

# NEO-D9S



## u-blox D9 correction data receiver

### First mass-market L-band GNSS correction module

- Access to centimeter-level GNSS corrections globally
- Freedom to select GNSS correction data delivery channel
- High scalability for industrial and automotive applications
- Allows selection of desired L-band GNSS correction service
- Easy and seamless integration with u-blox F9 receivers



12.2 × 16.0 × 2.4 mm



### Product description

NEO-D9S is a satellite data receiver for L-band correction broadcast, which can be configured for use with a variety of correction services. It decodes the satellite transmission and outputs a correction stream, enabling a high precision GNSS receiver to reach accuracies down to centimeter level. Depending on the capabilities of the receiver used, it can consume the data output by NEO-D9S as is, or external preprocessing on the host might be needed. By providing an independent correction data stream delivered via satellite L-band, NEO-D9S ensures high availability of the position output and decreases dependency on cellular connectivity for correction service delivered via IP. Granting access to a broadcast data stream, NEO-D9S allows virtually infinite scalability, eliminating the need for a dedicated delivery channel per user. This makes NEO-D9S flexible for use in various markets and applications.

NEO-D9S is configurable for use with correction data of various providers and service levels. This ensures high precision in multiple regions globally, as well as coverage across continents.

NEO-D9S can be easily integrated with a variety of high precision GNSS receivers from the u-blox F9 platform, which allows a complete high precision solution to be built with less design effort. For more information about the u-blox F9 products, refer to the u-blox website.

In addition, NEO-D9S can be integrated in any high precision GNSS system that uses L-band correction delivery.

NEO-D9S implements u-blox security principles and advanced security features including signature and anti-jamming mechanisms, thus allowing reliable GNSS positioning in end-user products.

This L-band receiver is in the u-blox NEO form factor.

	NEO-D9S-00A	NEO-D9S-01A	NEO-D9S-00B
<b>Grade</b>			
Automotive	•	•	
Professional			•
Standard			
<b>GNSS</b>			
Satellite L-band	•	•	•
Concurrent signals	1	1	1
<b>Interfaces</b>			
UART	2	2	2
USB	1	1	1
SPI	1	1	1
DDC (I2C compliant)	1	1	1
<b>Features</b>			
Programmable (flash)	•	•	•
Additional SAW filter	•	•	•
RTC crystal	•	•	•
Oscillator	T	T	T
Active antenna / LNA supply	•	•	•
<b>Power supply</b>			
2.7 V – 3.6 V	•	•	•

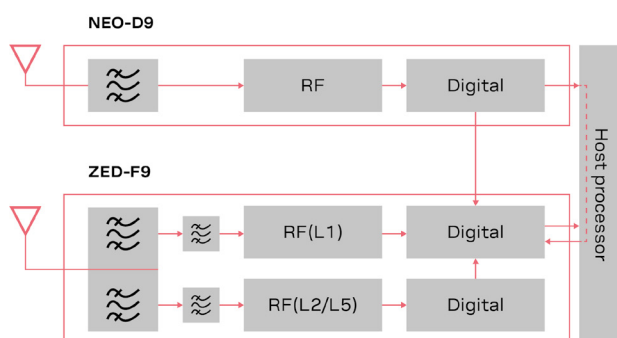
T = TCXO



## Features

Receiver type	u-blox D9 correction data receiver
Time-to-first-frame	Initial acquisition at 2400 bit/s <10 s
Acquisition sensitivity	For BER < 10e-5 at 2400 bit/s -133 dBm
Oscillator	TCXO
Frequency bands	1525 - 1559 MHz (NEO-D9S-00A/00B) 1550 - 1559 MHz (NEO-D9S-01A)
Memory	Flash
Supported antennas	Active
Anti-jamming	Active CW detection and removal Onboard SAW band pass filter

## High precision GNSS architecture



## Interfaces

Serial interfaces	2 UARTs 1 USB 1 SPI 1 DDC (I2C compliant)
Protocols	UBX
Digital I/O	1 EXTINT input for Wakeup

## Electrical data

Supply voltage	2.7 V to 3.6 V
Power consumption	
NEO-D9S-00B	35 mA at 3.0 V (average)
NEO-D9S-00A/01A	55 mA at 3.0 V (average)

## Further information

For contact information, see [www.u-blox.com/contact-u-blox](http://www.u-blox.com/contact-u-blox).

For more product details and ordering information, see the product data sheet.

## Package

24-pin LCC (Leadless Chip Carrier)  
12.2 x 16.0 x 2.4 mm, 1.6 g

## Environmental data, quality & reliability

	NEO-D9S-00A/01A	NEO-D9S-00B
Operating temp.	-40 °C to +105 °C	-40 °C to +85 °C
Storage temp.	-40 °C to +105 °C	-40 °C to +85 °C
Qualification	Professional-grade modules qualified according to ISO 16750 Automotive-grade modules qualified according to AEC-Q104	
RoHS compliant	(2015/863/EU)	
Green (halogen-free)		
EU Radio Equipment Directive compliant	2014/53/EU	
Manufactured and fully tested in ISO/TS 16949 certified production sites		
High vibration and shock resistance		
Based on u-blox chips qualified according to AEC-Q100		

## Related u-blox products and services

GNSS products	ZED-F9P high precision GNSS module ZED-F9R high precision dead reckoning module ZED-F9K high precision dead reckoning module for automotive markets
Location services	PointPerfect GNSS augmentation service

## Support products

Evaluation kits provide reference design, and allow efficient integration and evaluation of u-blox positioning technology.

C101-D9S	NEO-D9S application board, allowing NEO-D9S module to be evaluated as a stand-alone module or combined with a suitable u-blox evaluation board, for example, C099-F9P or C100-F9K
----------	---

## Product variants

NEO-D9S-00A	u-blox D9 correction data receiver with satellite L-band raw output, automotive grade
NEO-D9S-01A	u-blox D9 correction data receiver with satellite L-band raw output, limited frequency band, automotive grade
NEO-D9S-00B	u-blox D9 correction data receiver with satellite L-band raw output, professional grade

## Legal Notice:

u-blox reserves all rights to this document and the information contained herein. Products, names, logos and designs described herein may in whole or in part be subject to intellectual property rights. Reproduction, use, modification or disclosure to third parties of this document or any part thereof without the express permission of u-blox is strictly prohibited.

The information contained herein is provided "as is". No warranty of any kind, either express or implied, is made in relation to the accuracy, reliability, fitness for a particular purpose or content of this document. This document may be revised by u-blox at any time. For most recent documents, please visit [www.u-blox.com](http://www.u-blox.com).  
Copyright © 2021, u-blox AG

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[u-blox:](#)

[C101-D9S](#)