

## OKdo ROCK Webinar Transcript - English

0:01

Hello, and thank you for joining this OKdo ROCK Webinar. My name is Janice Fenton from technical

0:08

marketing agency Publitek, and I will be your host. Before we start, let's make sure that

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everyone can hear us. If you're having problems, please check your sound setup and check that the speakers or headphones of

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your computer or mobile device are turned on and your volume is turned up. If there's still no sound, please try

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Internet connection, disconnecting VPN, and closing any programs or browser sessions running in

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the background. During the course of the webinar, you'll have the opportunity to submit questions

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using the Q&A facility at the bottom of your screen. We'll collect all of the questions and try to answer them during

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the Q&A session at the end of the webinar. This webinar is being recorded and will

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be available on demand. If you're watching on-demand, you will be able to submit your questions by emailing [sales@okdo.com](mailto:sales@okdo.com).

1:06

So now

let me introduce

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today's speakers. First, we have Nicki Young, President of OKdo, who will kick

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off today's webinar with an introduction on who OKdo are and more on their

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offering. Next up, Richard Curtin, Chief Technology Officer and co-founder of OKdo, who will

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talk through flagship models and technical differentiation. And lastly, Sander Arts, Chief Marketing

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Officer at OKdo, who will walk us through ROCK industry applications and

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what partnership with OKdo means for you. Nicki, over to you.

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Thank you, Janice, and welcome everybody to the first OKdo webinar of 2023. Let

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me first say Happy New Year to everybody, and I hope you've had a very

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enjoyable festive season. We're very grateful for you to take time

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in your very busy first week back for many of us to join OKdo in this session

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and hear about how we can make 2023 incredibly special together.

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Before I do that, let me uh just reiterate that today myself, Richard and

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Sander will be sharing some of our story with you, but on from here we do have

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a global team, in fact, some of our presenters today are on the other side of the world, on the west coast of the US,

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and we have a relevant contact for each person irrespective of where you're

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joining us from today. What I hope to do is just talk you through a little bit as Janice said

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about who okay do you are bring to life some of our flagship lines and then talk

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to you about how you can get involved in making amazing happen together.

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So let's get into the detail. Who are we?

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OKdo is a newly established, just over three years old, organisation

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that is part of the wider RS Group, and we have a team of incredibly

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talented customer-centric people who range across a number of organisations

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that you'll be very familiar with in this space on hand to help. We're making

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significant investments in our inventory to provide available high-spec products

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to partner with you to achieve amazing things. We have over 1 million customers in our

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community across Design Spark and other platforms that are actively involved in helping us build something really

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special together as we move forwards. And we have a broad choice of products

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with a direct franchise on many of these products where we're building and co-innovating the future. Some of those

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brands I'll touch on a bit later on. What that means for us is we're a very

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dynamic business but we're backed by a global enterprise that allows us to find

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the benefits of being customer-centric and dynamic whilst having the investment

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and support to make a real difference from a FTSE 100 company that has over 80

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years of heritage, is shipping over 60 000 products daily and has innovation

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right at the heart of their operations. And we're really wanting to bring that

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to life today and drive that agenda forwards together.

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So, why do we exist? Well, let us share with you what we see taking place in the

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digital transformation arena. What we see is the world is being

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redesigned, and many organisations are designing a smarter future.

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And the reason for this is largely driven by four sizable shifts that are

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moving at an unprecedented pace. There is a shifting economic power

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organisations and countries and regions wanting to take greater ownership and

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foothold in the future of industry, which is largely digital and technology

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orientated. We're seeing climate change sustainability and scarcity becoming

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more pronounced. We're seeing technological breakthroughs and innovation taking place faster than

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we've ever seen before. And in many respects, Covid has levelled the playing

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field. And we're also seeing investments of a significant order in rapid urbanisation,

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starting with electric cars but moving to smart buildings and smart

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world. What does this mean for us? Well, this means that we want to play a pivotal  
6:24 role with you in designing a smarter world, and we think that takes place in three  
6:31 core forms. One is around building intelligence, so intelligent products intelligence into  
6:38 your own applications, whether that's on smart agriculture or into your smart  
6:44 factories and everything in between to build greater sustainability of asset  
6:50 utilisation. We want to drive improved operations through automation and intelligence of  
6:57 these devices where electronics meet mechanical. We have the convergence  
7:04 driving mechatronics. And for us, that's really exciting and a  
7:10 pronounced aspect for us all to take notes of. And then lastly and very  
7:16 importantly, we're seeing life-changing innovations, the accessibility of technology, the  
7:23 availability and the  
pricing allows great entrepreneurial organisations and individuals to take  
7:29 hold of opportunities that help innovate a greater future for all of us.  
7:36 So, what does this mean in terms of OKdo? Well, we've deliberately positioned ourselves over  
the last number of years  
7:43 to bring together an offering that's really about an ecosystem involving partners, involving  
services, and  
7:51 involving products that allow us to work in conjunction  
7:56 with makers, entrepreneurs, large-scale organisations  
8:02 to bring this to life and make it available. And what we offer is Design Services, so  
8:09 we can make the board your way for your business without the constraints you've typically  
8:15 seen or experienced in the past. We can manufacture it, scale with flexibility  
8:21 with direct franchises to make that supply chain more reliable. We can  
8:27 distribute it globally with reliability and accessibility as we've mentioned to

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over 32 countries, over 60 000 parcels a day. We can engage with a broad audience with

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engineers, like-minded people who are building and redesigning the future. And we can scale

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your operations and our operations to have a meaningful impact across the

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world. And we can bring that together in a combined package to help deliver

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your needs together with our capabilities to make a real difference.

