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# endrich NEWS

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## SUBSIDIES - THE SINS OF LOBBYISM!



Wolfgang Endrich

An article in the magazine "Der Steuerzahler" issue 11/2023 reveals more than astonishing sins of our politics. Germany is by far the European subsidy champion in Europe with currently 54 billion euros!

This means that Germany exceeds the total subsidies of France, Italy and Spain combined. The subsidy report shows that grants (subsidies and tax concessions) totalling more than 122 billion euros was awarded in 2021. Followed at a considerable gap by France with 63 billion, Italy with just under 32 billion and Spain with around 20 billion, and this with

an official federal budget of 336.4 billion euros! Subsidies are state expenditure on industry and population groups that do not have to be repaid. Interest-free, non-degressive and unfortunately without an expiry date. This means that once they have been granted, they are also paid out in the following year. In the Covid19virus era, many sectors certainly received these subsidies gratefully, which was good and useful, but without a time limit, they are continued from year to year until doomsday. They have no degressive structure, which means that they do not reduce over time and, above all, the funding goals are difficult to measure and monitor. The current necessity is also not reviewed!

Subsidy policy guidelines were even formulated in 2015. Meanwhile the amount has doubled from 63 to 138 pieces. The same applies to the tax concessions granted in the meantime. As a result, we will have to shoulder an additional 48.7 billion for subsidies and 18.4 billion for tax concessions in the federal budget for 2024.

Instead of the debt brake defended by Federal Finance Minister Lindner, however, the Climate and Transformation Fund (KTF), a debt-financed special fund outside the federal budget that now has to shoulder even more subsidies, has been chosen as the central playground for this. In this way, the federal budget can officially be kept free of billions in

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subsidy burdens and the debt brake can be formally adhered to. In 2024, 88% is to be handled via the KTF and only 12% via the traditional federal budget. What industrial company can afford such accounting tricks? Respect for the more than 250 lobbyists who are antichambering the ministries on behalf of their clients every day. Subsidies or tax breaks have certainly been a tried and tested means during the Covid19 period to help depressed industries such as artists, the hospitality industry and other sectors to survive at all.

In 2023 and 2024, there will no longer be any need to pay these subsidies, as the cultural sector is thriving and many other industries have also been able to say goodbye to the burdens and closures of the Corona19virus period. And now more billions are to be dumped on top of this mountain of debt, for example for energy? What's more, numerous subsidies are not even climate-neutral - on the contrary, they are actually harmful. The Greens should be fuming!

The main problem with subsidies is that they have not yet been reduced degressively and no finite date has been set for the expiry of such subsidies. Subsidies embellish every balance sheet and are a free extra income without the pressure of having to make an effort to manage without subsidies, for example by rationalising in companies or encouraging some recipients of the citizen's allowance to look for work. Unfortunately, our welfare state tempts some of our fellow citizens to abuse these achievements, which are laudable in themselves.

If I know correctly, there are currently up to 51 different ways for families to apply for help from the state.

It is actually quite normal to be confused by this multitude of options. It would certainly be appropriate to put an end to this confusion and bundle support so that we know exactly what amounts are available to each household. Digitalisation would also help. The Federal Republic of Germany is a patchwork of thousands of regulations, amendments and changes, which is already leading to an inability to move. The consequences are citizens' disenchantment with the state and an urgent desire for change. We have imposed total immobility on ourselves. But who would trust our actual government to realise such an undertaking?

The majority of our population, as can be seen from the current election results, would like to see a dramatic simplification rather than new measures and regulations being imposed on them. It should come as no surprise that the man in the street no longer understands this confusion and wants an urgent end to it. This makes the call for a strong hand from marginalised groups in politics even more understandable.

The responsibility of civil servants for their decisions has also declined drastically, as the consultancy industry, which has to produce expensive expert opinions, is booming without equal. The expert opinions - usually also formulated by lobbyists - are intended to secure the government, members of parliament and civil servants in their decisions with as many expert opinions as possible and thus make them unassailable.

