

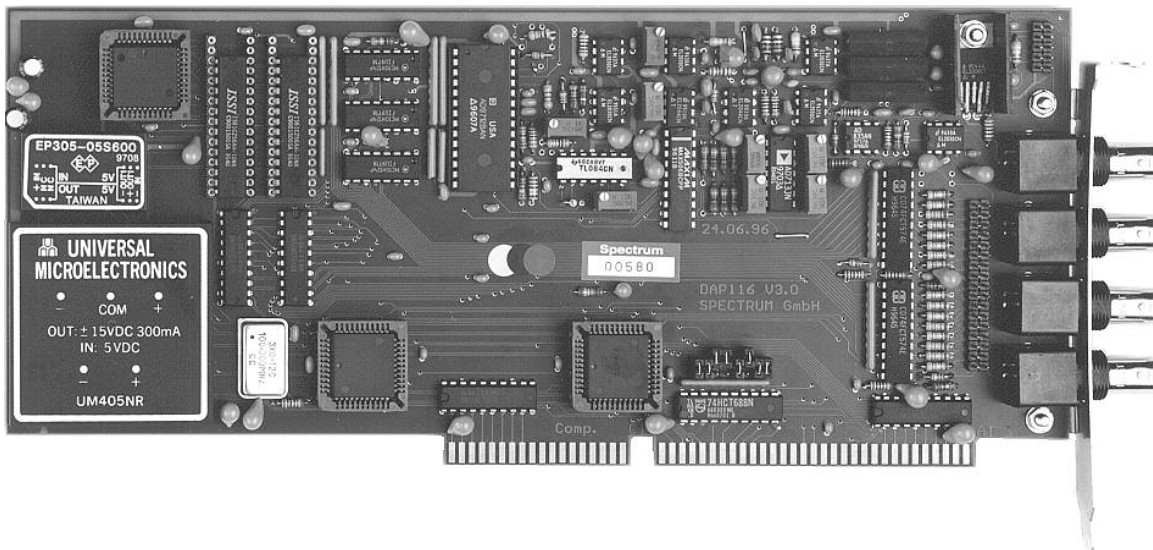


# SPECTRUM

SYSTEMENTWICKLUNG MICROELECTRONIC GMBH

## DAP116 100 MHz ISA arbitrary and waveform generator

- 100 MHz maximale Taktfrequenz
- 12 Bit analoge Auflösung
- 16 Bit Digitalausgang
- Analogsignal 10 V<sub>ss</sub> ± 10 V Offset
- Bis zu 512 kSamples Signalspeicher
- 100 MHz maximum clock frequency
- 12 bit analogue resolution
- 16 bit digital output
- Analogue signal 10 V<sub>pp</sub> ± 10 V offset
- Up to 512 kSamples signal memory



### Allgemeine Information

In dem bis zu 512 kSamples großen 16 Bit Arbeitsspeicher des Arbitrary- und Patterngenerator DAP116 lassen sich beliebige Kurvenformen ablegen. Die DAP116 kann ein 12 Bit Analogsignal sowie 16 Bit Digitaldaten generieren. Die oberen vier Bits werden nicht für das Analogsignal benutzt und können zur Synchronisation verwendet werden.

Die bis zu 100 MHz schnelle Ausgabe kann über ein externes Trigger/Gate Signal gesteuert werden, was die Verbindung mit anderen Karten ermöglicht. Genauso kann die DAP116 über Software gestartet werden.

Pegel und Offset können im Bereich von 0 V bis ±10 V ohne Einschränkung der Genauigkeit auch während der Signalausgabe eingestellt werden. Ein Tiefpaß mit umschaltbarer Grenzfrequenz filtert hochfrequente DAC Glitches aus dem Ausgangssignal.

**Anwendungsbeispiele: Automatische Testsysteme, Synthesizer, Ultraschall**

### Software

Kostenlos mitgeliefert werden Treiber für Linux, DOS, Windows 3.1x, Windows 9x/ME und Windows NT/2000/XP. Für die einfache Programmierung sind Beispiele in C/C++, Delphi und Visual Basic enthalten. Darüber hinaus steht zur komfortablen Steuerung die Signalverarbeitungssoftware SBench 5.2 kostenlos zur Verfügung. Außerdem sind Treiber für LabVIEW, DASYLab, MATLAB und VEE erhältlich.

### General Information

Any signals may be put in the up to 512 kSamples large 16 bit memory of the arbitrary and pattern generator DAP116. The board may produce a 12 bit analogue signal and 16 bit digital data. The highest four bits are not used for the analogue signal and may be used for synchronisation purposes.

The up to 100 MHz output may be controlled by an external trigger or gate signal, enabling the connectivity with other boards. The DAP116 may also be started by software.

Level and offset of the output may be selected in the range from 0 V to ±10 V without any restriction to the accuracy. Level and amplitude may also be changed while the board is running.