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But we're not doing this alone; we're standing on the shoulders of

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giants, as many would say, and representing some of the world's most dynamic and incredible technology brands.

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And something that we've been very proud of and worked very hard to build

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out this line card to enable us to have a suite of offerings

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that allow you whether you're making something new or providing distribution capabilities and services to your

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customers bring that suite to life in the market.

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So, hopefully, I'll share with you a little bit about who OKdo are and why we exist.

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I'd like to hand over to Richard to really bring this to life with some of our flagship lines.

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Richard. Thanks, Nicki, and Happy New Year, everybody.

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Really great to be spending time with you in our first week back in the New Year. So I think what Nicki's

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done now has given us a great orientation of OK do and what we

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offer as a global technology business. But what I want to do today is just

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spend a few minutes talking about the partnership and innovation that we're

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driving with Radxa, Rockchip and Infineon. But I also just want to expand

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on what Nicki shared and give you a sense of the broader offer capabilities

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that we have as OKdo.

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So let me start with, you know, what this webinar is all about.

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Last year we started an incredible partnership with Radxa, the team behind the ROCK

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platform. We've been working with them over the

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last 12 months now to do a couple of things. Firstly, make

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sure that we're bringing the right level elevation to market for our customers

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and that we're solving problems that our customers are seeing.

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But also to make sure that we globalise the offer of ROCK so that we can make it

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available in all of the markets that we service around the world.

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What we've been able to do with ROCK is a couple of things. First of all, we've

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been able to expand the platform right through from the lower end, where we've

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got the ROCK 3 Model A released now, through to the next generation

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technology that's available with the ROCK 5. And just to give you a flavour of

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what we want to do with ROCK, and what our ambition we started down this

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path is to make sure that we can provide platforms that allow our design

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customers, wherever they are on their design journey, to be able to go from a

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low-cost single board computer platform that has great capability, that is

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relevant to the application that these boards have been used for, but also allow customers to move on to a

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module strategy where that is more relevant. But more importantly, make sure that our

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industrial customers can then also access publicly available technology to

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accelerate their strategies and leverage OKdo support where they can.

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And we're seeing huge success there with the range of ROCK. And just to

12:59 give you a couple of highlights, we launched a ROCK 5 as a next-generation technology  
13:05 at Electronica at the back end of last year, and it's been very warmly received. The  
13:13 next-generation technology there is allowing for a different level of  
13:18 application development, particularly around digital signage, leveraging the AK capability but  
moreover just the  
13:26 exceptional performance of that RK3588 chip, the ARM Cortex A76 that is  
13:34 just so powerful and is opening up a whole new spectrum of applications which  
13:40 we're going to talk about a little bit later on in this presentation. We also have our flagship core  
range  
13:47 around the ROCK 4 SE and the ROCK 4C+, two platforms based on the  
13:53 RK3399, a chip that's been around for quite a while, so it's got a great  
13:59 already industrial install base, it's got a great growing base of support that  
14:05 OKdo are accelerating within the RS Group and gives customers options, in stock  
14:12 options, to move forward, whether they are a developer, a designer in a professional  
organisation, or whether  
14:20 they're a maker and a hobbyist wanting to continue their journey and learning journey either at  
home,  
14:26 clubs, or schools.  
14:40 So just talking about the broader offer that we have, I just wanted to bring to  
14:45 life the fact that we have strategic partnerships with a couple of  
14:52 really significant partners for us. And I just want to bring a couple of those to life as well just to  
show you  
14:58 an example of what Nicki shared earlier around the capabilities and the scale  
15:03 that we have as OKdo. The first one I want to just bring to life is that we have a relationship with  
NVIDIA where we go

15:10 beyond just becoming a distributor of their products. And at the end of last year  
15:16 again, and just off the back of Electronica in Munich, we identified a gap in the market for  
15:23 an OKdo alternative or addition to  
15:29 the Jetson Nano Development kit family, so we designed what we call the OKdo Nano C100.  
15:36 So this follows a very friendly form factor that the community, developer  
15:42 community, are used to working with the Jetson Nano, but we replaced the  
15:47 module from the Jetson Nano, which is the development module, into production module and  
therefore this platform  
15:56 allows our customers to scale production-ready AI applications and that ball  
16:03 also comes with a level of customization. We also have a very strategic  
16:10 partnership with Arduino. An example here is that we work with Arduino, as we  
16:15 know, in their Pro range, and many of you may know the Portenta range of products. We work  
with Arduino with  
16:23 our industrial customers to make sure that where it's applicable, we also make  
16:28 these platforms available to our customers as well. Finally, you know as  
16:34 OKdo we are incredibly passionate about inspiring the next generation and  
16:39 we have an incredibly strategic relationship with micro:bit, the device that's used by educators,  
and schools around  
16:47 the world, and we provide that platform globally through our reseller partners  
16:53 and to our schools and strategic STEM partners.  
17:03 And then finally, I just want to give one more example that you know today we're talking about  
ROCK and SBC range  
17:12 and that broad offer that we take to Market. But we go much further than  
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that. And one example that I want to share with you is the work that we do with LAIIER. So LAIIER is a very innovative

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startup and that have a surface to cloud technology that is formulated to support

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applications looking to sense water leak detection, and we are providing our

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capabilities not just to take LAIIER to market, but also to actually help them with

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their manufacturing design optimization and ultimately then the customization

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customers in this space will need as they take less technology into their

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businesses and into their application moving forward. So I hope that these slides just give

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you a sense of that OKdo is absolutely passionate about solving

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customer problems, ensuring that we have products available with a level of

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flexibility to support you, our customers. And then we are growing that capability

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on a daily, weekly, and monthly basis. So with that, I'd like to hand over to

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Sander, who is going to walk you through more examples of how the products that

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we have from our ROCK range and further are helping our customers today.

