

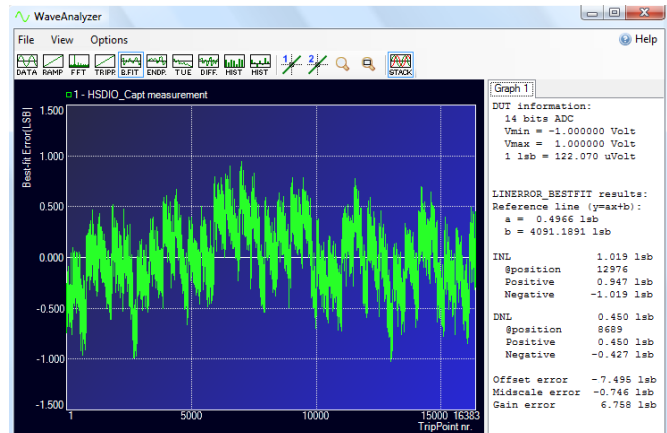
# ATX-Express compact data converter test system



## Features

- Fully integrated data converter test solution
- Sample rates from DC up to 200/400MHz
- Unsurpassed signal quality and accuracy
- Coherent measuring by default
- Flexible and versatile digital IO
- Extended Analysis software included
- Static, Dynamic and Histogram testing
- Lua script for easy user test implementation

The ATX-Express is a fully integrated solution for testing ADCs, DACs and other Analog functions. It features the same signal quality and versatility as the ATX7006, but is limited to 5 slots. Further it has no built-in display, all system settings are accessed via Ethernet or USB. If desired an external monitor can be connected. The ATX-Express is ideal for test labs that don't have a wide range of converters to test and therefore can settle with less slots. The ATX-Express is a single instrument for testing data converters. This saves the investment in various high end rack and stack instruments and writing proprietary software to control them.



INL / DNL measurement of a 14-bit / 65Msps ADC

This means you can concentrate on testing your converters rather than fine-tuning the test set-up. The ATX-Express is capable of testing converters from 4 to 24-bit. Its versatile digital I/O makes interfacing to the DUT easy, even for embedded converters. The Single Reference Architecture improves the stability and reduces calibration effort. The backplane distributed clock ensures coherent measuring.

The ATX-Express can also be used as an add-on upgrade for ATE systems.

Please see the ATX7006 documentation for more details.

# ATX-Express compact data converter test system

## General specifications:

- 4U high Case Frame with integrated air cooling
- Power supplies, 115 / 230VAC
- Controller module running Windows™ XP embedded
- Ethernet and USB communication ports
- Built-in signal generation and error calculations for production measurements
- ATView Analysis software for Engineering and Qualification purposes (for Windows PC)

Standard configuration: Digital-IO module, 20-bit AWG, Dual Reference Source.



ATX-Express inside, screened modules, linear power supplies.

## Summary of modules specifications:

### AWG20 module

|                           |                                       |
|---------------------------|---------------------------------------|
| Resolution                | 20-bit                                |
| Update rate (max.)        | 2Msps                                 |
| Pattern depth             | 4M-words                              |
| Output ranges (Vpp, SE)   | 80mV to 10.24V in x2 steps            |
| Common mode voltage       | -5V to + 5V (20-bit resolution)       |
| Output configuration      | Differential, Single Ended, 50Ω       |
| Output filters            | None, 200kHz, 40kHz, 12kHz, 1.2kHz    |
| Absolute accuracy         | ±(40μV + 10ppm of range)              |
| Non Linearity             | ±8ppm of range (4ppm typical)         |
| SNR (1kHz, 5Vpp)          | 92dB (BW= DC-800kHz)                  |
| THD (1kHz, 5Vpp)          | -108dB (-115dB with 1.2kHz filter on) |
| THD (10kHz, 5Vpp)         | -106dB                                |
| SFDR (1kHz, 5Vpp, 1.67Ms) | 108dB (no filter)                     |

