

# EGATEL® MGE5000 Series

## GNSS-referenced frequency master



MGE5000 © 2020 Egatel Spain v.2.0

## Egatel



MGE5000 is a GNSS or PTP IEEE std 1588-referenced frequency and time standard. It has been designed for synchronization of multichannel SFN broadcast networks, which need a ultrastable frequency standard. It simultaneously provides up to ten 10MHz outputs and ten 1PPS synchronous outputs.

- GNSS-referenced frequency master (GPS, Glonass, Galileo & Beidou)
- Synchronization via PTP IEEE std 1588 protocol (optional).
- Multi-band GNSS receiver, thus reducing the temporary error to less than 5ns and enabling not to be affected by ionospheric errors.
- The receiver employs T-RAIM algorithms for excluding anomalous signals and jamming detection.
- High performance internal OCXO.
- Provides up to ten 10 MHz outputs and ten synchronous PPS outputs.
- 1+0 or 1+1 configurations in 1RU.
- 1+1 configuration with double antenna input and automatic switching system.
- Front - removable power supplies and modules.
- Power supply 220Vac and/or -48Vdc.
- Double power supply (optional).
- Remote management via Web server / SNMP and local management via display.
- Front RJ45 connector for local management of each module independently via Webserver.
- The Webserver not only shows information on the available parameters, but also provides a list of satellites, graphic representation of constellations, etc.

## TECHNICAL SPECIFICATIONS

ANTENNA INPUT	
Connector	SMA
Impedance	50 $\Omega$
Sensitivity	
- Cold Start:	-148 dBm
- Tracking and navigation:	-166 dBm
GNSS RECEIVER	
Multiconstellation and multiband	
- GPS:	L1C/A (1575,42 MHz), L2C (1227,60 MHz)
- GLONASS:	L10F (1602 MHz + $K*0,5625$ , $k = -7...6$ ) L20F (1246 MHz + $K*0,4375$ , $K = -7...6$ )
- GALILEO:	E1-B/C (1575,42 MHz), E5b (1207,140 MHz)
- BEIDOU:	-B1I (1561,098) y B2I (1207,140 MHz)
- QZSS:	L1 C/A, L2C ( $< \pm 1 \times 10^{-12}$ )
- SBAS:	L1 C/A: WAAS, EGNOS, MSAS, GAGAN
PTP - IEEE1588 v2	Front RJ45 (optional)
GNSS channels number	184
10 MHz Outputs	
Number of outputs	10 (one secure output)
Connector	BNC / SMB (optional), 50 $\Omega$
Precision (with GNSS locked)	$\pm 50 \times 10^{-12}$ (average value)
Stability:	
- vs temperature	$\pm 0.5$ ppb ( $0^{\circ}\text{C} \dots 50^{\circ}\text{C}$ )
- medium term	$\pm 0.2$ ppb / day
- long term	$\pm 30$ ppb / year
Level	10 dBm $\pm 1$ dB
1PPS OUTPUTS	
Number of outputs	10 (one secure output)
Connector	BNC / SMB (optional), 50 $\Omega$ .
Active edge	Rising edge.
UTC precision	5 ns. (GNSS locked)
Holdover (24 hours)	10 $\mu\text{s}$ . (GNSS unlocked)
Minimum pulse width	1 $\mu\text{s}$
STATUS and CONTROL	
Signalling	Frontal status LEDS
Local management	Web Server (Front RJ45) or via LCD display
Remote management	
- Web Server and/or SNMP	Rear RJ45
- Dry contacts	SUBD44 (Optional)
GENERAL	
Power supply	
- AC	100...240 Vac
- DC	- 48 Vdc. (Auxiliary Output: +12Vdc)
Dimensions	1U, 19".
Operating temperature	1 ... 45 $^{\circ}\text{C}$ .
Relative Humidity	95% max. (without condensing).
Max. installation altitude	3000 m.a.s.l (others on request).