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IDEOLOGY OR PRAGMATISM?

Wolfgang Endrich

On Anne Will's television programme on the evening of 16 April, a group of experts had gathered and fiercely discussed the question of whether it made sense to shut down all nuclear power plants now or to allow them to continue running for safety's sake.

The fact is that the last three nuclear reactors went off the grid at midnight on 16 April. Was this sensible or should they have remained on the grid for safety reasons? After the great seaquake around Japan and the shutdown of the nuclear power plants in Fukushima, this is certainly understandable, but since the loss of gas supplies from Russia, it is an important reason to thoroughly reconsider the entire energy situation in Germany.

Nuclear power plants - yes or no - has always been an irritating topic for many in Germany, dividing Germany into two groups. The opponents of nuclear power discussed the great danger of these plants in the event of an accident, and the accidents in Chernobyl and in Fukushima had to give us food for thought. The issue of final storage has also not been resolved to this day.

On the other hand, German nuclear power plants have been the safest and best maintained power plants in the world - say the experts. Furthermore, several new nuclear power plants are being built around Germany, for example in France, Poland, Turkey, but also in Japan and the USA, which does not reduce the global threat of accidents on our globe. And Russia is playing "scoring goals" with the Zaporizhya power plant in Ukraine according to the motto "one missile will hit the target".

That is why the whole world, not only Germany, urgently needs an energy turnaround to counteract the dramatic climate changes. But MAKE - not just TALK!

The panel on Anne Will was not so sure whether we would succeed in the energy transition without risking disruptions in the energy supply. Unless we continue to accept lignite-fired power generation for many years to come. There are no other alternatives!

One has to ask oneself here whether ideology can really be allowed to triumph over prudence?

IDEOLOGY OR PRAGMATISM?

The fact is: in the future we will need more electricity for heat pumps, for e-cars, for the economy. And the hope of then getting nuclear power from France via the energy network? After all, many French nuclear power plants needed an urgent overhaul last year and could not have delivered at all. On the contrary, we delivered to France!

And solar plants and wind power stations? With the help of bureaucracy and citizens' objections, it takes up to six years. Thanks to the liquefied gas deliveries from abroad, we just managed to turn the corner, but mainly because we had a mild winter.

No one knows what the future will look like. But one thing is certain: In Germany, the safest nuclear power plants are being closed and nuclear power is being purchased from France and other countries - is this the solution? From the point of view of danger certainly not, and our Chancellor's wish that the energy turnaround should now be tackled very energetically by expanding solar energy plants and wind power plants could also get caught in the undergrowth of the regulation jungle.

And then?

We have already fallen victim to the wishful thinking of a secure energy supply!

The energy transition must come - there is no doubt about that because climate change does not stop at our wishes, but a power blackout - even if only for hours - would also be a disaster.

But keeping the lignite-fired power plants running is also a disaster! The panel of experts around Anne Will was also sure that there is a residual risk that we have now accepted, which could have been avoided through more pragmatism, at least for Germany. And after that, nevertheless, another residual risk still remains: namely, defective power plants abroad.

And the glaciers will continue to melt for the time being, as will the polar ice. We will also have to get used to dry rivers, lakes and parched fields. Water could then also become a scarce commodity, and not just electrical energy.

Only our children and grandchildren will know what the right path would have been.

Wolfgang Endrich

NEWS

CUSTOM SOLUTIONS

Customized designs for speaker assembly and enclosure

VECO (Taiwanese manufacturer represented by Endrich) was established in 1981 and has been focusing on the field of micro/small speakers for over 42 years. We invest in precision instruments, software, and computerized machinery, as well as high-quality manufacturing capabilities and automated production, to provide customers with overall professional planning and solutions. At VECO, we insist on innovation, quality, competitive pricing, and excellent service, which has earned us recognition in the global market and a prominent place in the acoustics industry.