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Thank you, Richard, and welcome everybody and Happy New Year.

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This is like a typical slide that you'll see from a whole bunch of companies and I'd like to narrate it a

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little bit differently. I've been around for a long time, as you can see, I only have 50 percent of my hair left.

18:56

You know, technology only comes to life when it's touched by people, and Nicki has mentioned that there is a lot

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of disruption and the digital transformation happening. It's driven by a lot of people on this call. I went

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through the participant list, and there's many many super interesting people and companies here.

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And it's people that think out of the box and want to disrupt. And the war chest of technology  
19:21  
that OKdo has, as just explained by Richard,  
19:26  
gives a lot of opportunity to build a variety of things, and if you go on the OKdo website, you will  
see sections  
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and content centred around these applications.  
19:38  
There's a lot happening in smart agriculture, a lot of crop monitoring and smart  
19:44  
irrigation, a lot of data being gathered. It reminded me of years ago on the  
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streets of Shenzhen, the first drones being built on Arduinos.  
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There's a lot of drone influx into the agriculture spaces we speak as well  
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a lot of interesting developments; vending machines, another one.  
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Richard mentioned the capability of the ROCK board; there's a lot of digital signage, and  
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an improvement of customer experience and these vending machines happening based on the  
back end of our technology.  
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And as I mentioned, our website has a lot of these application areas, which we  
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believe are interesting. But as I said, technology will only come to life when it's touched by  
people,  
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and judging from the people on this call, there is  
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probably a ton of new application areas that we can go create together.  
20:48  
And this brings me to the next slide, which is what we have been doing, but so because  
sometimes theory is just theory,  
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so we're working, and I can't tell you which companies, but we're working with a variety of large  
large OEMs on  
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a variety of topics, and I've singled out three of them on this slide,  
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where we have a deep customer relationship and where we customize on the back  
21:17  
end of the war chest of technology that we have gathered.

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And that's all with the people, right, if people touch the technology together

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with the customer, magic happens, as Nicki has already indicated.

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So that brings me to the next, so if you partner with us, and I have seen makers, inventors, CEOs, engineers and

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distributors sign up for this webinar, a lot of magic can happen. And I want

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to sort of capture that we captured that magic in a very brief video, and then

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I'll get back to you. [Music]

22:08

[Music]

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foreign

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[Music] thank you [Music]

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[Music]

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foreign [Music]

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[Music]

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[Music]

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foreign [Music]

24:08

The key message is, we'll give you the air cover that you need if

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you're a distributor. We have a very dedicated team of marketers that will help you go to market and create content

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with you. If you're a customer, larger or small, we're always willing to listen to you and help customize on the back end

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of powerful, flexible, customizable and industry-grade, very importantly,

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technology. That brings you to the next slide on how to get along with us.

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There are a few things, so first of all, we have a big news item that I'm

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pre-announcing. So, actually, next week, there's a press release hitting the wire about a very  
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very large design contest that we are kicking off with Wevolver,  
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Design Spark, RS Components and OKdo, with a grand prize of \$50,000 for  
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people that come to us with a great idea on how they want to disrupt the world and how they  
want to be  
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awesome, as Nicki has described. So that's a great way to get going. We will  
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provide you even with the hardware needed to get going in that competition, and we're very  
much looking  
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forward to getting a bunch of ideas from people, startups, entrepreneurs, but also large  
companies, and we will  
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continue to market all of those things as that journey happens.  
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There's a lot of global marketing opportunity possible, and I've done it  
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before in previous lives, where you essentially turn this organisation into a media company that  
will help other  
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people go to market. So, that's a promise, and we already have a large amount of people  
engaged  
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with our business with a lot of people engaged with the company on Design Spark, discussing a  
variety of topics  
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related to hardware, open source hardware, and an industry-grade hardware.  
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And then while we're doing all of those things, we're stitching together a very interesting group  
of ecosystem partners,  
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maybe on a personal note, I decided to join this team because this is the one and only  
organisation in the  
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world that has these ingredients at their fingertips to help customers. There's others that have  
other pieces,  
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but OKdo, together with all the things Nicki has described, has the full comprehensive offering.  
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That brings me to the closing of this webinar.

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We appreciate you, right, whether you are a maker, an educator, a CEO, an inventor,

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or somebody that is just super interested in technology and, of course, a distributor. We

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Appreciate You tuning in to this webinar, and as a token of our appreciation, we will send you a free ROCK 4C+

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Starter Kit, and we will communicate to you how you get your hands on this piece

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of hardware. It's not only a token of our appreciation, but it's also a token of the fact that we have a

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lot of inventory for the market, and we're very much open for business.

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With that, I'd like to hand it back to Janice. Thank you, Sander.

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Now, let's move on to questions. Reminder to attendees, if you submit your questions via the Q&A facility at

27:39

the bottom of your screen please.

27:46

Okay, first question to the panel. What is the

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availability of the board? Many vendors have had lots of problems getting supply.

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Why not you?

