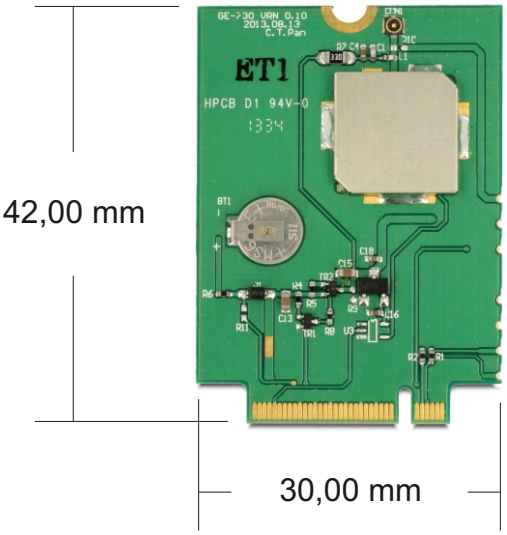
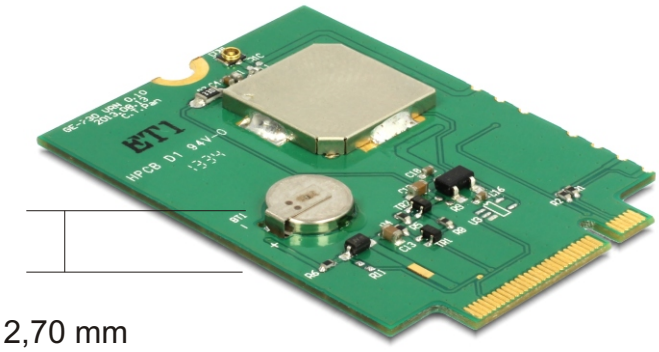
Specification

60431

Navilock GPS Engine Module NL-730 M.2 USB

EAN: 4043619604319





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Overview

NL-730 is equipped with the u-blox **7** low-power, high-sensitivity engine, RF connector, and optional backup battery. The PCI Express M.2 standard design allows it to be easily applied in devices with PC architecture. Its size of NGFF allows it to be used in dimension demanding environment. NL-730 allows switching between GPS and GLONASS. It default works with GPS and QZSS.
The backup battery allows faster position fix and it could be optional (not equipped) in case wider temperature range is required.
Our experienced design provides not only excellent GPS performance but also quality and delivery assurance.

Applications

- Tablet PC / Netbook PC / Industrial PC
- School Bus / Transit / Police / Fleet / POS
- PCI Express M.2 / MGFF standard compliant
- Card type: 3042-S3-B,
- Socket 2 WWAN-SSIC port 0
- Built-in RF connector, reduce RF tuning efforts
- The 2 x 2 x 0.6 mm MHF II (by I-PEX) RF connector allows flexibly placing GNSS antenna at a suitable location.
- External active antenna short circuit protection
- Optional backup battery for faster position fix.
- GPS, QZSS, GLONASS support
- High sensitivity: -161 dBm tracking/ -147 dBm acquisition (GPS)
- Up to 10 Hz update rate (default 1 Hz)
- OMA SUPL compliant A-GPS support
- SBAS (WAAS, EGNOS, MSAS) support
- Windows location sensor support
- Excellent EMI protection

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Technical Specifications

Receiver Type	56 channel u-blox 7 chipset GPS L1 C/A 1575.42 MHz GLONASS L1 OF 1598.0625 ~ 1605.3750 MHz SBAS: WAAS, EGNOS, MSAS
Horizontal Position Accuracy	Autonomus: 2.5 m (GPS), 4 m (GLONASS) SBAS: 2.0 (GPS) (CEP, 50 %, 24 hour static, -130 dBm)
Velocity Accuracy	< 0.1 m/s (speed) < 0.5° (heading) (50 % @ 30 m/s)
Time Puls Signal Accuracy	RMS: 30 ns (GPS), 50 ns (GLONASS) 99 %: 60 ns (GPS), 100 ns (GLONASS)
Time To First Fix (TTFF) Hot start Warm start Cold start	Autonomous (all at -130 dBm) 1 s (GPS), 1 s (GLONASS) 28 s (GPS), 25 s (GLONASS) 30 s (GPS), 32 s (GLONASS)
Sensitivity dBm (Autonomus)	Acquisition: -147 (GPS), -139 (GLONASS) Tracking: -161 (GPS), -158 (GLONASS)
Navigation Update rate	max. 10 Hz default 1 Hz
Max. Altitude	50,000 m
Max. Velocity	500 m/s
Protocoll Support	NMEA 0183 V2.3 (compatible to 3.0) GGA, GLL, GSA, GSV, RMC, VTG, TXT
Dynamics	< 4 g