To keep up with the continuous innovation of technology products, we are committed to understanding customer needs. Using the latest simulation software, such as COMSOL, FINE BOX, LOUDSOFT, LEEP, FEMM, and LMS+VI-BOX Audio Analyzer, we can accurately grasp customer requirements and quickly propose customized designs. Our factory has a comprehensive injection molding plant that can provide customers with product prototypes and manufacturing services, effectively helping customers reduceing time and costs, and meeting the ever-changing market demands.

What VECO can do – Overall Solution

1 to 2 weeks			2 to 3 weeks		
Customer Drawing or Idea	Computer simulation and design	Mock Up	Customer Approval	Tooling and Pilot Run	Mass Production

VECO offers customization services with mechanical and electrical modifications for our speakers if our standard products do not meet your specific audio needs. Please contact us for more information.

APPLICATIONS

- Notebook, Laptop, AIO computer, Monitor
- Car charger, E-call, Fitness, Security device
- Smart home, Medical Device
- Household appliances.

FEATURES

- Smaller with Higher Power and High Sensitivity
- Complex Cone of Carbon fabric, Aluminum, Plastic, Fabric, Sponge, and PU
- Ultra-thin, Planar, 2/3/5-mags, Dual-coils, Tracking coil
- High power, High sensitivity, Automation
- High Fidelity speakers
- Powerful speakers
- Multi-Channel speakers

VECO

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ENDRICH ON THE EMBEDDED WORLD 23 SHOW IN NUREMBERG

One of the most important exhibitions for engineers, who are actively involved in the electronics system design, is the Embedded World Show held in every year in Nuremberg, Germany. This show has just closed but left very good feelings in those who participated. Endrich this year had a booth dedicated to the own IoT developments and own system solutions. There are three area, where the inhouse R&D department have been deeply involved, described with three different slogans. We would like to make a small overview what has been showcased in Europe's one of the most important events by Endrich IoT Team.

"We make your device smart."

The first slogan may be self-explanatory, Endrich offers a number of IoT devices and technologies helping the conversion of customers' conventional devices to "Smart" devices, by connecting them to network, equipping them with sensors, embedding communication and making it possible to use artificial intelligence for supporting tasks such as predictive maintenance, offering data analysis for marketing purposes, or enabling remote surveillance.

This year Endrich showcased its "smart" refrigeration concept, equipping a conventional wine fridge with tailor made IoT device. Major parameters such as the temperature gradient, the air humidity , the lighting conditions in the fridge are measured and communicated in the Endrich Cloud, while also the door status is being watched. No more fridge door left open, no more accidental melting down can occur, and the door opening counter with the timestamp being sent with the change of door status offer reliable marketing data by analyzing the frequency of opening the fridge throughout the day.

This helps the most in case of industrial coolers used in shops, supermarkets or offices to determine the usage patterns. We also equipped the fridge with a CO_2 sensor to demonstrate how many people visited the demo by simply monitoring the air quality near the fridge.

Page 4

endrich

NEWS

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"We care about the environment"

The second slogan Endrich chose represents the activities we do on IoT field to support environmental protection. According to the World Health Organization (WHO), air pollution is the greatest environmental health risk in the European Union (EU). People in urban areas are particularly at risk. Particulate matter, nitrogen oxide and ground-level ozone are the air pollutants that cause most of these early deaths. To detect the problem can only be done by constant monitoring of the air quality in order to initiate appropriate protective measures.

Therefore, it was our goal to develop a self-powered, 7/24 active and independent measuring and communication station, which, due to its numerous on-board sensors, and flexible wireless extensions could offer solution on a wide variety of application, locations and measuring area. With the help of the electronics, encapsulated in a small housing, these goals can be achieved quickly and efficiently by cityBox, our environmental monitoring station.

Powerful solar cells combined with rechargeable accumulator station ensure the continuous energy supply and is thus energy self-sufficiency. The required sensors are either accommodated in the device itself or placed in different locations nearby and the data obtained can be sent wirelessly to the sensor device. The measurements are automatically forwarded to the corresponding Cloud database for data analysis via Narrow Band / LTE-M communication on the LTE 4 G or as a fallback the 2 G GSM network.

What cityBox does, can be described with a few key sentences:

- Detects air quality and the most important chemical and physical measures of it.