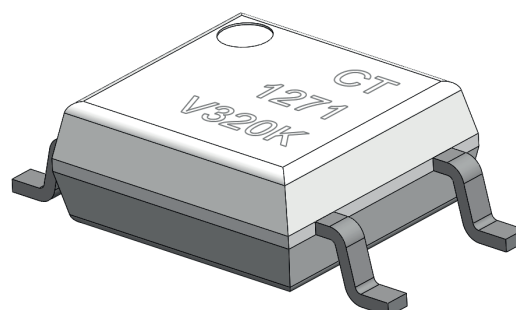
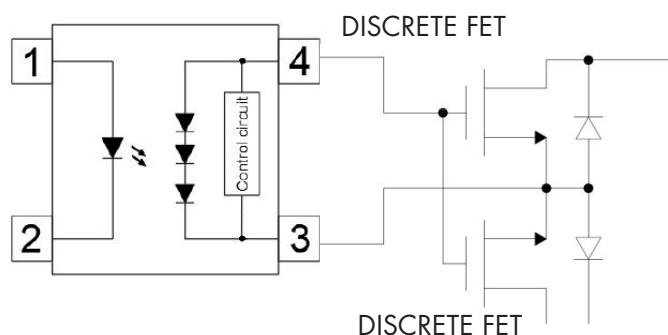
Yours, Wolfgang Endrich

(Source reference: Der Steuerzahler 11/2023)

# NEWS

## NEW CT MICRO PHOTOVOLTAIC GENERATOR (PVG) MOSFET DRIVER

The new photovoltaic generator (PVG) MOSFET driver CTM1271 offers a single-channel, optically isolated output that can be used for directly driving the gates of discrete power MOSFETs and/or IGBTs. The PVG MOSFET driver uses a monolithically integrated photovoltaic generator as output. The output is driven by radiation from a GaAlAs light emitting diode (LED) that is optically isolated from the photovoltaic generator. The PVG MOSFET driver is ideal for applications requiring high current and/or high voltage circuits with optical isolation between the low level driver circuit and high energy or high voltage load circuits. It can be used to drive the gates of power MOSFETs directly. The PVG MOSFET driver has a fast turn-off behaviour. Unlike conventional MOSFET or IGBT drivers, no voltage supply is required on the output side.



### APPLICATIONS

- Electro mechanical relay replacement
- Custom solid state relay
- Floating power supply
- Battery management systems
- Power supplies and power distribution
- Process control
- Programmable logic controllers
- Automatic Test equipment
- Industrial automation
- Robotics
- Instrumentation systems
- Thermostats
- Audio equipment
- General switching
- Control of displays and indicators

### FEATURES

- 1 Form A (single channel, normally open)
- No power supply needed on output side
- Integrated fast turn-off circuitry
- Compact solutions available in MFP package
- High output isolation of up to 3750V rms
- Operating temperature range - 40 °C to 100 °C

PART NUMBER	OPEN CIRCUIT VOLTAGE $V_{OC}$ (V)	SHORT CIRCUIT CURRENT $I_{SC}$ ( $\mu$ A)	$T_{ON}/T_{OFF}$ TYP. ( $\mu$ s)
CTM1271	7.8	6	50/30

## AVAS - ACOUSTIC VEHICLE ALERTING SYSTEM

An Acoustic Vehicle Alert System is an acoustic warning system for low-noise vehicles, especially for electric cars. This is an artificially generated noise that is like an internal combustion engine. It is emitted at low speeds to inform road users about the vehicle. Those systems need a huge variant of frequencies for generating different kind of motor tones like sporty motor sound or smooth driving regarding eco driver and so on. Pitch and frequency, timbre and roughness should indicate how fast the car is traveling, what size class it belongs to, and whether it is currently accelerating or decelerating. Beside the tone quality these systems must be very robust and stable.

In addition to the AVAS, our acoustics can also support sound bars to create dynamic driving acoustics.

In case of a customized development, specific NDA can be agreed in order to protect any side's intellectual property.



### FEATURES

- Full-range loudspeaker with a wide, flat, and balanced frequency response.
- Support microphone and speaker combined with voice system.
- Wide range of sizes available and customized sound box or plug-in connector on request.

Please refer to the following recommenden models as example:

MODEL	DIMENSION Dia. x Depth	HEIGHT	OPERATING VOLTAGE		POWER RATING WATTS		FO +/- 20% Hz	SPL db	FREQUENCY RANGE Hz	PROTE- CTION	TYP Out- looking
			MIN	MAX	NORMAL	MAX					
QAV-801A02	78.6 x 78.6	54.6	9	16	-	-	-	50-75	-	IP67	Boxed
PCXC40120LP7-R0 4W3.0-N12.5M-G1	40	12	-	-	3	4	650	80	650-6000	IP67	Round
PCXW50115-R0 8W1.0-N12.5M-F	50	12	-	-	1	2	550	94	550-4000	IP67	Round
PCXP31200CL160- 12V-3200-F (Buzzer)	31.5	19.8	1	15	-	-	3200	80	-	-	Boxed

