

MX4140

40 Gb/s 4:1 MUX

PRELIMINARY
Product Information

MICRAM
MICROELECTRONIC

The MX4140 is a 4:1 high-speed Multiplexer for data rates up to 45 Gb/s. Key features are:

- single-ended and differential I/O operation,
- broadband operation,
- adjustable output swing,
- scaleable architecture (e.g. 16:1 MUX)
- single supply voltage.

At the data inputs, the MX4140 consists of four symmetrical buffers which allow for single ended as well as differential drive. Furthermore the input buffers provide a high input sensitivity of 50 mV_{pp} (single ended).

The same holds for the clock input, which runs at half of the frequency of the output data rate (so called 'half-rate clocking': e.g. 20 GHz clock for 40 Gb/s output data rate). This allows to use reasonably priced RF-synthesizers in the 26.5 GHz band for pattern generation in the 40 Gb/s range.

The Multiplexer core consists of three 2:1 Multiplexers arranged in a tree structure to achieve the 4:1 multiplexing functionality. A proprietary Bit Equalizer circuitry in the final MUX stage compensates for imbalances of even and odd bits which is a drawback often observed in competitors' half-rate clocking Multiplexer designs.

The MX4140 exhibits a fully symmetrical differential 50 Ω CML data output buffer which provides either one differential output signal or two single ended output signals. For multi-purpose applications the single ended output CML voltage swing can be adjusted between 300 and 500 mV_{pp} .

As a functional add-on, the MX4140 provides the input clock divided by four at the Clock/4 output. This output can e.g. be used for proper eye-diagram triggering or building higher order multiplexer architectures.

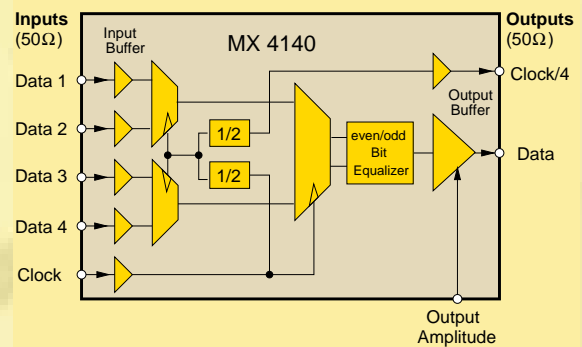
Main fields of application are:

- general high-speed pattern generation,
- multiplexing of STM64/OC192 signals,
- STM256/OC768 serializer,
- speed upgrade of measurement equipment, (e.g. Agilent ParBert or Anritsu 1758/1763)
- low jitter test data generation.

Package:

The MX4140 will be available as ruggedized module with SMA/K connectors.

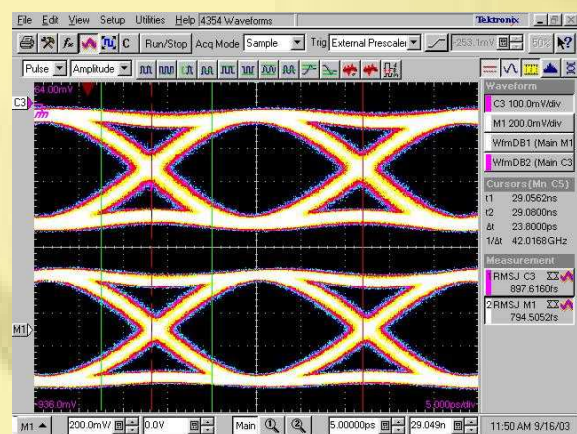
Block diagram of the MX4140 :



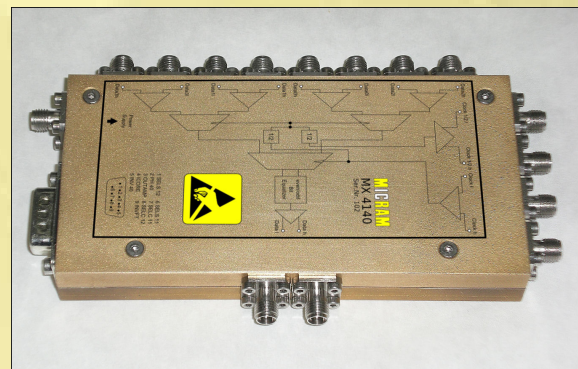
MX4140 data:

Power Supply	-5.5 V
Current Consumption	580 mA
Max. Data Rate	45 Gb/s
Min. Input Amplitude	50 mV_{pp}
Max. Data Output amplitude	1 V_{pp}

MX4140 at 42 Gb/s, single ended input drive: Top: single ended, bottom: differential output.



MX4140 Evaluation board:



For further information on the MX4140 please contact your MICRAM sales representative.