- Detects its own operational parameters, thus being able to report expected service black spots, helps for predictive maintenance and supports its own remote surveillance, including GNSS positioning itself.
- Powers itself by reusable green energy, using solar cells and long-life lithium accumulator station.
- Communicates its sensors' data to the related Cloud database (Endrich Cloud) using narrow band communication.
- Acts as a Gateway for the optional external 868 MHz MESH wireless smart sensor network dedicated to certain tasks. It collects the data of the standalone wireless sensors and forwards their data to the Cloud on Narrow Band / LTE-M or 2 G network.

"We make your SBC IoT ready"

With the third slogan Endrich would like to send a message to external popular computer societies such as the Arduino or the Raspberry Pi family, that although we have our own developed alternative single board computer (SBC) concept, we would also like to support them with IoT extensions. The basic Arduino and RPI devices do not have built-in sensors and communication modems, what we offer are special shields developed for these SBCs with detection and GSM communication features. Adding these to the feature connectors of the MCU boards, users may access our E-IOT infrastructure and deliver the sensors' data to the E-Cloud. We offer also software support to fulfil these tasks and of course do not limit the engineers only to Endrich's solutions but also support platforms such as Azure and AWS.

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MAXIMUM BRIGHTNESS MINIMUM SIZE BE CREATIVE

CSP (Chip Scale Package)

### What is the difference on CSP package?

CSP = Chip Scale Package
Definition: Traditionally a CSP LED is defined as a LED package with a size equivalent to a LED chip, or no larger than 20%. The package product also has comprehensive component features

1. No welding wire, less defective rate.
2. Reduce heat transfer path, Reduce thermal resistance.

FEATURES

- Direct attach-Flip Chip type
- Wide viewing angle
- Smaller board size

SMD

CSP
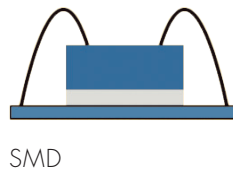
CSP (Chip scale package) roadmap

P/N	CSP0603	CSP0603	CSP0603	CSP0504	CSP0403	CSP0804	CSP0603
Features	5-sided emitter	4-sided emitter	4-sided emitter (Black on the top)	1-sided emitter	5-sided emitter (PKG Level)	5-sided emitter (RGB Chip)	5-sided emitter (PC Amber)
Appearance							
Structure							
Dimension (mm)	0.6 x 0.3	0.6 x 0.3	0.6 x 0.3	0.5 x 0.4	0.4 x 0.3	0.8 x 0.4	0.6 x 0.3
Thickness (mm)	0.15	0.2	0.15	0.15	0.15	0.15	0.18
Application	Keyboard	Keyboard funtion key	Keyboard	VR headset Thermos bottle	Keyboard	Keyboard	Keyboard funtion key
Brightness @5mA	350 mcd	200 mcd	73 mcd	300 mcd	250 mcd	R:144 mcd G:448 mcd B:80 mcd	TBD
Light distribution							
Material number	MP	MP	Developing	MP	Developing	MP	Developing

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MAXIMUM BRIGHTNESS MINIMUM SIZE
BE CREATIVE

CSP (Chip Scale Package)

