

endrich news

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ELECTRONICA **SPECIAL** NEWS – PART 2

OUR PRODUCT HIGHLIGHTS



FEATURES

- MCU: Gigadevice GD32VF103 RISC-V architecture
- GSM modem: Fibocom MA510 3 mode IoT modem (NB-IoT, LTE-M & 2G fallback)
- Power: Li-Ion battery (3.6 V) or USB (5 V)
- Sensors: ALS, HALL, NTC, Altitude, Air pressure, MEMS Microphone, Vibration
- GPS (GNSS) function
- Internal and external aerials
- MEMS oscillator-based clock signals
- Industrial temperature range -20 °C ... +85 °C
- SIM card support (please check for each individual countries)



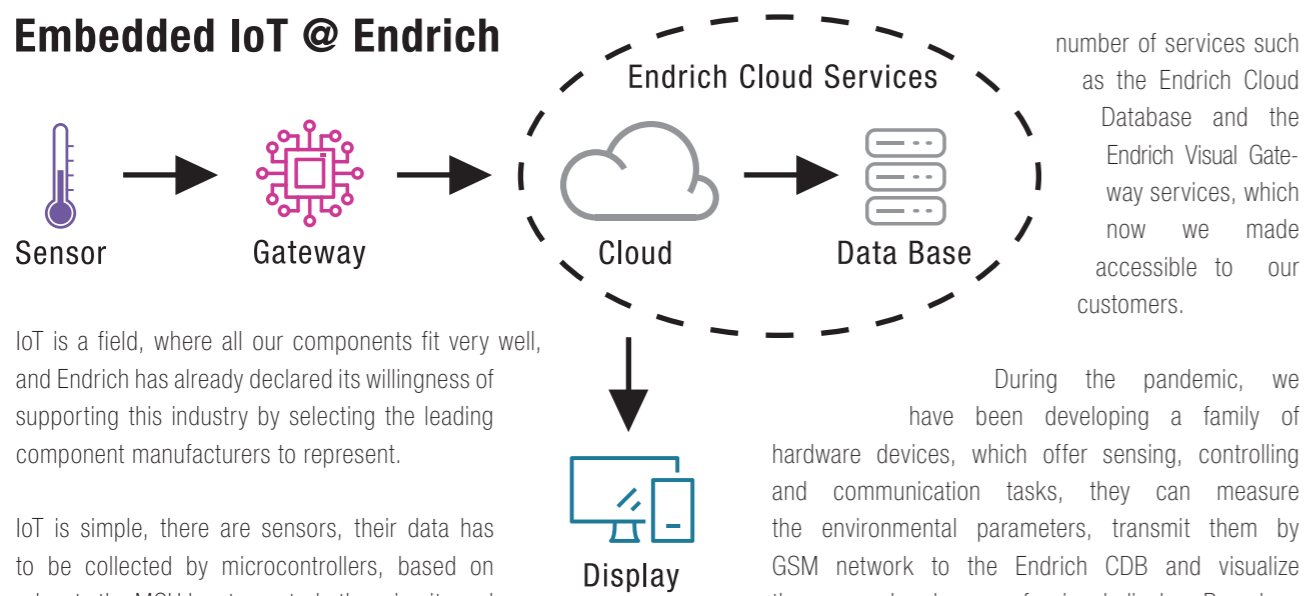
2020 – THE YEAR OF DISASTER & MIRACLES



The whole electronics industry has been suffering from the COVID-19 crisis since the very beginning of the year, supply chains have been shut down, production decreased dramatically. This is the right time for a healthy company to invest into the future.

So we did it at Endrich, and fulfilled our long time wish of finding a way extending our core business – component distribution – with a higher level of integration of our products, offer complete solutions to customers. We have developed and introduced a complete IoT test infrastructure and also used the time to go online with our engineering knowledge base built in the last several years.

Embedded IoT @ Endrich



IoT is a field, where all our components fit very well, and Endrich has already declared its willingness of supporting this industry by selecting the leading component manufacturers to represent.