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Well, let me start on the context of what we've been

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putting in place over the last 12-18 months, and then Richard, maybe you can

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elaborate on why this is different in terms of the components on the board

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itself. So, as Richard alluded to in this section,

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this isn't something we've just sort of been hacking around with, excuse

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the pun, for the last couple of months, we've been planning our movement in the

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market for the last 18 months and building direct relationships with some

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of those most significant brands that we refer to. So the likes of Rockchip or

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Infineon or a number of others that I could mention here. We've had direct conversations with them

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and built up a great relationship, and they understand and support the journey

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that we're on to build a smarter world. And as a result of that, we've had direct

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franchise agreements with them, which has enabled us to have greater accessibility and availability of their highly

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contended inventory at a competitive price that allows us to pass that on the right position for everybody here on

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this call. But that's just about the components. Rich, do you want to just elaborate on

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the technicalities of the design services and how that enables us to change based on the availability should

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we need to? Yeah, yeah, absolutely. Yes, it's a great question as well,

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because I think everybody is incredibly aware and sensitive of supply

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issues that we've all experienced over the last couple of years. So as Nicki said, you know, there's one

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element of our ROCK strategy, which has been work in progress, and that is making

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sure that we have the best offer on the shelf of platforms that will accelerate

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and support our customers both industrial professional and our amazing

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community that we have. But I think the other part of our

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journey on ROCK is that yes, it's available, and yes, we've managed to get a good

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inventory position, but we're now leveraging that inventory position with

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many of our customers who require something different to the off-the-shelf

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solution. And that's where that customisation to our design service

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strategy is really coming into play. So we're now working with customers around

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the world, who have a level of volume by the way, this isn't necessarily for the guys that you know are prototyping

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initially on those 5, 10, 20 bolts, but for customers who now have an application

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that they're scaling. We are supporting them both on the prototyping but also on the

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customisation of the boards, and within reason, you know, the I/O, the form factor,

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changes that are required to enable our customers to move forward we're now

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working on. And having inventory on the shelf not just with the finished products, but of the work that we've been

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doing with Infineon around our connectivity, the work that we've been with Micron on our memory, the work that

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we've been doing with our incredible Interkonekt partners to make sure that we can now operate in a way with our

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customers that we've never done before. And it's an incredibly exciting part of the package of having stock

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on the shelf that can be customised as required, and by the way, we globalised

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our manufacturing through our ROCK strategy, so wherever you are in the world, we have a solution and a near

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sharing capability to support you on your journey, which for our customers we

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know is incredibly important. Janice, I'll hand it back to you for any other questions. Yes. Thank you.

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Someone's asking about the customer's customisation, about how easy it is to change memory

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types and connectivity, and what type of commitments would they need to make.

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Yeah, it's a great question. I'll start, and then maybe I'll pass to Nils to build if I miss

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everything here. But I think, first of all, customisation is a process that we go

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on as a relationship with our customers, so obviously there are some elements of customization that are much easier than

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others. Actually, you know, I/O, ethernet, USBs positioning layout is all possible.

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Actually, the memory is probably one of the customisation elements that is a little bit more complex and anything to

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do with that connectivity, but that said depending on the volumes. And I think the person who asked the question was

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interested, that we're typically looking for volumes of five to ten thousand units annually for us to get the project

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off the ground, and we typically try to, wherever possible, look at the range

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of products we have off the shelf. I talked earlier about the fact that we have the ROCK 3 Model A, we have the ROCK 3

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Model C, we have our flagship ROCK 4, we have the next generation ROCK 5

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that take a customer on a journey of performance and capability, and that's obviously our step one. We also have the

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compute module strategy where this is another step on that journey. But if we

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still then need a customisation approach, then we offer that. But the

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volume of five to ten thousand, it does vary in degree of complexity depending on

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that customer requirement. But I think what's a really positive message is that we are engaging on all of those

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conversations. So if you're a customer on this call and you think that you do have a requirement for customisation and your

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volumes do fall in those levels, then we would love to speak with you, and

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understand whether we can help. But I will just pass it to Nils. Nils, is there anything that you would build on what

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I've shared or is that a fair summary of our position today? No, I

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think you covered it quite well, Richard. What I would build on is that you know, from the get-go of most of these models that

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we presented we offered, we do offer a wide range of memory configurations, something that we, you know, haven't maybe

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seen in the past on all these kind of boards. So you mentioned the ROCK 3A as an example,  
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so we will be offering that in it 2, 4 and 8 GB memory configurations from the get-go. So I do  
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believe that for customers looking for different memory sizes, we'll try to,  
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you know, have something that appeals to everyone, but beyond that, you know, the capability  
of the chipset and the

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volumes that you mentioned, Richard, will be a deciding factor. But memory,  
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I think if the chipset supports it, then it should be a straightforward operation. Thank you.

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Thanks, Nils. Janice, I'll hand it back to you. Okay, thank you. Another question, any industrial  
breakout

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boards, have they been developed for RS485 and also, would your  
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CM3 module work on wave shares compute module boards, for example?

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That's a really good question. Maybe on that one again, I'll come

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to Nils of Phil Smith from our Product and Technology team to see if they can

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build on that question. Shall we start again with Nils? Shall we come to you first?

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Yeah, I'm struggling a bit with the audio, so I couldn't catch the full question. Can you repeat it,  
please?

36:24

Yeah, so any industrial breakout boards, have they been developed for RS485? Additionally,  
would the CM3 module

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work on wave shares compute module boards?

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Yeah, so I think when you look at the uh the wave share compatibility,

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it's going to be dependent on how you run the board and what I/Os, because

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you know, that was designed for a different compute module, it's the same

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connector form factor but depending on the I/Os that you use. And so I think that's

37:04,  
something we'll have to look into. So if you can please reach out to our engineering and supporting team either

37:10  
through the sales contact here, you give us some details, and we'll

37:15  
be able to give you a good guide on the feasibility of using those products.

37:24  
Thanks, Nils. Okay, next question, ...

37:30  
What's the other part of the question that I missed?

37:36  
Sorry, would the CM3 module work on wave shares compute module boards?

