40/200/400 MHz, 100/500/1000 MSPS, 14/16 Bits, 2/4/8 Ch, Analog Output, AWG, Signal Generator with FPGA Option

Features

- 2 / 4 / 8 analog output channels
- 100 MSPS / 500 MSPS / 1 GSPS per channel
- DC to 40 MHz / 200 MHz / 400 MHz output frequency
- 40 MHz / 200 MHz / 400 MHz real-time bandwidth
- 2 / 3 V_{pp} output amplitude
- 16/14-bit resolution (up to $\sim$ 46 μV @ 3 V_{pp} output range)
- Embedded high-precision Function Generators (FGs):
  - Sinusoidal, triangular, square, DC, etc.
  - 45-bit frequency resolution (up to $\sim$ 5.68 μHz)
  - 24-bit phase resolution (up to $\sim$ 21.5 μdeg)
- Embedded feature-rich Arbitrary Waveform Generators (AWGs):
  - Advanced triggering (HW trigger, HVI trigger, SW trigger)
  - Waveform queue system with cycles, delays and prescalers
- Embedded ultra-flexible angle / amplitude modulators:
  - Modulations: AM, FM, PM, ASK, FSK, PSK, etc.
  - Modulating signals generated with the AWGs
- High-quality low phase noise output signal:
  - SFDR: down to $\sim$ 70 dBc @ 120 MHz
  - Crosstalk: down to $<$ -105 dB @ 120 MHz (non-adjacent ch)
  - Average Noise Density: down to $\sim$ -144 dBm/Hz
- 16 MB, 128 MB or 1 GB of RAM
- Hardware programming using Signadyne HVI Technology
  - User-friendly flowchart-style programming (no VHDL needed)
  - Ultra-fast real-time execution & decision making by hardware
  - Built-in inter-module synchronization & data exchange
  - Complete robustness, PC-independent execution without OS
- Onboard user-programmable FPGA (F models):
  - Xilinx Kintex-7 160T/325T
- Mechanical/Interface:
  - 1 slot 3U/6U (modular standards)
  - Up to 350 MB/s transfer speed with P2P communication
  - Independent DMA channels for fast and efficient data transfer

Programming Tools and Application Software

- Off-the-shelf functionalities:
  - Software execution: programming libraries for most common languages, e.g. C, C++, C#, VB, LabVIEW, MATLAB, etc.
  - Hardware execution: real-time HVI technology with Signadyne ProcessFlow, a flowchart-style programming environment
- Signadyne VirtualKnob: software front panels

Applications

- General purpose D/A, RF / arbitrary waveform generation
- Telecom Tx, RADAR, MIMO, Software-Defined Radio (SDR)
- Hardware-In-the-Loop (HIL) / ATE (Automated Test Equipment)
- R&D / Scientific research equipment
- OEM for industrial machinery
- Aerospace & defense COTS equipment

General Description

The SD AOU-H3300/H3300F Series are high-performance modules with analog outputs and advanced off-the-shelf features, such as Arbitrary Waveform Generators (AWGs), Function Generators (FG) and modulators (frequency/phase/amplitude), converting the product into a powerful high-bandwidth signal generator. Signadyne's HVI technology allows the user to develop real-time applications without the need to program VHDL. In addition, users can also program custom FPGA code for onboard real-time digital signal processing (F models).

Product Table

Product	Analog Outputs					Modulations			FPGA Programming
	Freq. (MHz)	Speed (MSPS)	Bits	Ch	BW (MHz)	Amplitude / Angle	Simultaneous Amplitude & Angle	DUC / IQ with ODSP[1]	
AOU-H3344(F)	DC-400	1000	14	4	400	✓	-	-	✓ [2]
AOU-H3343(F)	DC-400	1000	14	2	400	✓	-	-	✓ [2]
AOU-H3334(F)	DC-200	500	16	4	200	✓	-	-	✓ [2]
AOU-H3333(F)	DC-200	500	16	2	200	✓	-	-	✓ [2]
AOU-H3324(F)	DC-40	100	14	8	40	✓	-	-	✓ [2]
AOU-H3323(F)	DC-40	100	14	4	40	✓	-	-	✓ [2]
Related Products									
AOU-H3443 / 44	DC-400	1000	14	2 / 4	400	✓	✓	✓	✓ [2]
AOU-H3433 / 34	DC-200	500	16	2 / 4	200	✓	✓	✓	✓ [2]
AOU-H3423 / 24	DC-40	100	14	4 / 8	40	✓	✓	✓	✓ [2]

[1] Digital Up Converter (DUC) / IQ modulator with Onboard Digital Signal Processing (ODSP) [2] F model