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## MPM POWER MODULES

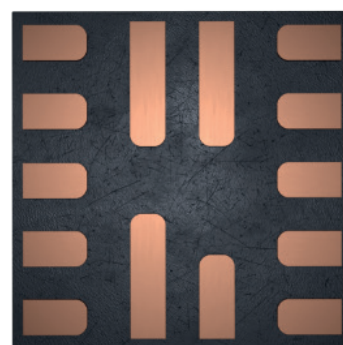
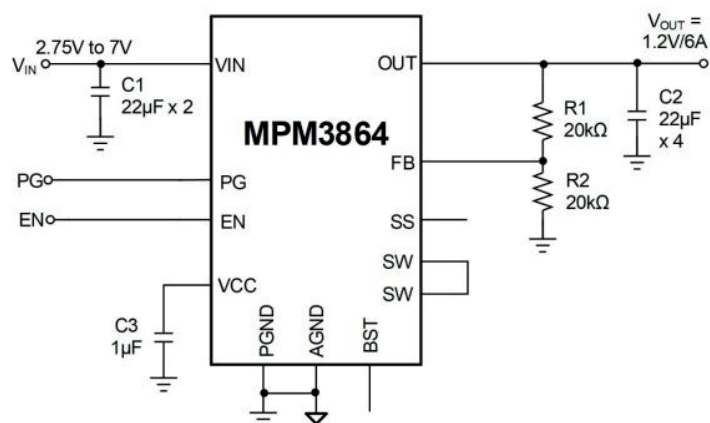
The manufacturer Monolithic Power System, also known as MPS for short, has a large number of power modules in the MPM family that are used for various applications in combination with FPGA applications and ARM 7 and higher.

Below are four MPM modules that can be operated from 2.75V to 6V voltage input and a constant output current of 1A, 2A, 3A and 6A. A smaller module that can be operated from 2.3V to 5.5V voltage input and a constant output current of 0.6A.

The MPM modules have the regulator and inductor in one housing and therefore save space on the circuit board due to their size and only one component has to be purchased. On the MPM38xx MPS Home Page you will find many application examples, design tools and reference designs.

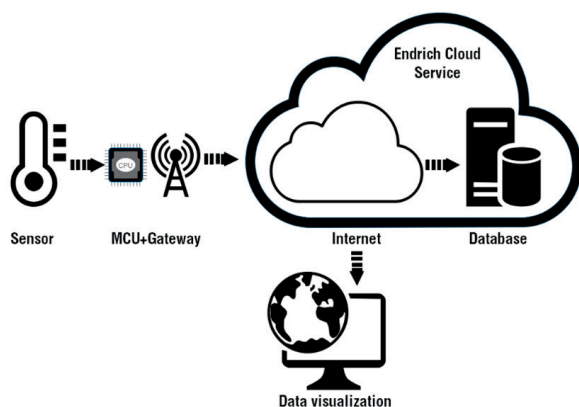
MPS also has the corresponding free evaluation boards where you can build or test your application relatively quickly. Link to the MPS, MPM Module Homepage. Search results for: 'MPM38' (monolithicpower.com).

MPM3804XX	QFN-10 (2mmx2mm) package, 0.6A, 5.5V, Synchronous Step-Down Regulator with Integrated Inductor and Output Discharge Function
MPM3814XX	Ultra-small ECLGA-14 (2.5mmx2.5mmx1.2mm) package, 2.75V to 6V, 1A, Ultra-Small Power Module with Ultra-Low Noise
MPM3824CXX	ultra-small ECLGA-14 (2.5mmx2.5mmx1.2mm) package. 2.75V to 6V, 2A, Ultra-Small Power Module with Ultra-Low Noise
MPM3834XX	ultra-small ECLGA-14 (2.5mmx2.5mmx1.2mm) package. 2.75V to 6V, 3A, Ultra-Small Power Module with Ultra-Low Noise Up to 92% Efficiency from 3.3V to 1.8V
MPM3864XX	space-saving ECLGA-19 (3mmx3mmx1.85mm) package. 2.75V to 7V, 6A, 1.2MHz, Synchronous Power Modul