IoT is simple, there are sensors, their data has to be collected by microcontrollers, based on rulesets the MCU has to control other circuits and needs to transfer the data over low power, wide area networking GSM modem technology such as NB-IoT or LTE-M into a cloud database. Endrich offers high-tech parts for this, but hardware made of components without services does not mean a solution.

Starting from the first IoT demos offered at Electronica 2018, Embedded 2019 and 2020, we have been developing a

number of services such as the Endrich Cloud Database and the Endrich Visual Gateway services, which now we made accessible to our customers.

During the pandemic, we have been developing a family of hardware devices, which offer sensing, controlling and communication tasks, they can measure the environmental parameters, transmit them by GSM network to the Endrich CDB and visualize them on a handy or professional display. Based on preprogrammed rule sets, the IoT board family is able to control other circuits too.

We exhibited this concept - first time since is completed - in the Industry Days 2020 Exhibition in Budapest, where the Endrich IoT Ecosystem (including the IOT hardware family and the own software services) has been nominated and later awarded with the Grand Prix of the event. We hope this is the start of a new

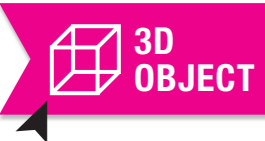
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era, where a special technical distributor company offers an extended service to its customers in design-in support, as well as to its suppliers representing their technical solutions on a higher level.



All the key components belong to our manufacturers and represent recent novelty technologies:

- Sensors**: Tateyama and Semitec temperature sensors, Everlight ambient light sensors, TDK Micronas Hall sensors, Sensolute vibration sensors, BSE MEMS microphones
- Power supplies**: MPS and ESMT DC/DC converters, EVE Li-SocI2+SPC battery pack solution
- Protection**: ProTEK Devices TVSD solutions
- Timing**: SiTime MEMS Oscillators
- Microcontroller**: GigaDevice RISC-V MCU & Flash memory
- Communication**: Fibocom NB-IoT / LTE-M / 2G modem family, 2J Antennas
- Interfaces to sensors**: NJRC SPI ADC converters, HOLTEK I2C ADC converters
- LEDs**: Everlight and Dominant signal LEDs



LPWA MODULE MA510-GL-50

NEW!
With support
E-UTRA Band 31
(450 MHz)

Fibocom MA510-GL-00 is a high-performance IoT module, which is tailor-made for the European IoT market.

It is developed based on the Qualcomm platform and is packaged in LCC+LGA. It also supports LTE Cat-M1 / Cat-NB2 / EGPRS.

Supporting global frequency band, supporting 450MHz, built-in GNSS, integrated MQTT / CoAP / LWM2M rich network

protocol, UART / USB / I2C / I2S multiple standard industrial interfaces, support eDRX and PSM low power mode, PSM as low as 3.2µA. Suitable for IoT applications with low power consumption and ultra-small size, such as smart meter, smart parking, wearable devices, asset tracking, smart city, etc.

