

### High Stability Oscillators

Masterclock offers three high-stability oscillator options for the GMR Series. When locked to GPS, the OCXO 10 MHz sine wave frequency will have the same long-term stability as an atomic clock. When not tied to GPS, a precision frequency 10 MHz reference output is available as a source for laboratory use or for an RF reference, including cellular applications. The HSO option is required for all 10 MHz signal outputs.

<i>Freq. = 10 MHz</i>		<b>HSO-1</b> Standard	<b>HSO-2</b>	<b>HSO-3</b> Available only in GMR5000
<b>Oscillator Type</b>		TCXO	OCXO	Rubidium
<b>Freq. Stability - Aging/Day</b>		$\leq \pm 0.0027$ ppm (or $2.7E-9$ /day)	$\leq \pm 1E-9$ /day	$\pm 4E-11$ /day
<b>Freq. Stability - Aging/Year</b>		$\leq \pm 1.0$ ppm (or $1E-6$ /year)	$\leq \pm 1E-7$ /year	$\pm 1.5E-9$ /year
<b>Power Consumption</b>		$\leq 0.021$ W	$\leq 3.5$ W warm up, $\leq 1.5$ W steady state	$\leq 14$ W warm up, $\leq 8$ W steady state
<b>ROHS Compliant</b>		Yes	Yes	Yes
<b>Short Term Stability (Allan Variance), t =1sec.</b>		-	-	$\leq 5E-11$
<b>Time Drift per Year (max)</b>		$\pm 3$ sec./year	$\pm 0.25$ sec./year	$\pm .001$ sec. / year
<b>Phase Noise (dBc/Hz) @ 10 MHz</b>	<b>1 Hz</b>	-	-	$\leq -65$ dBc/Hz
	<b>10 Hz</b>	-	$\leq -110$ dBc/Hz	$\leq -85$ dBc/Hz
	<b>100 Hz</b>	$\leq -135$ dBc/Hz	$\leq -130$ dBc/Hz	$\leq -112$ dBc/Hz
	<b>1k Hz</b>	$\leq -135$ dBc/Hz	$\leq -145$ dBc/Hz	$\leq -130$ dBc/Hz
	<b>10k Hz</b>	$\leq -148$ dBc/Hz	$\leq -155$ dBc/Hz	$\leq -140$ dBc/Hz