



Micrel's 2Q08 Quarterly Customer New Product Newsletter

Welcome to Micrel's quarterly customer product newsletter. Each quarter we will bring you a comprehensive listing of Micrel's new products. For additional information, please go to our web site at: <http://www.micrel.com> . Also, you can click on any link below to go directly to a product datasheet.

The following is a list of new Micrel products released in the second quarter of 2008.

1. KSZ8841-16MBL, KSZ8842-PMBL, KSZ8842-16MBL, and KSZ8893MBL. ETHERNET MAC CONTROLLER AND MANAGED ETHERNET SWITCHES NOW IN FBGA packages
2. KSZ8995FQ 5 PORT 10/100 MANAGED SWITCH WITH FIBER PORTS on PORT 3 & 4
3. MIC22400* 4A INTEGRATED SWITCH SYNCHRONOUS BUCK REGULATOR WITH FREQUENCY PROGRAMMABLE UP TO 4MHZ
4. MIC5322* Dual, High Performance 150mA uCap ULDO™
5. MIC5325* LOW VIN/VOUT 400MA ULDO™ WITH ULTRA-LOW IQ
6. MIC69100* SINGLE SUPPLY VIN, LOW VIN, LOW VOUT, 1A LDO
7. MIC69150* SINGLE SUPPLY VIN, LOW VIN, LOW VOUT, 1.5A LDO
8. MIC69300* SINGLE SUPPLY VIN, LOW VIN, LOW, VOUT, 3A LDO
9. MIC69301* SINGLE SUPPLY VIN, LOW VIN, LOW, VOUT, 3A LDO
10. MIC94064* HIGH SIDE POWER SWITCHES
11. MIC94065* HIGH SIDE POWER SWITCHES
12. SY54011R* LOW VOLTAGE 1:2V/1.8V CML 1:2 FANOUT BUFFER, 3.2GBPS, 3.2GHZ
13. SY54016AR* LOW VOLTAGE 1.2/1.8V CML DIFFERENTIAL LINE DRIVER/ RECEIVER 3.2GBPS, 3.2GHZ
14. SY54016R* LOW VOLTAGE 1.2/1.8V CML DIFFERENTIAL LINE DRIVER/ RECEIVER WITH FSI 3.2GBPS, 2.5GHZ
15. SY54017AR* LOW VOLTAGE 1.2/1.8V CML 2:1 MUX 3.2GBPS, 3.2GHZ
16. SY54017R* LOW VOLTAGE 1.2/1.8V CML 2:1 MUX WITH FSI, 3.2GBPS, 2.5GHZ
17. SY54023R* LOW VOLTAGE 1.2/1.8V CML 2X2 CROSSPOINT SWITCH WITH FSI, 3.2GBPS, 2.5GHZ
18. SY87725L* 2.5GBPS GPON/BPON ONU SERDES
19. SY88212L* 3.3V, 2.5GBPS LASER DIODE DRIVER WITH INTEGRATED BIAS AND APC
20. SY89297U* 2.5V, 3.2GBPS PRECISION CML DUAL-CHANNEL PRORAMMABLE

DELAY

21. SY89610L* 3.3V, 77.75MHZ TO 694MHZ PRECISION FREQUENCY SYNTHESIZER WITH INTERNAL I/O TERMINATION

New Product Details

1. **KSZ8841-16MBL, KSZ8842-PMBL, KSZ8842-16MBL and KSZ8893MBL ETHERNET SINGLE PORT MAC CONTROLLER & 10/100 ETHERNET SWITCHES**

The new products come in a 9mm x 9mm, 100-ball FBGA package. The devices are Micrel's latest members of its embedded controller family and 3-port switches, all offering small footprint, secure IC-to-ICs over the PCB, and ease-of-manufacturing. The ICs are ideal for numerous Ethernet applications in the Telecommunication, Automotive, Ethernet switching and Industrial Ethernet arenas and complement the traditional solutions offered in a QFP package.

http://www.micrel.com/page.do?page=/product-info/fastether_sw.jsp

2. **KSZ8995FQ 5 Port 10/100 Managed Switch**

The KSZ8995FQ is Micrel's latest member of the 5-port switch family. The new solution enables users to successfully build loop applications by using two fiber ports 3 and 4 to cascade together a ring, while still utilizing the MII interface on port 5 to the CPU/Host. The highly versatile device is ideal for Industrial Ethernet, Managed Media converters, and FTtx customer premise equipment in the Telecommunications and Enterprise markets. The device is offered in a compact, cost effective 128-pin PQFP package.

http://www.micrel.com/page.do?page=/product-info/fastether_sw.jsp

3. **MIC22400* 4A Integrated Switch Synchronous Buck Regulator with Frequency Programmable Up To 4 MHZ**