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Electrical Data

Power Supply	3.3 V ± 5 %
Backup Power	1.8 ~ 3.6 V
Power Consumption	41 mA / average tracking (9 SVs)
	13.5 uA / backup power (card disabled)
USB I/O (V)	VIH: 2 ~ VCC, VIL: 0 ~ 0.8
	VOH: >= 2.8, VOL<= 0.3
Digital I/O (V), except nRESET pin	VIH: 0.7*VCC ~ VCC +0.5,
	VIL: 0 ~ 0.2*VCC
	VOH: >= VCC-0.4, VOL<= 0.4

Enviromantal Data

Operating temperature	-40 ~ 85°C w/o battery -20 ~ 60°C w/ battery
Storage temperature	-40 ~ 85°C w/o battery -40 ~ 60°C w/ battery

Mechanical Data

30 x 42 x 2.3 mm without backup battery
30 x 42 x 2.7 .. with backup battery

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75 Pin Definition

Name	PINs	Function	I/O
3.3 V	2,4,70,72,74	Power supply,(VCC)	Input
V_BAT	58	1.8~3.6 V backup power.	Input
		Left it open if there is a	
		backup battery on card	
GND	1,3,5,11,27,33,39,	Ground	Input
	45,51,57,71,73		
CFGx_xxx	1,21,69,75	Configuration	Output
USB_D+	7	USB data signal plus	I/O
USB_D-	9	USB data signal minus	I/O
LED	10	GNSS fix indication	Output
nW_Disable	26	GNSS disable; active	Input
		low, left open if it is not	
		Used.	
nRESET	67	Card reset, 1.8V, active	Input
		low, left open if it is	
		used.	
notch	12 ~ 19	Card key notch	-
NC	Remaining pins	No connection	-

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Input/Output	Pin	Signal	Signal	Pin	Input/Output
			CFG2_GND	75	Out
In	74	3.3V	GND	73	In
In	72	3.3V	GND	71	In
In	70	3.3V	CFG1_GND	69	Out
	68	NC	nRESET	67	In
	66	NC	NC	65	
	64	NC	NC	63	
	62	NC	NC	61	
	60	NC	NC	59	
In	58	V_BAT	GND	57	In
	56	NC	NC	55	
	54	NC	NC	53	
	52	NC	GND	51	In
	50	NC	NC	49	
	48	NC	NC	47	
	46	NC	GND	45	In
	44	NC	NC	43	
	42	NC	NC	41	
	40	NC	GND	39	In
	38	NC	NC	37	
	36	NC	NC	35	
	34	NC	GND	33	In
	32	NC	NC	31	
	30	NC	NC	29	
	28	NC	GND	27	In
In	26	nW_Disable	NC	25	
	24	NC	NC	23	
	22	NC	CFG0_NC	21	
	20	NC	notch	19	
	18	notch	notch	17	
	16	notch	notch	15	
	14	notch	notch	13	
	12	notch	GND	11	In
Out	10	LED	USB_D-	9	In/Out
	8	NC	USB_D+	7	In/Out
	6	NC	GND	5	In
In	4	3.3V	GND	3	In
In	2	3.3V	CFG3_GND	1	Out

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Support Navilock

If you have further questions, please contact our customer support support@navilock.de.
You can find current product information on our homepage: www.navilock.com.

Final clause

Information and data contained in this manual are subject to change without notice in advance. Errors and misprints excepted.

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WEEE note

The WEEE (Waste Electrical and Electronic Equipment) directive, which came into force on 13 February 2003, lead to a comprehensive change in the disposal of used electric products. It is the main purpose of this directive to avoid electric waste products (WEEE), while simultaneously promoting the re-usage, recycling and other forms of reconditioning in order to reduce the amount of waste. The WEEE logo on the product and the package shows that the product should not be disposed of with regular garbage. You are responsible for disposing all used electric and electronic devices at the corresponding collection sites. The separate collection and meaningful re-usage of electronic waste helps to deal with natural resources more economically. In addition, re-using electronic waste contributes to the preservation of the environment and human health. Additional information regarding the disposal of electric and electronic devices, their re-usage and the collection sites can be found at your local authorities, disposal companies, specialist shops and the manufacturer of the product.

RoHS conformity

This product complies with the directive 2002/95/EC of the European parlament and the council from January 27th 2003 concerning the restricted use of dangerous substances in electrical and electronical devices (RoHS) as well as its modification. This product is compliant with Directive 2011/65/EU of 3 January 2013.

26. November 2013

EU Import:
Tragant Handels- und Beteiligungs GmbH Beeskowdamm 13/15, 14167 Berlin, Germany