*
- *10MHz (External reference)*

Output Rx Signals via 75-Ohm F-Type connector:

- *DC power*
- *IF L Band*
- *22KHz tone*

Tx/Rx (Ka/K) Signals are in circular polarization via 0.8f/d feed horn (included in BOM)

Tx specification

IF Input Frequency Band 1400-2400MHz

RF Output Frequency Band 29-30GHz

Local Oscillator frequency 27.6GHz

Local Oscillator Phase Noise (RMS 100H to 1MHz) . . . . . 2° max. Over all conditions

Local Oscillator Reference frequency 10MHz

2.5W AN8024

Output saturated power . . . . . 34dBm (2.5W) typical

Output power P1dB . . . . . .33dBm (2W) typical

Output power P1dB . . . . . 32.0dBm (1.6W) over temperature range

Linear Gain . . . . . 54±4dB versus all condition

4W AN8025

Output saturated power . . . . . 36dBm (4W) typical

Output power P1dB . . . . . .36dBm (4W) typical

Output power P1dB . . . . . 34.7dBm (3W) over temperature range

Linear Gain . . . . . 56±4dB versus all condition

Gain flatness full band . . . . . 4dB typical

Gain flatness 36MHz . . . . . 1.2dB typical

ACPR . . . . . 22dB typical at P1dB

Output spurious level . . . . . According EN 301 459, EN 301 360 and FCC 47 CFR Part 15/25 Subpart B Class B for antennas up to 50dBi 1.2m

Polarization . . . . . Tx/Rx circular (Tx counter to Rx)

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Rx specification

*RF Input Frequency Range . . . . . 17.7-20.2GHz (**utilized by four bands**)*

IF Output Frequency Band . . . . . 950-2150MHz for all 4 sub bands

Local Oscillator frequency 16.75/17.35/17.65/18.05GHz

Local Oscillator Phase Noise (RMS 100H to 1MHz) . . . . . 2.2° max. Over all conditions

Local Oscillator Reference. . . . . Internal

LO uncertainty . . . . . ±25ppm max

Output power P1dB . . . . . 0dBm min

Linear Gain . . . . . 55±5dB versus all condition

Gain flatness full band . . . . . 5dB typical

Gain flatness 36MHz . . . . . 1dB typical

Noise Figure (25°C) . . . . . 1.5dB typical

Image rejection . . . . . 30dB typical

Polarization . . . . . Rx/Tx circular (Rx counter to Tx)

Common Feed port (Ka/K)

XPD Tx. . . . . .25dB typical

XPD Rx. . . . . 23dB typical

Feed F/D 0.8

DC Characteristics

Input Voltage Range at Tx IF connector. *13-48V*

Input Voltage Range at Rx IF connector *13/18V*

Tx Power consumption

2.5W AN8024 . . . . . 20W typical

4W AN8025 . . . . . 35W typical

Rx Power consumption . . . . . 3W typical for both

Environmental

Temperature operational range . . . . . -40 -60°C

Moisture/humidity protection IP67

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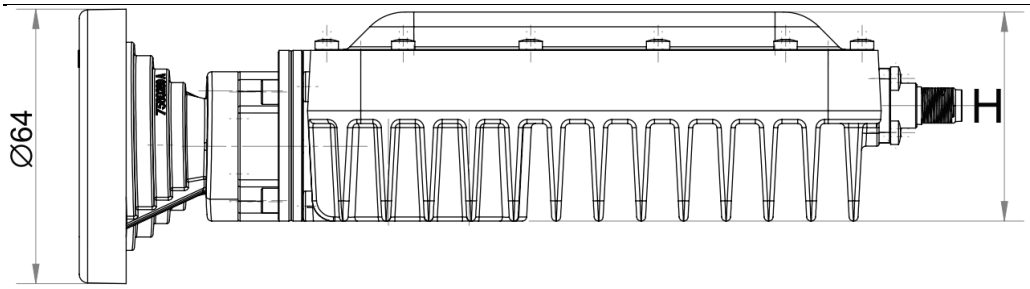

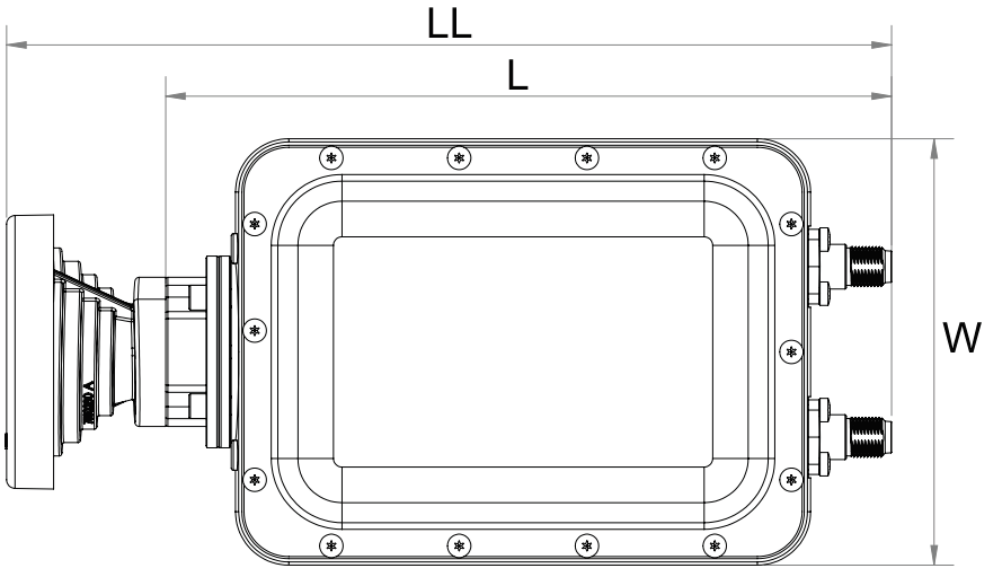

Dimensions (mm)

	L	*LL*	*W*	*H*
AN8024	*170*	*208*	*100*	*49*
AN8025	*170*	*208*	*100*	*49*