A low pass with a selectable border frequency may filter the high frequency parts of the output signal.

**Application examples: Automatic testequipment, Synthesizer, Supersonics**

### Software

Drivers for Linux, DOS, Windows 3.1x, Windows 9x/ME and Windows NT/2000/XP as well as programming examples for C/C++, Delphi and Visual Basic are delivered with the board. Comfortable programming, initialising and data display are performed by the free-of-charge Windows program SBench 5.2. Software drivers for LabVIEW, DASYLab, MATLAB and VEE are available.

## Software programmable parameters

Samplerate 1 kHz to 100 MHz, external clock  
 Output offset  $\pm 10$  V in 256 steps  
 Two misc. DAC's  $\pm 10$  V with 8 bit resolution  
 Triggermode Gate, external, software  
 Memory depth 4 Samples up to installed memory in steps of 1 sample

Filter 500 kHz, 5 MHz, 25 MHz  
 Output amplitude up to 10 Vpp in 240 steps  
 Pattern output enable / disable  
 Triggeredge rising or falling edge, high- / low-level  
 Singleshot enable / disable

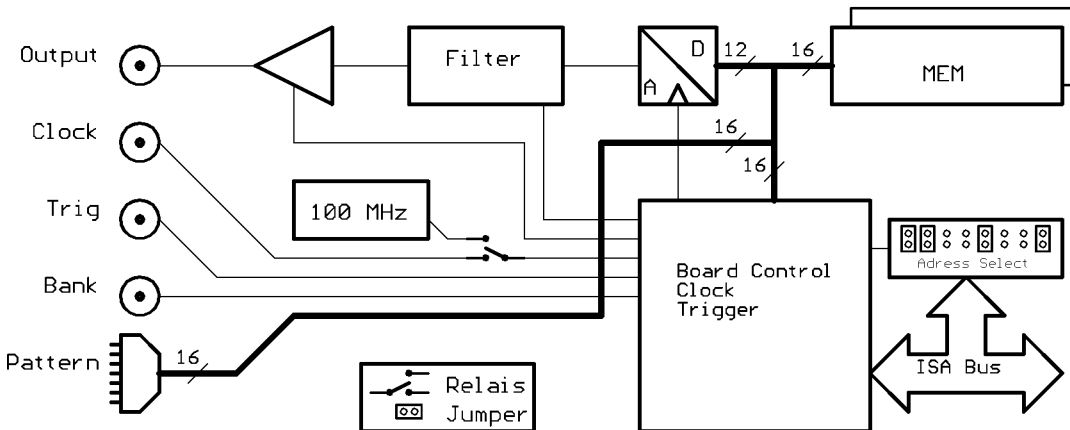
## Technical data

Resolution 12 bit  
 Samplerate 1 kHz up to 100 MHz  
 Integral linearity  $\leq \pm 1.5$  LSB  
 Differential linearity  $\leq \pm 1$  LSB  
 Offset error  $\leq 2$  LSB  
 Gain error  $\leq 1.5$  %  
 Bandwidth -3dB 25 MHz  
 Ext. clock: output delay 7 ns  
 Ext. clock: delay to internal clock 25 ns  
 Output impedance ca. 1 Ohm

Dimension 282 mm x 113 mm  
 Connector 9 mm BNC female  
 Overvoltage protection  $\pm 20$  V  
 Warm up time 10 minutes  
 Operating temperature  $0^{\circ}\text{C} - 50^{\circ}\text{C}$   
 Storage temperature  $-10^{\circ}\text{C} - 70^{\circ}\text{C}$   
 Humidity 10% to 90% non condensing

	-5 V	+5 V	+12 V	-12 V
Power consumption (A)	0 mA	4500 mA	0 mA	0 mA
Power consumption (W)	0.0 W	22.5 W	0.0 W	0.0 W

## Hardware block diagram



## Order information

DAP116 100 MHz	DAP116 100 MHz version with 32 kSamples memory including driver	DAP116
Option 128 k	Memory upgrading to 128 kSamples	PAD116-128
Option 512 k	Memory upgrading to 512 kSamples	PAD116-512
DASYLab driver	Drivers for DASYLab 5.0 for Win 95/98, Win 2000 and Win NT	DAP116-dl
Agilent VEE driver	Drivers for Agilent VEE 5.0 for Win 95/98, Win 2000 and Win NT	DAP116-hp
LabVIEW driver	Drivers for LabVIEW 4.0 for Win 3.11, Win 95/98, Win 2000 and Win NT	DAP116-lv
Matlab driver	Drivers for MatLab 5.0 for Win 95/98, Win 2000 and Win NT	MATLAB

This board is an old product and is not recommended for new designs. Use the MI.6030 instead.

Spectrum reserves the right to make changes at any time to improve design and to supply the best product possible