The Micrel MIC22400 is a high efficiency 4A integrated switch synchronous buck (step-down) regulator. The MIC22400 is optimized for highest efficiency and achieves over 90% efficiency while still switching at 1MHz over a broad load range. The ultra-high speed control loop keeps the output voltage within regulation even under extreme transient load swings commonly found in FPGAs and low voltage ASICs. The output voltage can be adjusted down to 0.7V to address all low voltage power needs. A full range of sequence options are available with the MIC22400. The enable/delay pin, combined with the power good pin, allows multiple outputs to be sequenced in

any way on turn on and turn off. The RC (Ramp Control™) pin allows the device to be connected to another MIC22400 family of products to keep the output voltages within a certain ΔV on start up.

<http://www.micrel.com/page.do?page=/product-info/products/mic22400.jsp>

4. **MIC5322* Dual, High Performance 150mA uCap ULDO™**

The MIC5322 is a tiny Dual Ultra Low-Dropout (ULDO™) linear regulator ideally suited for those applications that require high Power Supply Rejection Ratio (PSRR). It provides a bypass pin to increase PSRR for noise sensitive portable electronics. The MIC5322 integrates two high-performance; 150mA ULDOs into a very compact 1.6mm x 1.6mm leadless Thin MLF® package with exceptional thermal package characteristics.

<http://www.micrel.com/page.do?page=/product-info/products/mic5322.jsp>

5. **MIC5325* LOW VIN/VOUT 400MA ULDO™ WITH ULTRA-LOW IQ**

The MIC5325 is a high performance, μ Cap low dropout regulator, offering ultra-low operating current while maintaining very fast transient response. The MIC5325 can source up to 400mA of output current and allows a low input supply voltage source to increase system efficiency.

<http://www.micrel.com/page.do?page=/product-info/products/mic5325.jsp>

6. **MIC69100* SINGLE SUPPLY VIN, LOW VIN, LOW VOUT, 1A LDO**

The MIC69101/103 is the 1A output current member of the MIC69xxx family of high current, low voltage regulators, which support currents of 1A, 1.5A, 3A, and 5A. The MIC69101/103 operates from a single low voltage supply, yet offers high precision and ultra-low dropout of 500mV under worst case conditions.

<http://www.micrel.com/page.do?page=/product-info/products/mic69100.jsp>

7. **MIC69150* SINGLE SUPPLY VIN, LOW VIN, LOW VOUT, 1.5A LDO**

The MIC69151/153 is the 1.5A output current member of the MIC69xxx family of high current, low voltage regulators, which support currents of 1A, 1.5A, 3A, and 5A. The MIC69151/153 operates from a single low voltage supply, yet offers high precision and ultra-

low dropout of 500mV under worst case conditions.

<http://www.micrel.com/page.do?page=/product-info/products/mic69150.jsp>

8. MIC69300* SINGLE SUPPLY VIN, LOW VIN, LOW, VOUT, 3A LDO

The MIC69301/302 is the 3A output current member of the MIC69xxx family of high current, low voltage regulators, which support currents of 1A, 1.5A, 3A, and 5A. This family operates from a single low voltage supply, yet offers high precision and ultra low dropout of 500mV under worst case conditions.

<http://www.micrel.com/page.do?page=/product-info/products/mic69300.jsp>

9. MIC69301* SINGLE SUPPLY VIN, LOW VIN, LOW, VOUT, 3A LDO

The MIC69301/302 is the 3A output current member of the MIC69xxx family of high current, low voltage regulators, which support currents of 1A, 1.5A, 3A, and 5A. This family operates from a single low voltage supply, yet offers high precision and ultra low dropout of 500mV under worst case conditions.

<http://www.micrel.com/page.do?page=/product-info/products/mic69300.jsp>

10. MIC94064* HIGH SIDE POWER SWITCHES

The MIC94064 and MIC94065 are high-side load switches designed for operation between 1.7V to 5.5V. The devices contain a low on-resistance P-channel MOSFET that supports over 2A of continuous current.

<http://www.micrel.com/page.do?page=/product-info/products/mic94064-5.jsp>

11. MIC94065* HIGH SIDE POWER SWITCHES

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<http://www.micrel.com/page.do?page=/product-info/products/mic94064-5.jsp>

12. SY54011R* LOW VOLTAGE 1:2V/1.8V CML 1:2 FANOUT BUFFER, 3.2GBPS, 3.2GHZ

The SY54011R is a fully differential, low voltage 1.2V/1.8V CML 1:2 fanout buffer. It is optimized to provide two identical output copies with less than 15ps of skew and less than 10ps pp total jitter. The SY54011R can process clock signals as fast as 3.2GHz or data patterns up to 3.2Gbps.