## AD HOC LOCAL MESH NETWORK TECHNOLOGY WITH CELLULAR GATEWAY FOR SMART SENSOR SOLUTIONS

**THE E-IOT PLATFORM:** A major challenge industry faces today is digitalization of conventional processes, extending machinery with low power, feature rich microcontroller-based electronics to collect sensor readings, and forward data to a Cloud Database. Like this, it is possible to convert conventional devices to connected (SMART) devices, which report their operational and environmental parameters into Cloud Database making possible to support operational safety. Smart features support predictive maintenance, optimize energy consumption, and remote monitoring. The E-IOT eco-system helps to enter this industry by offering hardware and service solutions to convert conventional into smart devices. A mass of sensor readings needs to be organized into central database for future processing to meet the expectations of Industry 4.0., our ecosystem deals with this challenge. Our team has developed several hardware elements using various sensors and cellular communication (M2M/Narrow-Band IoT) technology to deliver sensor readings to the cloud. The beginning of the processing chain consists of sensors detecting and measuring different physical parameters, which are processed all the way to cloud database storage and visual data representation at the end. There is a sophisticated gateway in between, which collects the sensor readings, pre-processes these data and sends it through a communication channel to a cloud-based database service, where it can be displayed after processing, or used for any purpose appropriate for a given task. But what if the used low power wide area networking does not offer the right solution with its direct sensor to cloud concept? What if the battery service time is not sufficient due to the frequency of sending data required by the application?



**THE E-IOT PLATFORM COMBINED WITH LOW POWER AD-HOC LOCAL NETWORK:** In this case, we use a low power ad-hoc local area sensor mesh networking solution offered by NeoCortec with its Neo.Mesh. Huge number of smart sensors can be then connected with ultra-low power consumption into a local network, where a data concentrator gateway is taking care to deliver the data to the Cloud DB through the cellular network such as LTE-M or NB-IoT. Our engineering team has developed a modular sensor network infrastructure, offering either

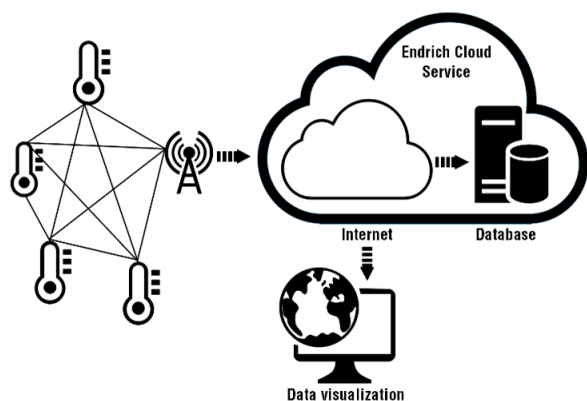
direct sensor to cloud, point to point communication or local low power sensor mesh network and multipoint to point communication to cloud using LPLAN to LPWAN gateway. With the help of the complete E-IoT ecosystem consisting of the above-mentioned smart sensor networks, the Cloud database and the visualization and data processing system, our company can offer a good solution to make conventional devices to connected, "SMART" devices to support predictive maintenance.

This solution at its core with Neo.Mesh, the Wireless Mesh Networking Protocol represents a paradigm shift from traditional network architectures. Unlike the conventional solution with a central Network Manager



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to control communication between nodes, this protocol employs autonomous intelligent nodes as its backbone. This feature empowers each node to act as an independent entity, facilitating direct communication between nodes without the need for a central authority. The result is a unified network that simply works, no matter how large or complex it grows. As more nodes join the network, they seamlessly link with existing nodes, forming an interconnected web of communication that can span



vast distances. This adaptability and scalability are particularly valuable as an extension of the E-IoT platform when applied in an area, which should be covered by hundreds or thousands of sensors. One of the protocol's most impressive features is its patented routing mechanism. This mechanism ensures that data travels seamlessly through the network, even in the face of obstacles in the RF (Radio Frequency) path or the movement of nodes within the network. Traditional networks often suffer from performance issues when nodes are blocked or dynamically change their positions. However, the Neo.Mesh Networking Protocol eliminates such concerns, guaranteeing reliable data transmission at all times. In practical terms, this means that the network's performance remains unaffected by environmental factors or dynamic changes within the network itself. Whether nodes are added, removed, or repositioned, the network remains robust and fully functional, ensuring uninterrupted connectivity for all devices and users. The protocol's ability to address weak spots in real-life networks is noteworthy. By

simply adding another node, assigned with the appropriate network ID, it seamlessly integrates with the existing network, reinforcing its coverage and performance.

