



## Technical Information of GPS Week Rollover

GPS Receiver Installed on Marine Equipment of JMC

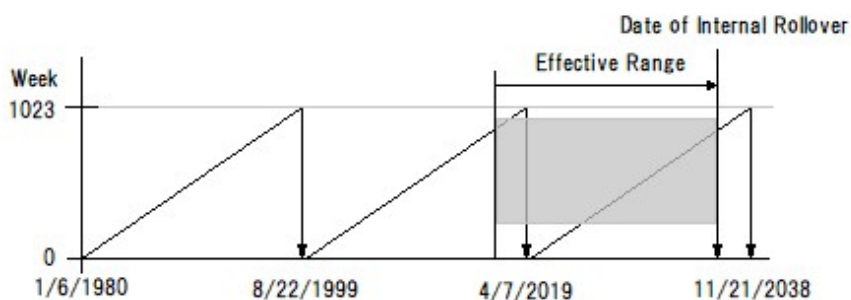
April 9, 2019

### Week Roll Over of GPS Receiver:

The GPS receiver calculates the date based on the week number included in the GPS satellite signal. Week numbers of satellite signal start at week 0 and fill up to week 1023 and reset to week 0 at week 1024 (after 19.6 years). Therefore, the time of the clock in the GPS receiver may be reset, which may cause an incorrect date display on marine equipment. This phenomenon is called rollover. GPS week zero started January 6, 1980. The 1024 weeks counter ran out and rolled over on August 21, 1999. The week counter then reset to zero, and it has been recounting ever since. The next time the counter will reach week 1023 and rollover to zero is on April 6, 2019.

### Explanation of Internal Rollover:

Almost all software of GPS module resolves this problem by setting of internal Rollover.



Assignment of Target Period by Software Setting

### Status of GPS Week Rollover and Timing of Internal Rollover of Equipment:

Product on Sale and Discontinued Model			
Model	Product	GPS Week Rollover (4/7/2019)	Date of Internal Rollover
V-6603P	Plotter/ Fish Finder	Adjusted	GSU-36AM(D)-7-029-S3R0D0A0: Aug 01, 2021 GSU-140B-091: Nov 15, 2028
V-8010P	Plotter/ Fish Finder	Adjusted	
V-3310P	Plotter/ Fish Finder	Adjusted	
V-3310PMKII			
V-6810P	Plotter/ Fish Finder	Adjusted	
GP-100	GPS Receiver	Adjusted	GSU-36AM series: Aug 01, 2021
GP-200			
NP-30MR	Map Plotter + GNSS Receiver ANT.	Adjusted	
NP-2082	GPS Plotter	Adjusted	
V-6802P	GPS Plotter	Adjusted	
V-3300P	Plotter/ Fish Finder	Adjusted	

DG-500 T-701	GPS Navigator	Adjusted	NV08C-CSM v2.x/ v3.x (FW 02xx) : Dec 21, 2025 NV08C-CSM v4.x (04xx)/ 5.x (05xx) : Oct 06, 2030
CP-500	Plotter/ Fish Finder	Adjusted	GSU-140B-091: Nov 15, 2028
GP-300	GPS Receiver	Adjusted	GSU-140B-091: Nov 15, 2028
RD-400	Remote Display	Adjusted	GSU-140B-091: Nov 15, 2028
CP-700	GPS Navigator	Adjusted	Aug 11, 2030
CV-770P	Plotter/ Fish Finder	Adjusted	Aug 11, 2030
AIT-700	AIS Transponder	Adjusted	1024 weeks (19.6 years) after release F/W
NP-120MAX	GPS plotter	Adjusted	FW 2.01: Sep 1, 2013 - 23rd 2033
NP-90MAX	GPS plotter	Adjusted	FW 3.01: Oct 18, 2015 - 9th 2035
Super Pilot Max III	Map Plotter + GNSS Receiver ANT.	-	Refer to M8-28
M8-28	GNSS Receiver ANT	Adjusted	FW 2.01: Sep 1, 2013 - 23rd 2033 FW 3.01: Oct 18, 2015 - 9th 2035
Super Pilot Max	Map Plotter + GNSS Receiver ANT.	-	Refer to GP-280
GP-280	GPS Receiver ANT	Adjusted (Products after 2013) No information (Product before 2013)	Jan 27, 2029
GPC-400	GPS compass 2013-	Adjusted	1024 weeks (19.6 years) after release F/W
GPC-500	GPS compass -2012	Adjusted	1024 weeks (19.6 years) after release F/W
GB-380	GPS Receiver ANT	Adjusted	Before S/N 1040125 Aug 2, 2021 After S/N 1040126 Dec 2, 2029
AIT-101A	AIS Transponder	<b>Not Supported</b>	
AIT-202A	AIS Transponder	Adjusted	1024 weeks (19.6 years) after release F/W

Sale Scheduled Products			
Model	Product	GPS Week Rollover (4/7/2019)	Date of Internal Rollover
RT-2501G	Marine Radio	Adjusted	1024 weeks (19.6 years) after release F/W
Undecided	BB AIS Transponder	Adjusted	Aug 11, 2030
GPE-100	GPS E-compass	Adjusted	1024 weeks (19.6 years) after release F/W

*The information contained herein may be changed at any time without prior notification.*

## NP-120MAX/NP-90MAX/NP-20MR(MAX)/M8-28 (GNSS Antenna):



To whom it may concern

### **Year 2019 GPS week number rollover – u-blox Compliance Statement**

Dear Madam/Sir,

u-blox hereby confirms that the following u-blox GNSS chips and modules have been tested and can handle the year 2019 GPS week number rollover without issue:

All ANTARIS 4, u-blox 5, u-blox 6, u-blox 7, u-blox 8, and u-blox M8 products.

Thelwil, 28.05.2018

With kind regards,

u-blox AG

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## DG-500/T-701:



NVS Technologies AG

### NOTICE ON GPS WEEK NUMBER ROLLOVER OCCURRING APRIL 7, 2019

January 14<sup>th</sup>, 2019

NV08C-CSM Receivers HW version 2.x, 3.x, 4.x and 5.x (FW 02xx, 04xx, 05xx)

NV08C-RTK, NV08C-RTK-A and NV08C-RTK-M Receivers (any FW)

A GPS week rollover will occur at the end of the GPS day on April 6, 2019, at which time the GPS week will transition from week 2047 to 2048. However, because the GPS message structure broadcasted by the satellites defines the week at a 10-bit value, the GPS messages will indicate that the week has changed from 1023 to week 0.

All NV08C series receivers will handle this rollover without any issues.

NV08C-CSM v2.x and NV08C-CSM v3.x (FW 02xx) will provide normal operation till December 21, 2025

NV08C-CSM v4.x (FW 04xx), NV08C-CSMv 5.x (FW 05xx) NV08C-RTK, NV08C-RTK-A and NV08C-RTK-M will provide normal operation till October 06, 2030

NVS Technologies AG has performed tests using a GNSS simulator to verify that the receiver firmware correctly handles the week rollover in different scenarios, including Autonomous, SBAS, DGPS and RTK positioning modes.

NVS Technologies AG always recommends installing the latest receiver firmware version posted to the NVS Technologies AG website (<http://nvs-gnss.com/support/firmware.html>).

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