Medical Appliance

Gastric ulcer

Capsule endoscopy

16-219A Series
1.0*0.5*0.2 mm

CSP 0603 W
0.6*0.3*0.15mm

CSP0603
0.6*0.3*0.15 mm
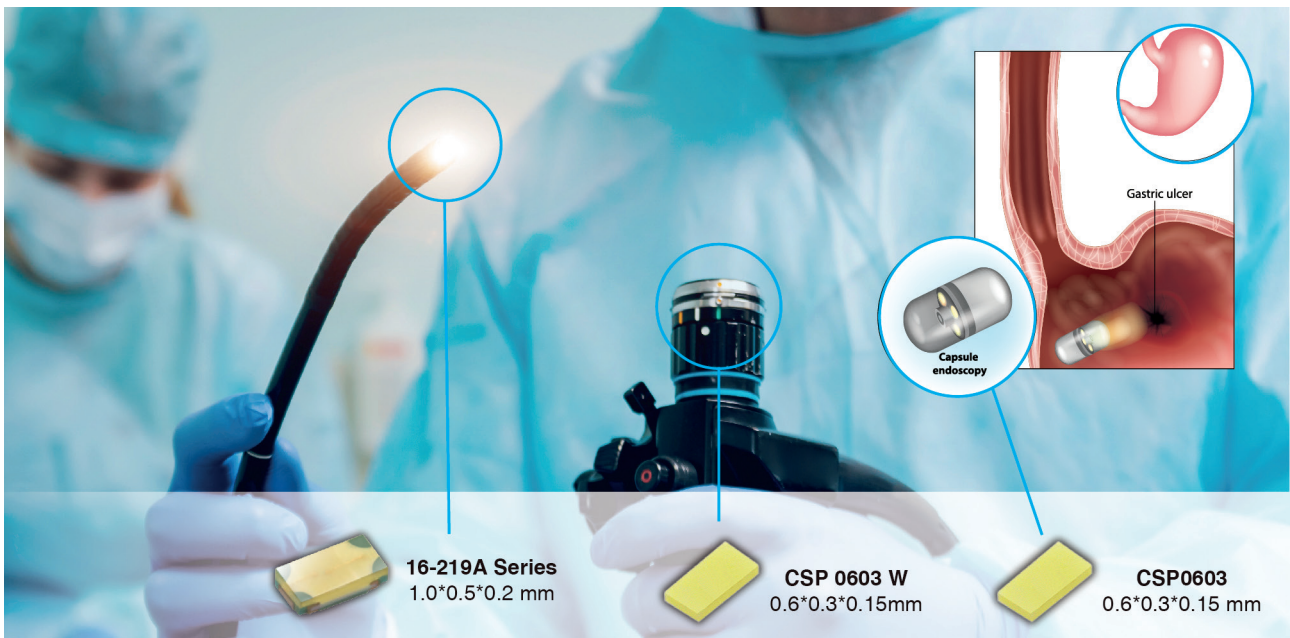
Application for Keyboard

RGB

CSP0603 (0.15T)
(5-sides emitter)

CSP0603 (0.2T)
(4-sides emitter)

CSP0603 (0.15T)
(4-sides emitter)

CSP0403 (0.15T)
(5-sides emitter)

CSP0804 (0.15T)
(5-sides emitter)
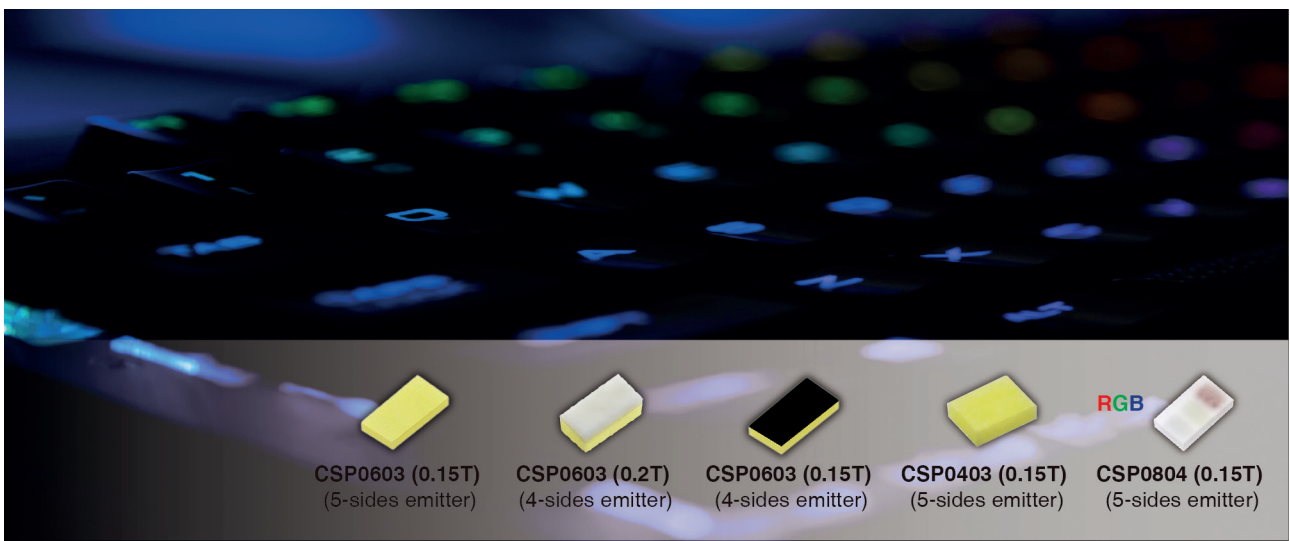
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COMPACT "ALLROUND" LOUDSPEAKER MODELS