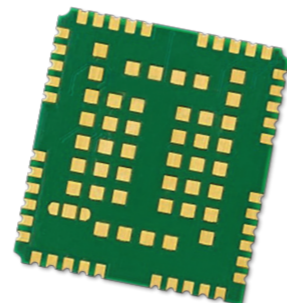
FEATURES

- Dimension: 22.2 x 20.2 x 2.1 mm
- Package: LCC + LGA, 86 Pin
- Operating frequency band:
 - Cat-M1: B1/2/3/4/5/8/12/13/18/19/20/25/26/27/28/31/66/72/73/85
 - Cat-NB2: B1/2/3/4/5/8/12/13/18/19/20/25/26/28/31/66/72/73/85
- EGPRS: 850/900/1800/1900 MHz
- GNSS: GPS/GLONASS/BeiDou/Galileo
- Operating temperature: -40 °C ~ +85 °C
- Storage temperature: -40 °C ~ +90 °C
- Operating voltage: 3.3V ~ 4.5V
- AT command set: 3GPP TS 27.007 and 27.005, proprietary FIBOCOM AT commands
- TX power:
 - GSM850/900: 32.5 dBm ±1 dB
 - DCS1800/PCS1900: 29.5dBm ±1 dB
 - Cat-M1: B31/72/73 26d Bm ± 1.5d B
B5/8/18/19/20/26/27 23d Bm ± 1.5d B
B1/2/3/4/12/13/25/28/66/85 21d Bm ± 1.5d B
 - Cat-NB2: B31/72/73 26 dBm ±1.5 dB
B5/8/18/19/20/26 23 dBm ±1.5 dB
B1/2/3/4/12/13/25/28/66/85 21 dBm ±1.5 dB
- Data transmission:
 - Cat-M1: Max. 375 Kbps (DL) / Max. 1119 Kbps (UL)
 - Cat-NB1: Max. 63.4 Kbps (DW) / Max. 95.1 Kbps (UW)
 - Cat-NB2: Max. 127 Kbps (DL) / Max. 158.5 Kbps (UL)
 - EGPRS: Max. 296 Kbps (DL) / Max. 236.8 Kbps (UL)
 - GPRS: Max. 107 Kbps (DL) / Max. 85.6 Kbps (UL)
- PPP/TCP/UDP/SSL/TLS/FTP(S)/HTTP(S)
- MQTT/CoAP/LWM2M
- VoLTE/NITZ/PING/Jamming detection
- DFOTA
- OpenCPU (planning/developing)
- Functional interfaces: SIM 1.8 V / UART x3 / USB 2.0 x1 / I2C x1 / SPI x1 / I2S x1 / ADC x2 / GPIO x4 / antenna x2
- OS Drivers: Linux/Windows/Android
- Certifications (planning/developing: RoHS/HF/CE/GCF)

APPLICATIONS

- Smart meter
- Smart parking
- Wearable devices
- Asset tracking
- Smart city

3D OBJECT



BM25S2021-1 TEMPERATURE AND HUMIDITY DIGITAL SENSOR

HAVE A LOOK

APPLICATIONS

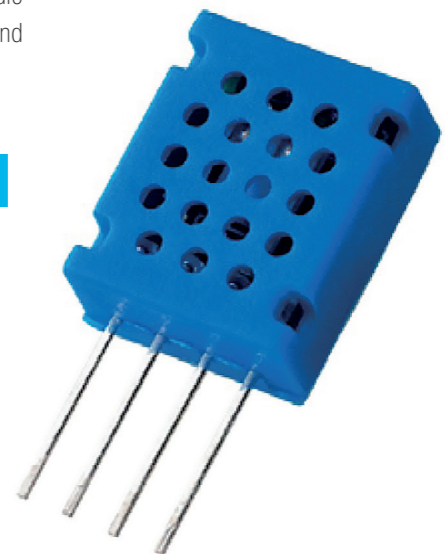
- White goods
- HVAC/R such as for heating, ventilation and air conditioning/ refrigeration
- Environmental sensing products
- IoT devices
- Industrial equipment

The BM25S2021-1 is a digital output resistive type temperature and humidity sensor that integrates a temperature sensor, a humidity sensor, a high-performance analog front end circuit and an A/D Converter. These hardware functions, when combined with appropriate algorithms, give the module the characteristics of high performance, low power consumption as well as a high level of functional integration and small size. All modules are factory calibrated with the calibrated data stored in the memory to ensure that the module can be used directly or replaced without requiring software calibration.

The BM25S2021-1 has two communication interfaces, an I2C bus and a one-wire bus. The module is suitable for use in small home appliances, HVAC/R products, environmental sensing products and IoT terminal devices.