### AWG16 module

|                            |                                     |
|----------------------------|-------------------------------------|
| Resolution                 | 16-bit                              |
| Update rate (max.)         | 200Msps DIO clk/400Msps ext. clk    |
| Pattern depth              | 8M-words                            |
| Output ranges Single Ended | 480mVpp to 5.12Vpp in 8 ranges      |
| Output ranges Differential | 960mVpp to 10.24Vpp in 8 ranges     |
| Common mode voltage        | -2.56 to +2.56V (16-bit resolution) |
| Output configuration       | Differential or single ended, 50Ω   |
| Output filters             | None, 60MHz, 30MHz, 15MHz           |
| Absolute accuracy          | ±(500μV+0.08% of range)             |
| SNR (fs=200Ms, fout=1MHz)  | 70dB (BW DC-100MHz)                 |
| THD (fs=200Ms, fout=1MHz)  | -87dB                               |
| SFDR (fs=200Ms, fout=1MHz) | 88dB                                |

|                      | Dual Reference Source | Dual Power Supply     |
|----------------------|-----------------------|-----------------------|
| No. of outputs       | 2                     | 2                     |
| Resolution           | 20-bit                | 16-bit                |
| Settling time        | 20ms                  | 10ms                  |
| Output configuration | 2 or 4-wire           | 2 or 4 wire           |
| Output range         | ±10V                  | ±12V                  |
| Accuracy             | ±(25μV+10ppm.Vo)      | ±(4mV+0.2%.Vout)      |
| Noise (DC- 100kHz)   | 5μVrms (typical)      | 18μVrms (typical)     |
| Output current       | 10mA                  | 200mA                 |
| Current limit range  | n.a.                  | 10mA - 200mA          |
| Voltage readback     | 24-bit (DVM function) | 16-bit (volt&current) |
| V-out modulation     | n.a.                  | 1mHz - 1kHz           |

### WFD20 module

|                           |                                      |
|---------------------------|--------------------------------------|
| Resolution                | 20-bit                               |
| Sample rate (max.)        | 2Msps                                |
| Capture memory            | 4M-words                             |
| Input ranges (Vpp)        | 0.544V to 8.16V in 8 ranges          |
| DC offset voltage         | -5V to + 5V (19-bit resolution)      |
| Input configuration       | differential or single, 100MΩ / 35pF |
| Input filters             | Bypass, 800kHz, 250kHz, 40kHz        |
| Non Linearity             | ±(40μV + 10ppm of range)             |
| Relative accuracy (INL)   | ±8ppm of range (3ppm typical)        |
| SNR (1kHz, 5Vpp)          | 93dB (BW= DC-800kHz)                 |
| THD (1kHz, 2Vpp)          | -110dB                               |
| THD (10kHz, 2Vpp)         | -106dB                               |
| SFDR (1kHz, 2Vpp, 1.67Ms) | 108dB (no filter)                    |

### WFD16 module

|                            |                                   |
|----------------------------|-----------------------------------|
| Resolution                 | 16-bit                            |
| Sample rate (max.)         | 180Msps                           |
| Capture memory             | 8M-words                          |
| Input ranges               | 0.512Vpp to 7.688Vpp in 16 ranges |
| Input impedance            | 50Ω or 10kΩ/25pF                  |
| Input configuration        | Differential/single ended, AC/DC  |
| Input filters              | Bypass, 60MHz, 30MHz, 15MHz       |
| Absolute accuracy          | ±(800μV+0.1% of range)            |
| Non Linearity              | ±0.006 of range                   |
| SNR (fs=160Ms, fout=1MHz)  | 70dB (BW DC-80MHz)                |
| THD (fs=160Ms, fout=1MHz)  | -89dB                             |
| SFDR (fs=160Ms, fout=1MHz) | 90dB                              |

### Digital-IO module

|                            |                                |
|----------------------------|--------------------------------|
| Data In- Outputs           | 20-bit parallel, 24-bit serial |
| Data IO Formats            | parallel, byte by byte, serial |
| Capture / Stimuli memory   | 4Mword x 24 bits               |
| Maximum data rate          | 50MHz (low speed mode)         |
| Pattern generator          | 100MHz, 64kword x 16 bits      |
| Digital I/O levels         | 1.2V to 3.3V/5V CMOS.          |
| <i>High Speed Mode:</i>    |                                |
| Data source / capture rate | 200MHz (max.)                  |
| External clock rate        | 400MHz (max.)                  |
| Capture / Stimuli memory   | 8Mword x 16 bits               |
| Digital I/O levels         | LVDS (or converter board)      |

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTIFICATION