

## GF-8048

### GPS-Steered Frequency Generator with Rubidium

Furuno has developed a new frequency generator to be used as a reference clock to support the broadcasting infrastructure. The GF-8048, Furuno's third-generation frequency generator, is designed specifically for digital terrestrial broadcasting applications. The GF-8048 can be used at the digital terrestrial broadcasting main stations as well as at satellite stations since it can output highly accurate and stable 1PPS and 10MHz even in blocked spaces or in severe conditions such as high electrical field areas.

The GF-8048 has a GPS receiver and a rubidium oscillator. It receives GPS signals and generates 1PPS (pulse per second) synchronized with UTC as well as 10MHz sine wave coherent to 1PPS.

The GF-8048 offers completely maintenance-free stability. Periodic maintenance work is not necessary. The GF-8048 can also work as a stand-alone rubidium oscillator. Frequency calibration can be easily performed at stations without the need for specialty devices or even a PC, allowing for incredibly simple, trouble-free operation.



# SPECIFICATIONS OF FURUNO GF-8048 GPS-STEERED FREQUENCY GENERATOR:

GENERAL	
Alarm Output	LED/No Voltage Contact
Supply Voltage	48 VDC (40.8-55.2)
Dimensions	207mm(W) x 327mm(D) x 98.5mm(H)
Weight	3kg Approx.
Operation Temperature	-20C - +60C
Performance Temperature	-10C - +45C
Serial Interface	RS232C (DSUB 9Pin), NMEA0183
Receiving Frequency	1575.42 MHz
Tracking Code	C/A Code
Tracking Channel	12 Channel
Waveform	Sine Wave
Connector	Rear: BNC x 8
	Front: BNC x 1
Output Level	0dBm
Frequency Average	<+/- 1.0x10 <sup>-11</sup> (24 hour average)
Short Term Stability	<+/- 1.0x10 <sup>-11</sup> (Root Allan variance)
Holdover	<+/- 2.0x10 <sup>-11</sup> (After lapse of 1 hour)
	<+/- 3.0x10 <sup>-11</sup> (After lapse of 12 hours)
Free Run	<+/- 5.0x10 <sup>-11</sup> (Through the year) 1PPS
Synchronization	UTC (USNO)
Waveform	Pulse
DUTY	50%
Timing Accuracy	<+/- 100 ns (95%)
Holdover	<+/- 400 ns (After lapse of 1 hour)
Timing Precision	30ns

All specification subject to change without notice

## Features:

- GPS: The GF-8048 has Furuno built-in Time Transfer GPS receiver (equivalent to the GT-80). The chip is mounted directly on the board and the GPS CPU performs integrated control including Rb.
- Rubidium Oscillator: The GF-8048 incorporates rubidium oscillator as a base oscillator. The excellent low phase noise is realized by the combination of OCXO and GPS.
- Holdover: The GF-8048 can continuously output high accurate and stable 1PPS and 10MHz even if GPS receiver loses the GPS satellite signals in holdover mode.
- Coherency: The GF-8048 realizes the coherency within +/- 10ns accuracy between the falling edge of 1PPS and the zero crossing of 10MHz sine wave.
- Automatic calibration: Every rubidium oscillator needs periodical calibration to maintain high accuracy output. The GF-8048 has an "Automatic calibration function" by using GPS as a reference. The real time control by GPS realizes complete maintenance-free GPS-steered Frequency Generator with Rubidium.



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