37:48  
Sorry, Janice, was that the question that we just talked? That was the question we just had, sorry.

37:54  
I misheard Nils. I thought he asked to have it repeated. Okay, let's

37:59  
move on. RS has been pushing the 3A as an

38:05  
alternative to the Pi to us but it's still twice the price, doesn't boot from

38:10  
USB and apparently doesn't fit into a Pi case, which I have a lot of stock of. Are

38:17  
you planning to address these issues? Yeah, I think that's a really

38:24  
good question. It actually brings me just to sort of maybe give a slightly bigger uh answer before we go into the

38:31  
specifics. I think, you know, Raspberry Pi and ROCK, in some instances, share

38:37  
similarities, but they are, as we know, quite different products.

38:43  
One of the things that we are incredibly passionate about at OKdo is making sure

38:50  
that we are supporting our customers and we are, wherever possible, trying to keep

38:56  
some level of that friendly form factor, so that the products that we bring to

39:02  
market can be used for example in the Raspberry Pi ecosystem. Now, in some  
39:09  
instances, that's easier than others. So, for example, we are investing a lot of  
39:14

time and effort at the moment testing and developing software drivers, Linux  
39:21

kernel support, so that you can use our ROCK range with a display that you may  
39:28

have used with Raspberry Pi, or a PoE HAT that you may have used with Raspberry Pi or a  
camera, and that work is ongoing and  
39:34

we're having a lot of success. Where we've got some more work to do is that  
39:40

not every board that we have will be mechanically compatible with Raspberry Pi,  
39:45

and we know that that's something that our customers would like to see more of. So we are  
working on that. A good example  
39:52

is that in our flagship range, and we have the ROCK 4 SE, we have the ROCK 4C+.  
39:57

The C+ actually mechanically is the best with regards to form  
40:03

factor, compatibility, although a very difficult in itself and obviously having  
40:08

an external antenna. I think just once the second part of the  
40:14

question, before I might hand it to Phil Smith to add some commentary here, and  
40:20

that's around the price. So, yes, absolutely, you know Raspberry  
40:25

Pi is a fantastic platform and is incredibly low-cost.  
40:30

We are working hard and we don't have 12 years under our belt of cost  
40:36

optimization but we are working very hard to make sure that all of the platforms we bring out all  
of the SBCs  
40:43

and compute modules that we put on the shelf are as competitively priced as possible but  
notwithstanding the fact  
40:51

that we are adding new advanced capability to the platforms, but we are  
40:57

working really hard to try and price to a market position.  
41:03

Maybe not always the same as what you might see with other SBCs but we are working on that.  
Phil, I don't know  
41:10

whether you just want to add anything more to that mechanical positioning

41:15

of, you know, what is compatible in the ROCK range and how we're addressing that.

41:24

Sure, yeah. So many of the sockets and connectors on the ROCK

41:30

boards are in a similar position as you have seen on other single board computers, such as the Raspberry Pi, for example.

41:37

But there is also a lot of extra functionality on these boards as well.

41:43

So, to take, for example, the power button. So if you were to try and put

41:48

A ROCK board into a Raspberry Pi case, it would probably fit. Most functionality would be similar to what you'd expect on

41:55

a Raspberry Pi, but then if it was a legacy Raspberry Pi enclosure, then you

42:02

may not be able to access the power button, for example. So, another way is, if that were to

42:09

interfere with your mechanical design, perhaps you could look at a configuration option and not populate certain features

42:16

that you would not be using in your use case. That also could bring the price point

42:22

down quite significantly as well for your industrial professional applications.

42:28

That's a great deal, Phil. Thank you. Janice, I hope that answers that question.

42:34

But I will just say, if it doesn't or if you have further questions, please ask on this forum or reach out to the team

42:40

and we'd be really looking forward to having a one-to-one conversation about how we can help.

I'll

42:45

pass back, Janice. Thank you. Okay, one reason the Raspberry Pi is so successful

42:51

is because they enable a large active community. Does ROCK have any strategy to

42:56

cater for an active community?

43:11

You would have seen in Sander's video that we shared over the last number of

43:17

months we've built not one but two communities that we're actively bringing up

43:23

um in a partnership approach. But, actually, we've leveraged some of the existing capabilities we already

43:30

have within the existing RS Group offering, and we've connected with Design Spark

43:36

platform to focus its energy with its 1.2 million active customers and

43:41

engineers onto helping build out some of the ecosystems on ROCK.

43:48

And beyond that, we're adding new partners into that to enhance the

43:53

software offering, some maybe uh very familiar to many on this call, but others we're still adding them on, so

44:01

it's work in progress. Sander, do you want to add anything in terms of the thinking, of our marketing,

44:08

and some of the other stuff? No, it's 100 percent spot on. Obviously, right,

44:14,

and we applaud Raspberry Pi for building the community that they have. It's a very positive, high-energy

44:19

community. And the difficult challenges in my career, you can look

44:25

back at some of it, has been the creation of communities because the hardware piece as hard as it is, isn't the most

44:33

complicated part. It's people rallying around it, touching it and then making it

44:39

larger and helping one another on the internet. I have a lot of experience with AVR freaks from my time at Atmel.

44:48

And the beauty is, Nicki has described, is that there is a Design Spark, and we are

44:54

rapidly partnering with other communities and one of them being Wevolver

45:02

to quickly put our arms around an active...

45:09

Sander, could you speak more closely to

45:16

the microphone, please, we're losing you? I think he's breaking up.

45:32

Yes, I'm afraid we're not hearing you, Sander.

