

# Synthesizers Lead in Phase Noise, Spectral Purity and Volume

March 14, 2016

Holzworth Instrumentation, Boulder, CO



Holzworth Instrumentation's latest HSX series RF synthesizers are phase coherent, multi-channel signal sources that offer industry leading phase noise (-142 dBc/Hz at 1 GHz, 10 kHz offset) and spectral purity of better than -85 dBc (spurious signals). The current product offering operates from 10 MHz to 6 GHz with 0.001 Hz resolution. 12 and 24 GHz models will be released during 2017. The internal configuration supports better than -110 dB isolation between loaded channels, and the synthesizers have a Z540 calibrated dynamic range of +20 to -110 dBm. The output power can be set with 0.01 dB resolution and  $\pm 1$  dB accuracy at -110 dBm.

Users can select factory configurations from one to four phase coherent channels in a single 1U chassis. The compact 1U form factor is ideal for this class of frequency source, as test system rack space comes at a high premium. The phase coherent relationship between loaded channels is also an advantage for many applications, as channel-to-channel (tone-to-tone) relative drift can result in measurement errors. The use of phase coherent channels for tone and clock generation helps reduce and potentially eliminate unnecessary test margins, often increasing yields in product test applications.

Few signal sources can meet the CW performance levels achieved by the HSX series, and the prices of those competitors are approximately 2 $\times$  higher per channel than HSX pricing. Also, competitive form factors require at least 2U of rack space per channel, or 8U for four channels, versus 1U for the HSX. The HSX series has a three-year product warranty, reflecting the high reliability and quality standards that Holzworth's customers rely upon.

**Holzworth Instrumentation**  
Boulder, Colorado, USA  
(303) 325-3473  
[www.HOLZWORTH.com](http://www.HOLZWORTH.com)  
[sales@holzworth.com](mailto:sales@holzworth.com)

Read this product brief online at [www.MicrowaveJournal.com](http://www.MicrowaveJournal.com)