



► Case Study

Application	Automotive
Product	Portable System with M2i.4932-exp 16 bit Digitizer M2i.7010-exp Digital I/O M2i.6012-exp 14 Bit AWG SBench 6 Software

Automotive Data Recorder

The request was for a complete solution for portable recording of dynamic mixed mode (analog and digital channels) data during test drive. The data should be replayed and analyzed later in Research and Development laboratory. A full working system including operation software was needed.

Who is the customer

Large European manufacturer for sensors, sensor related electronics and software. End applications are automotive, industrial processes, plastic processing and biomechanics. This application is used at a R&D department specified in mechanical sensors for automotive testing.



Requirements by the customer

- A portable and rugged recording and replay system based on Windows 7.
- 8 channels transient recording with 16 bit resolution, sampling rate ≥ 10 MS/s
- 16 synchronous digital input lines ≥ 10 MS/s
- 4 analog replay channels, sampling rate ≥ 10 MS/s
- software for recording, replay, control and analysis

Current Solution and Disadvantages

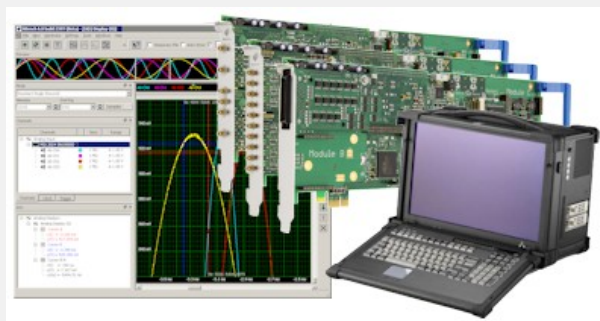
Currently standard automotive data loggers are used. Disadvantage of this and similar solutions is the lack of replay functionality. To allow replay the customer would need a separate system with different software and possibly the need for programming data conversion.

Second there are not many solutions on the market that allow to replay mixed mode data of analog and digital channels simultaneously.

Spectrum Solution and Advantages

The offered and purchased Spectrum solutions consist of:

- Portable computer system with Windows 7 Professional
- SBench 6 Professional with Multi option
- M2i.4932-exp - 8 channels 16 bit digitizer with 30 MS/s
- M2i.7010-exp - 16 channels digital i/o card with 125 MS/s





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- M2i.6012-exp - 4 channels 14 bit arbitrary waveform generator with 20 MS/s
- M2i.xxxx-sh5 - synchronization star-hub for mixed mode operation

The synchronization star-hub is mounted on the fast digital i/o card M2i.7010. This allows to either synchronize digital I/O + digitizer for synchronous acquisition of 8 analog channels and 16 digital channels or it is possible to synchronize digital i/o + waveform generator for synchronous replay of 4 analog channels and 16 digital channels.

Spectrum was able to fulfill the customers requirement in the competition for a reasonable price. The Spectrum solution was the only system with playback capabilities.