45:37

Can you finish the, can you help finish off that question, Nicki? Yeah, I  
45:42

think what Sander is basically saying is that we're looking to take a similar approach and  
reward, which we  
45:49

did headway on that, but actually we would invite others to help build out that community and  
really, you  
45:56

know, communities are only successful by the contribution of its members. So, really  
46:02

help and get involved, you know, sign up to Design Spark, share some of  
46:07

the content and share some thoughts around what you think we could elaborate on. There's  
some great questions being  
46:14

posted here that we'll be more than happy to add some content into that community.  
46:19

That's an answer question we can always come back to elaborate on.  
46:26

There's some other good questions around the industrial grade. Janice, maybe, I don't know,  
whether we can take one of  
46:31

those.  
46:42

Maybe the one from Laura's got a good question here. Maybe, Rich,  
46:49

you could answer this, if I share it for you. So, the  
46:55

programmable automation controller, she's checking my Ts are in on an early  
47:00

January, but uh PLC's they don't want to call that the industrial PC IPC  
47:06

makers have been pretty successful in planting the notion that way less  
47:12

expensive Raspberry Pi isn't an industrial-grade solution. You've used the term industrial grade  
several times,  
47:19

can you please address that please? There's also some questions that just go alongside that,  
Richard, about operating  
47:26

temperatures zero to 80 degrees for outdoor projects, so maybe you can just  
47:31

talk about the industrial characteristics of ROCK.  
47:37

Yeah and the line is just broking up a little bit, so Janice, can I just check  
47:43  
with you and Nicki that you can hear me still? Yes, it's not too bad. Okay, good. So I think I  
heard the  
47:50  
question, and it was, you know, focused through the lens of, you know, we've talked about  
industrial. So I think let's  
47:57  
do a couple of things. And first of all, it's quite a broad spectrum when you talk about  
48:04  
industrial SBCs, but I think where OKdo's focus is on a  
48:11  
couple of things. First of all, we are working hard to ensure that the  
48:17  
platforms that we put out have got the right industrial parameters that our  
48:24  
customers are looking for, so that could be anything from the temperature range on the chips  
themselves to  
48:32  
actually get wider components that feature on the platforms that we develop.  
48:38  
So, from a Rockchip perspective, I think we have the luxury that in many  
48:44  
instances, even if the platforms that we have on this shelf are not fully  
48:50  
industrially rated, we have the capability to make them industrially  
48:56  
rated for our customers to have that requirement. But I will say to the team  
49:03  
that asked that question, it is becoming a bigger priority for OKdo to  
49:09  
have industrial solutions off the shelf and we are looking at industrialising  
49:16  
the compute module strategy that we have on ROCK. And I will just pass the Nils in a  
49:22  
moment just to share a little bit more about what we're doing in the background around that  
piece. But I also want to  
49:30  
say that, you know, just as we are with ROCK, we are working with other partners  
49:35  
on that industrial piece as well, and an example that I just want to bring up is  
49:40  
that we do work with NXP, we have a board called the DEBIX Model A board which is  
49:47

based on an i.MX 8M chipset and that board is very much  
49:54 focused on industrial customers. It also comes in a Raspberry Pi type form factor  
50:02 but it is definitely something that you can expect to see more of from OKdo  
50:07 as we progress through 2023. But I just want, Nils do you want to  
50:12 just add a little bit on the industrial side of our range and some of the things that we are working  
on as we move  
50:20 through 2023? Yeah, thanks, Richard. So I think  
50:28 you captured it well. I mean, a little bit more detail when it comes to the industrial terminology  
and Industrial  
50:34 grade, there's a few different interpretations depending on if you're talking about the chipset, the  
product, or  
50:39 a final end product. So what I can tell you now we have  
50:46 Embedded World coming up and we expect at that time at least to  
50:51 talk a little bit more about boards that offer extended  
50:57 temperature range, things that we can't offer today, you know, minus 40 to plus 85 degrees.  
51:03 But we'll also have other platforms that come with even higher uh temperature  
51:10 ranges, etc. So, I think and if you do have a specific environment, and I've seen other  
51:17 questions on this that you need to be operating within, please reach out on the  
51:23 sales@okdo.com, and we'll you know work with you directly on which board suits  
51:28 your environment the best. I'll pause there, thanks. Yeah, I think  
51:34 that's great build, Nills. But again, I'll come back to you, Janice.  
51:40 Sure. Specific question on vending machines, which  
51:46 of the board professional internet router powered by ROCK for vending machines, sorry which  
are the boards or  
51:53

professional internet routers powered by ROCK that are available?

52:03

Janice, I think that question probably comes to me, but I couldn't catch it

52:08

so I'm just going to ask Nils or Phil who's in the UK, whether they heard that whether they can just help.

52:15

Okay, thank you. Nils, did you, did you hear the

52:21

question? Yeah, so when it comes to the boards which are suitable for

52:28

the application that we spoke of, I think that it depends on the final design,

52:34

but what you'll find is most of our boards support the 4K output, which is a

52:40

key driver. And then we also have you know the quad-core enablement. eMMC is another a great

52:49

feature if you're looking in for products in this application because of the robustness the

52:55

of the memory, the storage using SD cards. That's been used a lot in the past, you

53:00

know, there's a higher risk of corruption or I should say a higher risk of corruption versus using the eMMC module.

53:08

So I think anything ranging from the ROCK 3A upwards will be suitable

53:14

and if you do custom boards, obviously, the CM3 is a suitable product as well.

53:22

Thank you, Nils. Again, Janice, sorry about that. It was just breaking up a little,

53:27

bit, but I did hear Neil's answer. I think it probably caught that quite well for that for that audience member.

