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The New JZ BT301 Microphone

An Interview with Mr. Edijs Rudzis, Mr. Juris Zarins
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BT301 Review
Ken Morgan, Wireline Studio
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pan60:
Okay, as I recall the other day you said your name was pronounced Eddy (US spelling), Is that correct? can I call you Eddy, or Ed?

Eddy:
Yes. Feel free to do that. Most people and friends call me Eddy.

pan60:
cool!
Eddy it is:)~

also, Can we get Mr. Juris Zarins to chime in?

Eddy:
For sure. We are working in same building every day of the week. And always everyone is welcome to ask him any questions. But through me or other members of JZ team as Juris is not very good at other languages excepting Russian of course ;)

pan60:
well I am not very good with english, and that all I know: o~

so, how about both of you yell us something about yourself? Please include some background, and just how did you (Edijs), come to be a part of the JZ team?

Juris Zarins:

I am involved in microphone manufacturing and business for about 20 years already. I started with repairing work for big name brands like Neumann, AKG, Telefunken and after some time it was clear that it is time to start produce microphones myself and create better sounding (and looking) products, because I noticed a lot of things in vintage mics which could be done differently and better. Here we should mention that I am professional jeweler and together with good knowledge of metal works and industrial design I was able to transform mics also in work of art. I know that my designs have been source of inspiration for many, many musicians, engineers and voice over artist.

So, in the beginning there were other brands, and then came Violet, which all range of mics as compromise between modern and vintage mics still belongs to me. Now JZ – which is absolutely my company with manufacturing and selling rights worldwide.

pan60:

i love it when art and function come together:)~

Eddy:

I was working in MI store several years ago when friend of mine invited me to take a look on microphone factory and after that asked me to work for Violet Design, Estonian company which is worldwide distributor of Violet microphones. I was sales assistant for more than two years. Then JZ came out with idea of basically new type of microphone and some very innovative thing together with decision to form new company with absolutely different idea behind the products. I got offer to join Juris to lead JZ Microphones as VP Sales. It was great offer and big challenge for me!:) I am musician from age of 14 and it is my passion. I can spend hours and hours in rehearsal room and recording studio. And now it is also very interesting to work together with Juris in searches how to improve sound quality.

pan60:

I am sure everyone is aware of past battles with another microphone manufacture competitor, can you tell us a bit about the JZ Microphone company, and just how the company come to be, without mentioning the competitor?

Juris Zarins:

Main thing is that I came out with idea of new type of capsule sputtering. We call this golden drop technology. Capsule is not covered with equal gold or other metal sputtering over all surface of diaphragm, but is covered with many different sized golden dots still keeping all surface active by very thin layer of gold. This gives you something like a lot of SDC's in one LDC mic. Best of both worlds – details and hi frequency range from SDC mics with keeping mids and lows from LDC mics.

Also capsule response is very fast in such combination so you have perfectly clear sound, not dark, colored, or to much harmonic distortion, as with old dual diaphragm capsule mics. I know that some of the vintage mics may sound warmer and have more body, but that sound is not as perfectly clear and detailed.

Eddy:

So this was crucial to launch new microphone brand as product with such ideology simply did not fit in Violet product range. As musician I know that there is also very many situations where it is better to choose some warmer ("dark, colored, or harmonic distortion") mics than a clean and crisp sounding mic. It is interesting that after doing A/B test between Black Hole and other mics human ear gives impression that there is less body and lows in BH, but when trying it in the mix you see that everything is there. It is because sound is so clean and right and mostly we are not used to that.

There was some more products in pipeline with alike thinking behind products and it was clear that we should come up with new brand and company together with new team for marketing and sales.

Eddy, as Ken is helping us out here and concentrating on the review, while we chat, he has a few questions for you.

Ken:

The 301 and its grandfather (the 201) are pretty much exclusive shapes in today's marketplace, and seem to work very well - what motivated you to explore the body design?

Eddy:

We studied market of SDC and found out that everyone is copying everyone. Also JZ mentioned that there is some problem with cardioid pattern because of the body shape of Standard pencil mics. So after several weeks JZ came out with drawing of BT series. Then we added magnetic heads for easier use for BT201. BT301 is made to be more classic and we decided to not have changeable heads as also Electronics scheme is different from BT201. As company we are always into innovation as we see many unsolved problems in microphones. It keeps us going.

Ken:

With an arguably over-saturated microphone market, what should people look for in your product that will cause them to choose JZ over another product?

Eddy:

Something fresh and new. We do not try to replicate standard microphones, but offer new solutions to help you in everyday recordings. Basically people are not buying drills, but holes. Right? So we try to offer holes instead of drills. Every mic we have and will have is evolution in microphones. Also handcrafted product always is good investment for future. Every JZ capsule is made with hands. And do you know any other company who had came out with original design of capsule which really works in past 10 years?

pan60:

sweet, we need more companies willing to explore new designs as opposed to just turning out another clone.

this not intending to offend those doing clones, just that we have a great plenty of companies doing a awesome job with clones.

so, What type of machinery to you use? How much do you all source out and how much is done in house?