<http://www.micrel.com/page.do?page=/product-info/products/sy54011r.jsp>

13. SY54016AR* LOW VOLTAGE 1.2/1.8V CML DIFFERENTIAL LINE DRIVER/RECEIVER 3.2GBPS, 3.2GHZ

The SY54016AR is a fully differential, low voltage 1.2V/1.8V CML Line Driver/Receiver. The SY54016AR can process clock signals as fast as 3.2GHz or data patterns up to 3.2Gbps.

<http://www.micrel.com/page.do?page=/product-info/products/sy54016ar.jsp>

14. SY54016R* LOW VOLTAGE 1.2/1.8V CML DIFFERENTIAL LINE DRIVER/RECEIVER WITH FSI 3.2GBPS, 2.5GHZ

The SY54016R is a fully differential, low voltage 1.2V/1.8V CML Line Driver/Receiver with Fail-Safe Input. The SY54016R can process clock signals as fast as 2.5GHz or data patterns up to 3.2Gbps.

<http://www.micrel.com/page.do?page=/product-info/products/sy54016r.jsp>

15. SY54017AR* LOW VOLTAGE 1.2/1.8V CML 2:1 MUX 3.2GBPS, 3.2GHZ

The SY54017AR is a fully differential, low voltage 1.2V/1.8V CML 2:1 MUX. The SY54017AR can process clock signals as fast as 3.2GHz or data patterns up to 3.2Gbps.

<http://www.micrel.com/page.do?page=/product-info/products/sy54017ar.jsp>

16. SY54017R* LOW VOLTAGE 1.2/1.8V CML 2:1 MUX WITH FSI, 3.2GBPS, 2.5GHZ

The SY54017R is a fully differential, low voltage 1.2V/1.8V CML 2:1 MUX with Fail Safe Inputs. The SY54017R can process clock signals as fast as 2.5GHz or data patterns up to 3.2Gbps.

<http://www.micrel.com/page.do?page=/product-info/products/sy54017r.jsp>

17. SY54023R* LOW VOLTAGE 1.2/1.8V CML 2X2 CROSSPOINT SWITCH WITH FSI, 3.2GBPS, 2.5GHZ

The SY54023R is a fully differential, low voltage 1.2V/1.8V CML 2x2 Crosspoint Switch with Fail Safe Inputs. The SY54023R can process clock signals as fast as 2.5GHz or data patterns up to 3.2Gbps.

<http://www.micrel.com/page.do?page=/product-info/products/sy54023r.jsp>

18. SY87725L* 2.5GBPS GPON/BPON ONU SERDES

The SY87725L is a single chip transceiver for data rates up to 2.5Gbps. On the receive side, it includes a complete clock recovery and data retiming circuit with an integrated 4-bit serial-to-parallel data converter. On the transmit side, it includes a synthesizer with an integrated 4-bit parallel-to-serial data converter.

<http://www.micrel.com/page.do?page=/product-info/products/sy87725l.jsp>

19. SY88212L* 3.3V, 2.5GBPS LASER DIODE DRIVER WITH INTEGRATED BIAS AND APC

The SY88212L is a single supply 3.3V laser driver for datacom and telecom applications with data rates from 155Mbps up to 2.5Gbps. The driver can deliver modulation current up to 85mA, and provides a high compliance voltage that makes it suitable for high-current operation with the laser DC-coupled to it. The drivers have integrated bias and Automatic Power Control (APC) functions.

<http://www.micrel.com/page.do?page=/product-info/products/sy88212l.jsp>

20. SY89297U* 2.5V, 3.2GBPS PRECISION CML DUAL-CHANNEL PROGRAMMABLE DELAY

The SY89297U is a DC-3.2Gbps programmable, two-channel delay line. Each channel has a delay range from 2ns to 7ns (5ns delta delay) in programmable increments as small as 5ps. The delay step is extremely linear and monotonic over the entire programming range, with 20ps INL over temperature and voltage.

<http://www.micrel.com/page.do?page=/product-info/products/sy89297u.jsp>

21. SY89610L* 3.3V, 77.75MHZ TO 694MHZ PRECISION FREQUENCY SYNTHESIZER WITH INTERNAL I/O TERMINATION

The SY89610L is a 3.3V, fully differential CML frequency synthesizer that accepts a noisy clock between 19.44MHz and 694MHz, depending on I/O frequency selection, and provides an ultra-low jitter clock signal. This corresponds to an output clock frequency between 77.75MHz and 694MHz covering SONET, SAS, SATA, Fiber Channel, and many other standards. Output jitter is typically 1ps rms. The SY89610L includes a 1kHz to 10kHz programmable loop bandwidth so it can accommodate different jitter attenuation applications and PLL requirements.

<http://www.micrel.com/page.do?page=/product-info/products/sy89610l.jsp>