

# MX4130F

## 30 Gb/s 4:1 Multiplexer with FPGA Interface

Type: Module	Technology: SiGe	$f_T / f_{max}$ : 170/250 GHz	Metallization: 4	Ref.-No.: R1026
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### Brief description

The MX4130F is a 4:1 high-speed broadband multiplexer for data rates up to 30 Gb/s. Key features are:

- FPGA interface (LVDS/PCML),
- compatible to Virtex4/5 and Stratix-IV,
- on-chip SerDes channel synchronization circuit,
- on-chip Sonet scrambler,
- serial configuration register (LVTTTL),
- optional retiming clock.

At the data inputs, the MX4130F consists of four identical input stages, which accept differential signals with +0.6 ... +1.5 V common mode and 400 ... 1200 mV swing. They incorporate a differential 100 ohm termination to be compatible to the SerDes outputs of common FPGA.

The clock input runs at half of the frequency of the output data rate (so called 'half-rate clocking': e.g. 15 GHz clock for 30 Gb/s output data rate. For data retiming, either the 15 GHz clock can be internally doubled, or an external 30 GHz clock may be used. The external clock also enables for adding jitter to the output data for testing purpose.

The MX4130F exhibits two fully symmetrical differential 50  $\Omega$  CML data output buffers. The first output is the direct multiplexer output, whereas the second output is retimed. Both buffers provide either one differential output signal or two single ended output signals with a single ended swing of 600 mV<sub>pp</sub>.

Multiple MX4130F can be synchronized to drive I/Q modulators. Thanks to their internal structure, the driving FPGA(s) will be also synchronized.

As a functional add-on, the MX4130F includes a divide-by-64 output, which may be used either to clock the FPGA or to trigger sampling oscilloscopes.

Main fields of application are:

- Multiplexer module for 100G data transmission systems (e.g. I/Q modulation),
- test data generation.

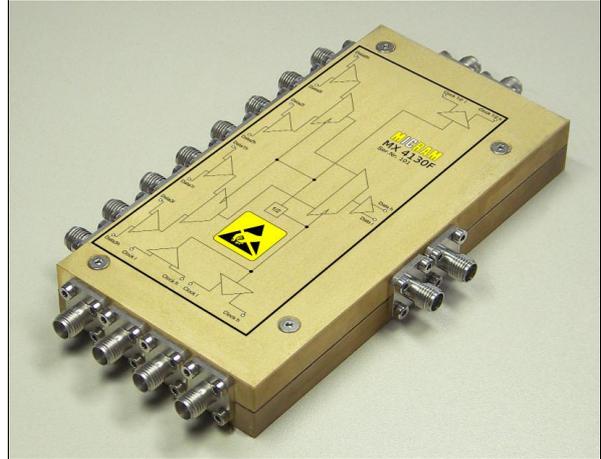
### Package

The MX4130F will be available as ruggedized module with SMA/K connectors.

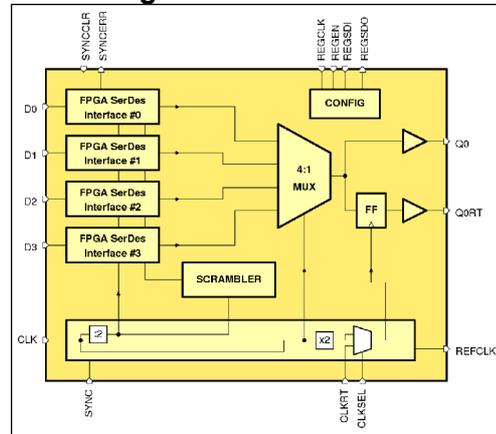
Additional package solutions fitting on the VEGA-V2 application board are available upon request.

For further information on the MX4130F please contact your MICRAM sales representative.

### MX4130F Module



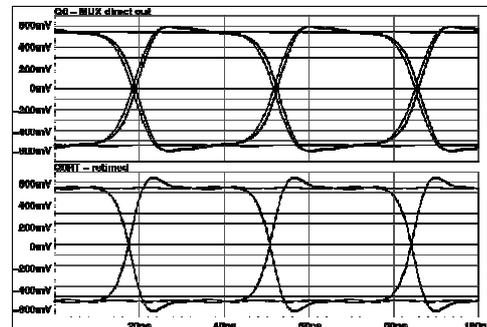
### Block diagram of the MX4130F



### MX4130F electrical data

Power supplies	+3.3V / +1.5V / -3.3V / -4.5V
Power dissipation	~4 W
Data rate	1 ... >30 GB/s
Output amplitude	600mV <sub>se</sub> / 1.2 V <sub>diff</sub>

### MX4130F simulated output @ 30Gb/s



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MICRAM Microelectronic GmbH  
Test & Measurement Solutions

www.micram.com  
Tel.: +49-234-9708-300

光貿易株式会社  
〒113-0034  
東京都文京区湯島3-13-8 湯島不二ビル301号  
TEL: 03-3832-3117 FAX: 03-3832-3118  
e-mail: contact@hikari-trading.com  
http://www.hikari-trading.com/