53:34

Thank you. Okay, next question. Can you work with customers to build

53:39

HATs instead of customising the board, and are there any benefits to this?

53:45

That's a great question, that actually, the short answer is yes.

53:53

We do, and we want to accelerate our ecosystem partnerships

53:59

around the HAT strategy and yes that there are benefits to that strategy

54:05

as well because it means that we can partner up, grow the ecosystem, and  
54:11  
actually offer a broader range of off-the-shelf applications that will answer a lot of the questions  
our  
54:17  
customers are looking for. So this is definitely something that we want to explore further we are  
now  
54:24  
getting people reaching out to us either that are already in the Raspberry Pi  
54:29  
Community or new companies that have ideas based around our ROCK and broader  
54:36  
Strategy. So, I think this is something that we would like to explore more, and, again, I  
54:42  
would welcome anybody on this call that has some ideas to get in touch  
54:48  
because that will be something that we will be investing and driving harder through this year.  
54:56  
Thanks, Rich. Just a short build on that, Richard, I was losing a bit on the audio but...  
55:09  
Nils we've lost, we've lost you. We have quite a broad partnership base around HATs as well not  
know about and if there  
55:15  
is, you know, minor configurations, maybe we can work with that part if that's your preference to  
tailor those  
55:21  
solutions as well. Thank you. Thank you both.  
55:27  
Another question. I've been trying ROCK 4C+ for a while on Debian looking for a Ubuntu  
desktop, when will  
55:34  
it be available to download via the website?  
55:40  
Yeah, Janice, I think let's bring Phil into that. Phil and Ole, and our  
55:47  
application engineering team have been working hard on our software development.  
55:52  
It's an area that, you know, we know need more work in certain areas, particularly for our wider  
community, but  
55:59  
Phil, do you want to just add some colour to that and the work that we're doing there?  
56:06  
Yeah, sure. So, currently, on the website, I think you can download the Ubuntu  
56:11

Server images. There's various Debian images there as well.

56:17

We are still looking into a desktop software release on that as well. You

56:23

may have also noticed in the news a few weeks ago that the ROCK boards have been adopted by the main line of Linux, so

56:32

it's at the head of the tree there and currently on version 6.1,

56:38

so that might help with your software story.

56:43

Yeah, brilliant, thanks, Phil. I think just, Janice, just to that, I think I want

56:48

to make sure that you know, we get it out on the table that software is probably where we're spending most of our time

56:54

and energy to help our our customers, and our developers, and our partners, and so there is quite a bit of news coming out

57:01

at the moment with regards to what we've been doing and but I think there's more

57:06

to come and probably some more navigation to where you can find the most up-to-date links to the images

57:13

that we're building and the support that goes with that. So, thanks, Janice. Thank you.

57:21

I think this may have been covered earlier, but board description says the operating temperature

0 to 80

57:26

degrees, can these boards be used in outdoor projects and or in a car? I know

57:32

you touched on that earlier. Yeah, I think Phil

57:38

maybe you want to just come back on and just and talk to that piece? I know you've been looking at that and those

57:44

applications quite a lot recently. Yeah, sure, so the boards are currently

57:49

in the brief mention that they are supported between 0 to 50 degrees Celsius as the ambient temperatures.

57:58

We have heard of uh customer using the boards and putting other types of

58:04

cooling methods on the top of the single board computers, not just a fan, the heatsink but also using a Peltier, which

58:11

would then help to really pull down the core temperature of that board. So, there

58:16

may be workarounds there not much just for these single board computers but any, perhaps with that extra cooling.

58:26

Thank you. Okay, yeah and Janice, for that question as well, we do have some examples

58:32

that we could talk through with our customers around where ROCK boards are being used in outdoor environments and

58:39

again if those could those people that are interested in that reach out we can have a more detailed

58:45

discussion and share some more details on what those applications look like.

58:51

We'd be happy to do that. If I just can add one thing to this

58:57

tool, one other thing that's very important when you are outside is also not just about the temperature but also humidity, and the enclosure, and the

59:05

protection for foreign objects. So, when we have questions about this or projects about this, what we tend to

59:12

do is to take down all the details and find out exactly what we should cope with it, how we should do and then we

59:17

typically find a solution that we can work forward to and, so it's not just can I make a

59:25

product work in our car, outside, it's also everything about the vibrations and the humidity foreign as mentioned before.

59:33

So, there's a lot of things to take into account when you are discussing this kind of product but please do come

59:39

forward with them and if not anything else, then have a chat with us, and we will find out if it's something we can do or

59:45

can't do. And if nothing not anything else, then at least you get some our input to what you should consider

59:51

about it. Great, Phil and Ole, thank you.

59:58

Okay, next question. Has there been a thought to add an additional NIC, so that

1:00:04

the 5B could be utilized in firewall applications?

1:00:12

Yeah, so I'm going to pass that question again to

1:00:17

Nils. I'm not sure actually what we've done there already, but I'll

1:00:24

address it to validate in case there's something there from your side.