At the heart of the Neo.Mesh technology lies a robust protocol stack with integrated security and reliability features. A key aspect of this security measure is the encryption of all wireless communication between nodes using AES128. By employing this encryption, the payload data and the network communication remain impervious to monitoring by any untrusted entity. The system is built for long-lasting performance. The power consumption is exceptionally low, enabling the batteries to last for several years. The Neo.Mesh network follows a time-synchronized protocol, wherein each node spends most of its time in a sleeping state. This architectural approach ensures a highly predictable power consumption pattern for every node in the network. As a result, all nodes consume nearly the same amount of energy, enabling each network node to operate efficiently for many years.

The E-IoT with its Neo-Mesh local sensor network extension operates at sub-Gigahertz frequency to overcome the problems of other protocols in harsh industrial environments. When comparing sub-GHz networking to WiFi and Bluetooth, using the same antennas and transmission power, it becomes evident that sub-GHz networking offers a longer range. The reason behind this extended range lies in the fact, that the lower radio frequency waves are not as easily absorbed by physical matter as the 2.4 GHz signals utilized in WiFi and Bluetooth.

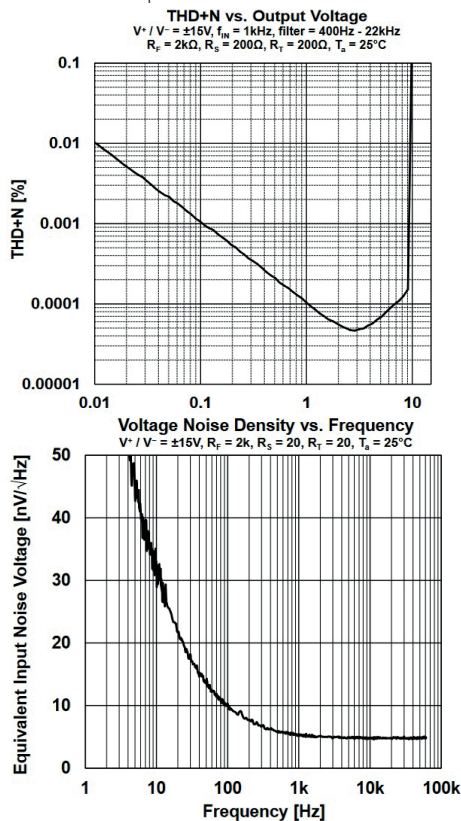
E-IoT Mesh : 868 / 915 MHz neo.mesh local sensor network with a cellular gateway

Should You need a large scale, local, sub-GHz smart sensor network, the solution to take in account is the E-IoT-MESH. Thanks to its topology, a high number of sensor nodes can be handled simultaneously. One of our gateway solutions is the neo-power meter sensor device, which also acts as a NB-IoT / LTE-M 2G gateway for the neo.mesh.

## NL8802 HIGH QUALITY SOUND DUAL OPERATIONAL AMPLIFIER

The NL8802 is a high quality sound dual audio operational amplifier that applies the high quality sound technology of "MUSES" to a more productive technology.

The NL8802 features wide operating voltage range, low noise, low distortion, wide bandwidth and high slew rate. It is the best for audio preamplifiers, active filters and line amplifiers.

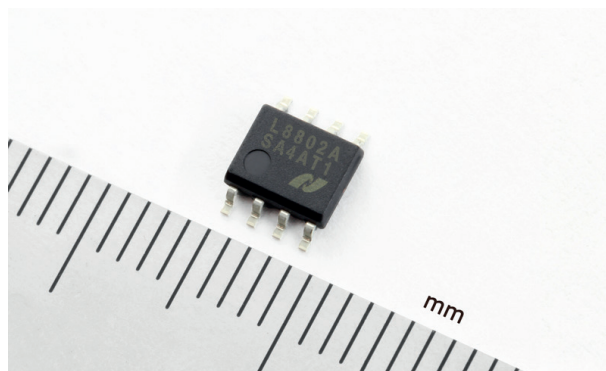


### APPLICATIONS

- Home Audio
- Professional Audio
- Car Audio
- Portable Audio

### FEATURES

- High Quality Sound
- Wide Operating Voltage Range  $\pm 3.0V$  to  $\pm 22V$
- Low Noise  $5.5nV/\sqrt{Hz}$  at  $f=1kHz$
- Low Distortion  $0.00005\%$  at  $f=1kHz$
- Wide Gain Bandwidth Product  $45MHz$
- High Slew Rate  $11V/\mu s$
- Quiescent Current  $8.0mA$  (Dual)
- Bipolar Input
- Bipolar Technology
- Package Outline EMP-8-AN



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