Acoustic component manufacturer Vansonic Electronics Corporation ("VECO") based in Taiwan introduces two ultracompact wideband loudspeaker models, **P25CCG04-11** and **P28CCG04-11** with enhanced performance and a remarkably flat wideband frequency reproduction curve, which makes them ideal for "all purpose" use for such kind of application where the available space in device is limited and therefore designers will prefer reasonably small sizes to generate high quality sound output.

The possible use is not only limited to playing melodies, jingles and music – also human voice as well as single tones for confirmation and signalling can be well reproduced.

Both speaker models are of round shape, with an outer diameter of:

- Dia. 25 mm at a height of 9.4 mm (P25CCG04-11), respectively
- Dia. 28 mm at a height of 9.2 mm (P28CCG04-11)

The electrical input power needed to drive these speakers in a most efficient way is 2 W for P25CCG04-11 and 3 W for P28CCG04-11. (For details, please consult data sheets.) Different impedance values as well as modifications to reach certain IP rating level are subject to separate request.

P25CCG04-11 – 1 W / 0.5 M ON BAFFLE
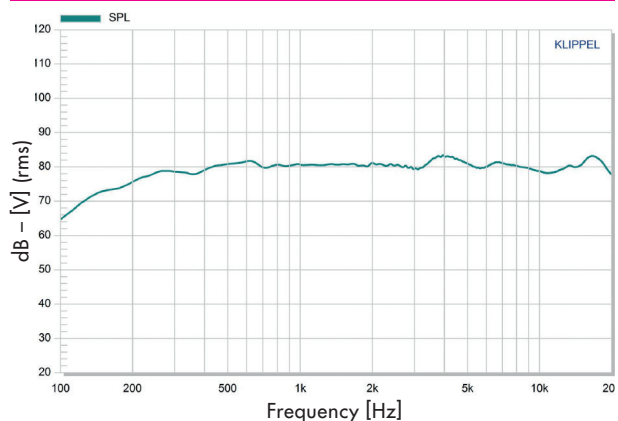
P28CCG04-11 – 1 W / 0.5 M ON BAFFLE
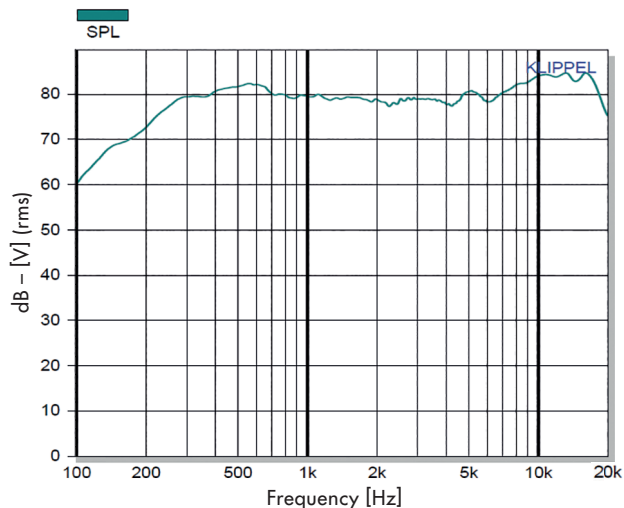
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