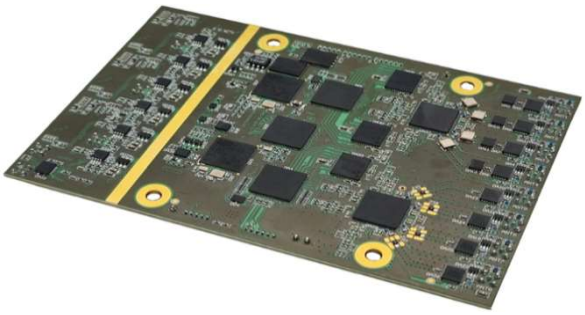
KV-AJx-OEM
MULTI-BAND ANTI-JAMMING OEM GNSS MODULE



- Multi-band anti-jamming GNSS OEM module: up to 3 frequency bands simultaneously (consider specified options)
- Multi-system solution: GPS / Galileo / NavIC (IRNSS)/ GLONASS / BeiDou can be used (consider specified options)
- Up to 100 dB J/S performance
- Small size: 113 mm × 78 mm
- Low power consumption: 5 W ...12.8 W (depending on options)
- Support of up to 3 jammers simultaneously for each of frequency bands
- Receiver based on own NTLab's high-performance ASICs: RFFE, baseband, anti-jamming processors
- Up-converter RF output for external GNSS receivers
- Internal receiver with INS, RAW data and with velocity, acceleration option by request
- IP or MIL case option (see the KV-AJx and KV-AJx-A series)

The purpose of using the KV-AJx-OEM module is to ensure stable reception of the navigation signal in conditions of staged interference. The module can be used with the KV-AJAx phased antenna array (see the antenna array description page), and can be separately integrated into a third-party device. These OEM modules can also be presented in the form of rugged enclosure version with external connectors to meet the requirements of IP or MIL-STD (please see KV-AJx or KV-AJx-A blocks).

Coupled with the use of a multi-band 4-element antenna array (the module can be provided by Kosminis Vytis), the tri-band solution (AJ3-OEM) allows to suppress interferences in up to 3 directions on 3 frequency plans simultaneously. This approach provides significantly higher protection against interference compared to single-frequency options. KV-AJx-OEM can be connected to external GNSS receiver or internal receiver based by own NTLab's ASIC with INS, RAW data and with velocity, acceleration option by request.

TECHNICAL SPECIFICATION

Product code: KV-AJx.y-OEM-zz (x – band options, y – GNSS signal options, zz – Output options (RO – RF Only, DO – Digital Only, RD – RF+Digital))

Output options		Single-band Option* 1.1	Dual-band		Tri-band	
			Option* 2.1	Option* 2.2	Option* 3.1	Option* 3.2
RF only Option RO	GNSS signals	GPS L1(C/A) Galileo E1 SBAS L1	GPS L1(C/A), L2 NavIC L1 Galileo E1 QZSS L1 SBAS L1	GPS L1(C/A), L5 BeiDou B2a NavIC L1, L5 Galileo E1, E5a QZSS L1, L5 SBAS L1, L5	GPS L1(C/A), L5 GLONASS G1 BeiDou B2a NavIC L1, L5 Galileo E1, E5a QZSS L1, L5 SBAS L1, L5	GPS L1(C/A), L2, L5 BeiDou B2a NavIC L1, L5 Galileo E1, E5a QZSS L1, L5 SBAS L1, L5
	Power	4.1 W (typ)	6.2 W (typ)		10.1 W (typ)	
Digital only Option DO	GNSS signals	GPS L1(C/A) Galileo E1 SBAS L1	GPS L1(C/A), L2 Galileo E1 SBAS L1	GPS L1(C/A), L5 Galileo E1 NavIC L5 SBAS L1	GPS L1(C/A), L5 GLONASS G1 BeiDou B1I Galileo E1 NavIC L5 SBAS L1	GPS L1(C/A), L2 Galileo E1, E5a BeiDou B1I NavIC L5 SBAS L1
	Power	5.2 W (typ)	6.2 W (typ)		8.9 W (typ)	
RF+Digital Option RD	GNSS signals	RO+DO signals of option 1.1	RO+DO signals of option 2.1	RO+DO signals of option 2.2	RO+DO signals of option 3.1	RO+DO signals of option 3.2
	Power	6.4 W (typ)	8.5 W (typ)		12.4 W (typ)	
Full bandwidth, MHz		1564...1589	1564...1589 1216...1238	1564...1589 1164...1189	1564...1606 1164...1189	1564...1589 1216...1238 1164...1189
* - other GNSS signals available on request, including NavIC S band						

Parameter	Description	Note
Interference rejection:		
Single interference Suppression	Up to 40 dB	For one CW signal of single jammer
	Up to 30 dB	For one AWGN signal of single jammer
Several interference Suppression (up to three)	Up to 32 dB	For one CW signal of each jammer
	Up to 23 dB	For one AWGN signal of each jammer
Interference resistance:		
Single jammer	Up to 90 dB (J/S) Up to 100 dB (J/S)	With internal GNSS receiver With external third party GNSS receiver
Several jammers	Up to 82 dB (J/S)	Up to three directions
Anti-Spoofing Capability	YES	Hardware ready
Number of channels	4	For each frequency band
Operation modes:		
GNSS mode	Internal GNSS receiver	By default
GNSS+INS mode	Internal GNSS +INS receiver with onboard MEMS sensor	Optional
RF output	Up-converter	Clear L1, L2, L5 bands depending on option
Positioning accuracy (RMS) without interference[1]:		
- horizontal	< 2.1 m	Static mode
- vertical	< 3.8 m	Static mode
TTFF without interference:		
Cold start	< 90 sec	
Re-acquisition time	< 3 sec	Static mode
Data interfaces	2xRS422	
Peripheral interface	1x1PPSout	Time accuracy ±20 ns
Data update rate:		
GNSS mode	20 Hz (1, 2, 5, 10)	PVT data
GNSS measurements	20 Hz (1, 2, 5, 10)	GNSS raw data
GNSS+INS mode parameters (optional):		
Data update rate	Up to 200 Hz	PVT data and Attitude
Data protocol	NTLaBin	PVT and Attitude based on GNSS + INS
Orientation accuracy (RMS), with internal GNSS+INS receiver:		
Roll	< 1°	Static mode, relative to the local horizon
Pitch	< 1°	Static mode, relative to the local horizon
Heading	< 1°	Mid. dynamic, true north
Operation conditions:		
Altitude	18 000 m	Up to 50 000 m by request
Velocity	515 m/s	Up to 3000 m/s by request
Acceleration	Up to 10 g	Up to 36 g by request
Jerk	Up to 2 g/s	Up to 20 g/s by request
Supply voltage	12 V...36 V	24 V typical
Power consumption	5 W...12.8 W	Depending on option
Dimensions	113 mm × 78 mm × 9,5 mm	
Weight	50 g	
Operating temperature	–40 °C ...+71 °C	

[1] Depends on atmospheric conditions, satellite visibility and geometry, multipath conditions.

CON TACTS
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