FEATURES

- Accurate relative humidity sensor resolution: 0.1 % RH Accuracy: ± 3% RH
- Accurate temperature sensor resolution: 0.1 °C accuracy: ± 0.5 °C
- Temperature and humidity sensing range temperature: -40 °C ~ 80 °C, humidity: 10 % ~ 95 % RH
- Low current consumption operating current: < 2.5 mA@5V standby ccurrent: < 3µA
- Wide operating voltage: 2.7 V ~ 5.5 V
- Optional communication interfaces I2C One-wire
- Factory-calibrated



LIFUD LED DRIVERS

Endrich is offering Lifud LED drivers especially for indoor applications. Lifud is a chinese LED driver supplier which is offering a wide product range for constant current and constant voltage applications and several dimming functions, like 0-10V, DALI 2, Triac, flicker-free drivers are also available.

FEATURES

- Samples are available within 2 weeks
- Lead-time for standard-models 2 weeks
- To up 10 years warranty for some series
- ENEC certificates

APPLICATIONS

- Shoplights
- Downlights
- Tracklights



LED Driver 21 – 84 W, DALI 2.0, Push Dim, Flicker-Free (5 Years Warranty)

MODEL	MAX. OUTPUT POWER	INPUT VOLTAGE RANGE	OUTPUT VOLTAGE RANGE	OUTPUT CURRENT	EFFICIENCY	PF (TYPICAL)	DIMENSIONS LxWxH
LF-GSD020YE	21 W	220 – 240 V	25 – 42 V	250 – 500 mA	87 % (230 V AC)	0.90 (230 V AC)	245 x 30 x 21 mm
LF-GSD030YE	32 W			550 – 750 mA	87 % (230 V AC)		245 x 30 x 21 mm
LF-GSD040YE	44 W			800 – 1050 mA	88 % (230 V AC)		245 x 30 x 21 mm
LF-GSD060YE	63 W			1100 – 1500 mA	89 % (230 V AC)		285 x 30 x 21 mm
LF-GSD080YE	84 W			1550 – 2000 mA	88 % (230 V AC)		355 x 30 x 21 mm

LED Driver 21 – 63 W, DALI 2.0, PWM Dim, Resistor Dim, Flicker Free (7 Years Warranty)

MODEL	MAX. OUTPUT POWER	INPUT VOLTAGE RANGE	OUTPUT VOLTAGE RANGE	OUTPUT CURRENT	EFFICIENCY	PF (TYPICAL)	DIMENSIONS LxWxH
LF-GSD020YC	21 W	220 – 240 V	25 – 42 V	250 – 500 mA	88 % (230 V AC)	0.95 (230 V AC)	106.43 x 69.4 x 28.2 mm
LF-GSD040YC	44 W			550 – 1050 mA			106.43 x 69.4 x 28. mm
LF-GSD060YC	63 W			1100 – 1500 mA			126.23 x 81 x 31.2 mm

LIFUD LED DRIVERS



LED Driver 2 – 28 W Triac Dimmable, Flicker-Free (5 Years-Warranty)

MODEL	MAX. OUTPUT POWER	INPUT VOLTAGE RANGE	OUTPUT VOLTAGE RANGE	OUTPUT CURRENT	EFFICIENCY	PF (TYPICAL)	DIMENSIONS LxWxH
LF-GDE003YG*	2 – 4 W	220 – 240 V	3 – 11 V	150 mA, 200 mA, 250 mA, 300 mA, 350 mA	73 % (230 V AC)	0.90 (230 V AC)	52 x 33 x 21.5 mm

* (flicker type, output currents are fixed)



LED Driver 2 – 28 W Triac Dimmable, Flicker-Free (5 Years-Warranty)