1:00:35

I don't think your audio is great, maybe go to Phil or Raul. Yeah, I think Nils

1:00:41

might be saying... Can you hear me? Yeah, go ahead Nils, yeah go ahead. So the chipset does

1:00:51

support 2GB, sorry, high speed Ethernet ports, you know, that the 5B is, you know, the

1:00:57

first thing is form factor to offer 2.1 GB per second on the Ethernet port, so it could do very well  
in network

1:01:02

applications. In terms of the 5B having it, it wasn't the primary thought, but

1:01:10

there are products that are in the works, I can't give you specific details, but

1:01:16

where I expect more of the networking interfaces to be brought out. So, I appreciate the,

1:01:22

you know, the input and the question, and we'll take it with us. We do have

1:01:28

other boards that offer dual Ethernet capabilities. If you do want to run a firewall

1:01:34

applications using wireless, the 5B comes with, you know, the M.2 slot, for

1:01:40

example, a Wi-Fi 6 Wi-Fi connection. So in wireless applications, you can

1:01:46

offer firewall and another network related capabilities with the

1:01:52

board that we have today. Brilliant. Thank you, Nils. I can build that slightly more. So, we

1:01:59

also have some accessories. So there is native USB speeds out to the USB ports

1:02:04

on the Rock 5B, so there are plenty of adapters available that could

1:02:09

translate USB onto Ethernet if it's a wired connection, but also remember

1:02:15

that the ROCK 5 M.2 slot, the E key, it has

1:02:21

SDIO at that port, PCIe two and three

1:02:27

and USB ports in that M.2 E key slot as well. So you should be able to

1:02:34

add all sorts of different types of connectivity using that particular slot.

1:02:40

I hope that helps. Yeah, it does help. Yeah, brilliant, thank you, Phil and

1:02:47

Nils. Back to you, Janice. Yep, next question.

1:02:52

How will you support resellers if you are also selling direct?

1:03:03

Yeah, maybe I'll answer this question, I don't know if Sander is still on the line with us.

1:03:08

But I think Sander mentioned this, but we're trying to build a

1:03:15

partnership and ecosystem model, whereby we want to make the technology pervasive

1:03:21

and partner with primary distributors or resellers.

1:03:27

We're not looking to open it to be too broad because we want to have a

1:03:33

strong partnership relationship. And as Sander said there, we'll do some co-marketing, co-innovation, run

1:03:39

competitions together, we can share our literature with you, we can devise a code marketing

1:03:46

plan together, but we're more than happy to share that literature and equally, we're happy to offer our design support

1:03:53

to your customers through you if it helps you land your larger customer

1:03:59

orders with some OEMs, but we're more than happy to assist in that way. So,

1:04:04

we're very much looking to build a partnership, but there are some customers

1:04:09

who are coming to us from larger OEMs we've got placing orders with us directly and we're servicing them, so

1:04:16

we see that more as a complementary offering rather than a competitive one.

1:04:23

Yeah, Nicki, can I just just build on what you just said

1:04:29  
before we pass to Sander because I think you just mentioned something really important, and I think  
1:04:35  
the question is how will we support our resellers when we sell direct. I think the reseller community is  
1:04:43  
incredibly important to us, and we are already making great strides actually  
1:04:49  
and, quite interestingly, to set up a new reseller ecosystem that might not be the  
1:04:57  
same one that you've maybe seen before with other SBC providers. And so we've  
1:05:02  
already started strategic engagements with the likes of Conrad in Germany in  
1:05:09  
Central Europe, with SB Components out of the UK, and the list goes on. And I  
1:05:15  
think you know we will welcome more and more resellers into the ROCK OKdo  
1:05:21  
broader proposition, whether that's on an NVIDIA, whether that's on what we're doing with LAIIER and obviously what  
1:05:28  
we're doing and innovating with ROCK. And so I think you know we definitely have a direct sales channel obviously at our  
1:05:34  
parent company RS Group has hundreds of thousands of industrial  
1:05:40  
customers that are working with us already um but I think the reseller piece and  
1:05:45  
the community piece is just incredibly important to OKdo and we're going to  
1:05:51  
find ways to make that easier to do business, more attractive to do business and  
1:05:56  
where we can support in the mutual win moving forward so really excited about  
1:06:02  
that. But, Sander, do we come to you to just to add any colour we've that we've missed there from a resale perspective?  
1:06:11  
Turns out I have some audio problems. Can you hear me now?  
1:06:16  
Yeah, okay. Well, I think you and Nicki said it all, right? We're here to  
1:06:24  
support you with whatever you need. From a marketing point of view, we have a  
1:06:29

large appetite to go and give you the air cover needed for you to close the  
1:06:34 business, and then on the commercial side and on the technical side, the team is available to engage.  
1:06:44  
Thanks, Sander. Okay, another question. Is there a  
1:06:50 reason for the lack of Google Play protect certification on the ROCK 5B? We've tried manual registration and  
1:06:58 that doesn't seem to work.  
1:07:03 Yeah, that's a good question, actually, one that I saw on a recent  
1:07:08 review that somebody mentioned that as well. Ole, I don't know whether you've had any experience with this with the work and  
1:07:16 the testing and the development you've been doing on the 5?  
1:07:39 Yeah, his audio should be working. He's not muted.  
1:07:46 So I think then he must have an issue.  
1:07:54 Okay, well, so I think Janice, maybe, so I have publicly put my mobile phone  
1:08:01 number in the chat. I have zero inhibition to do business. So, if people  
1:08:08 want to call me, and I think Richard and Nicki, you can certainly email them.  
1:08:13 There's a lot of additional questions. I see there's like a ton more. We  
1:08:19 will make sure we answer all of those. So yeah, people want to just make phone  
1:08:25 calls to just have an ongoing conversation, that's fine. Then I'll give it back to you.  
1:08:31 That's great, thank you. Yeah, I think that's all the questions we have time for today.  
1:08:37 And as Sander said, you know, if you have any follow-up questions or if you're watching on-demand,  
1:08:43 do please get in touch, and you can get in touch at sales@okdo.com.  
1:08:50 So once again, thank you for joining this OKdo ROCK Webinar, and we all wish you  
1:08:57

a very pleasant rest of your day. Many thanks.

1:09:03

Thanks all for joining. Take Care. Thank you. Thanks, everybody.