MODEL	MAX. OUTPUT POWER	INPUT VOLTAGE RANGE	OUTPUT VOLTAGE RANGE	OUTPUT CURRENT	EFFICIENCY	PF (TYPICAL)	DIMENSIONS LxWxH
LF-GDE008YG(L)	7 – 8 W	220 – 240 V	12 – 22 V	300 mA, 350 mA	80 % (230 V AC)	0.90 (230 V AC)	97 x 46 x 31 mm
LF-GDE008YG(H)	5 – 8 W		25 – 40 V	135 mA, 150 mA, 200 mA	80 % (230 V AC)		
LF-GDE014YG	8 – 14 W		25 – 40 V	200 mA, 250 mA, 300 mA, 350 mA	81 % (230 V AC)	0.90 (230 V AC)	97 x 46 x 31 mm
LF-GDE020YG	16 – 22 W		25 – 40 V	400 mA, 450 mA, 500 mA, 550 mA	83 % (230 V AC)	0.90 (230 V AC)	117 x 46 x 31 mm
LF-GDE30YG	22 – 28 W		25 – 40 V	550 mA, 600 mA, 650 mA, 700 mA	83 % (230 V AC)	0.90 (230 V AC)	117 x 46 x 31 mm
					83 % (230 V AC)		

LED Driver 24 – 42 W 0-10 V/PWM Dimmable, Current Adjustable Through DIP Switch



MODEL	MAX. OUTPUT POWER	INPUT VOLTAGE RANGE	OUTPUT VOLTAGE RANGE	OUTPUT CURRENT	EFFICIENCY	PF (TYPICAL)	DIMENSIONS LxWxH
LF-GDE030YP	24 – 32 W	220 – 240 V	25 – 40 V	600 – 800 mA	86 % (230 V AC)	0.95 (230 V AC)	124.5 x 82.5 x 25.4 mm
LF-GDE040YP	34 – 42 W	220 – 240 V	25 – 40 V	850 – 1050 mA	86 % (230 V AC)	0.95 (230 V AC)	124.5 x 82.5 x 25.4 mm

ACCELERATE THE FUTURE WITH MPS POWER MODULES

**HAVE A
LOOK**

MPS Power Modules offer superior performance and size advantages when compared to other industry leading solution. The monolithic design allows for faster switching frequency, which leads to ultra-fast transient response and size reduction. Our high efficiency and advanced packaging make thermal design easy.

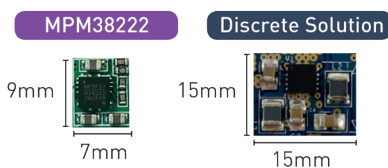
MPS power modules are ultra-efficient and easy-to-use. The modules integrate the maximum number of components, including the inductor, in a single package while still providing comprehensive flexibility for the designer to configure the device's attributes. This accelerates the design process and helps bring products to market faster. Our modules are used by the largest OEMs worldwide for Industrial, IoT, Automotive, Medical, Telecom, Robotics, and more.

FEATURES

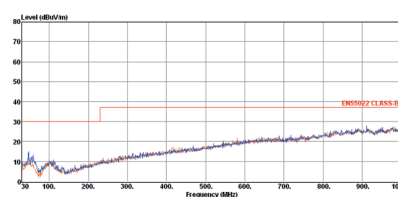
- Faster switching frequency
- Ultra-fast transient response
- Size reduction
- Advanced packaging
- Easy thermal design

APPLICATIONS

- Industrial
- IoT
- Automotive
- Medical
- Telecom
- Robotics



Minimal external components
Easy layout
Fast design cycle



**Meet EN55022
Class B EMI standard**

Power Modules

0.6A, 1A, 3A, 4A, 6A
Ideal for 3V to 5V Input

Scalable & Programmable
Scalable to 60A
Scalable to 100A

1A, 3A, 6A, 8A
Ideal for 5V to 12V Input

10A, 25A, 100A

Quad Output
2A, 2A, 3A, 3A
Ideal for 5V to 12V Input

Dual Output
3A, 3A
Up to 45V Input

MPS
MonolithicPower.com

The MPS Power Module portfolio comprises buck, boost, buck-boost, and multi-phase options. These include load voltage ranges up to 22V and output currents up to 800A in single, dual, and quad-output configurations.

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