Juris Zarins:

Generally all mics are handmade and handcrafted therefore the most important emphasis is put on labor which is specially educated. But of course we do have the latest technologies, i.e. special laser devices, cutters, lathes based on CNC approach. Basically everything in our products is made in house. We outsource only manufacturing of PCB's and cartoon packing. Every electronic part and also raw material is carefully tested and measured before they goes into our products. We do even small screws & bolts for mics by ourselves!

pan60:

nice, i love metal work and as most know dabble i bit in design, but my tooling is all old outdated and sometimes discarded tooling, but i do love it.

Tell me how do you start from a microphone idea, and take it to a finished product?

Juris Zarins:

The idea for new microphone comes and goes around all the time. You just have to choose the best one! It's like artists are getting inspiration and then writes a great song, the same is about mics. After that when you have discovered nice design you have to find way how to get this idea into real mic, real sound. And that's matter of knowledge and experience. Most important thing – in my designs visual look have to do something with sonic improvement also.

Always we test our prototype products in our studio for some period on different applications, then when we send out couple of them to our friends worldwide to get first feedback. So we can fine-tune new models before public launch.

Eddy:

Time to time I throw in some ideas what we are missing in the market and which issues have not been solved. It is great to interact with our customers as they have many good ideas. Very soon we will have some kind of contest for new mic designs – everyone will be welcome.

There is no sense to copy something or replicate vintage mics. There is already too much companies doing that.

pan60:

Do you do work for other companies, or just on your own?

Eddy:

As I mentioned before factory manufactures mics also for Violet Design.

pan60:

Eddy, as a fellow musician, i must ask what instrument or instruments, do you play? Do you run a studio in your past time?

Eddy:

I am guitar player. I own several Schecter and PRS guitars and playing still playing in the band with my childhood friends ;) This is more for fun and relax. I do not have a Studio but I am kind of responsible for JZ Studio. It is located behind wall of my office, so I sometimes record my band there. These experiments are very educational for me to better understand mics and other recording equipment.

pan60:

I love guitar and also play a bit, not as much as i use to but i still try to make time, playing music is a way i relax myself:)~

Juris Zarins, tell us about your studio? Is it only for testing you products, or is it operated as a commercial facility as well?

Juris Zarins:

We have very small Studio in our office building and we use it mainly for testing products but sometimes we do „commercial” recordings for our friends. Nothing big... It is good place where to test mics on guitars, drums and voice.

pan60:

The sputtering technique you are calling golden drop technology, are you controlling each drop, where it falls, the diameter, thickness, as well as other possible parameters?

Juris Zarins:

Yes. We control every parameter of each drop as well as location. It is based on maths ;)

pan60:

I love Math;)~

too few people really understand just how important math is in our everyday life:)~

Is there anything being done to the capsule to accommodate the new technology that you could share with us? Sounds like this could be a very tricky process.

Juris Zarins:

Basically we use standard Mylar film, then add golden drops and then cover all surfaces with aluminium-titanium sputtering technique. It could be tricky to replicate it without special knowledge and tools ;) He-he-he...

pan60:

Nothing wrong with keeping some things top secret!

So, would it be safe to say, the new mic line from JZ microphones, are intended to be very accurate and / or Hi-Fi?

Eddy:

Kind of. In Black Hole series we try to have as natural recordings as possible. You can try it out with acoustic guitar. In recording it sound like someone really plays near you, with other mics – like record is played back. Every musician and band spend countless hours with choosing and finding right instruments to get perfect sound. Why to color this in the recording? Same with vocals. Also voice overs and etc.

pan60:

The new BT301. What is the intended application for this microphone?

Aside from the intended application, where else do you feel the BT301 microphone shines?

Eddy:

Acoustic instruments ;) But basically it is designed as universal microphone, also for live. Some of our friends in LA music scene like them very much on orchestral string instruments in combination with Black Holes. I really like BT301 on piano. And for voice but then you should use windshield as capsules is pretty open.

pan60:

Can you give us some specs?

Eddy:

Main thing – capsule uses golden drop technology.

Transducer Type: Electrostatic Condenser Operating Principle: Pressure Gradient
Diaphragm's Diameter (inch/mm): 0.8"/21 mm Frequency Range: 20 Hz to 20 kHz Polar
Pattern: Unidirectional, cardioid Output Impedance: 50 ohms Rated Load Impedance:
1000 ohms Suggested Load Impedance: > 500 ohms Load: 33 mV/PA S/N Ratio CCIR
468-3 Weighted: 76 dB S/N Ratio DIN/IEC 651 A-weighted: 87 dB-A Equivalent Noise
Level DIN/IEC A-weighted :5.5 dB-A Maximum SPL (<0.5% THD @ 1000 ohms): 133.5
dB Phantom Powering Voltage on XLR Pins 2 & 3 Relatively Pin #1 +48V (±4
V) Phantom Current Consumption < 2mA Output Connector 3-pin XLR Male, gold plated
contacts

pan60:

Will the name remain the BT301, or will it change as the microphone gets ready for
market?

Eddy:

I think that we will keep it as BT301. If someone have better idea – I am always open.

pan60:

I know their are some photos out, but can we get something exclusive for this article?

Eddy:

Here you go :)

pan60:

Sweet, folks will love seeing these:)~

Eddy, you mentioned these new microphones will be offered in a limited edition, will they
go into to production after, or will their only be these few limited edition models?

Eddy:

As in BT301 we use some hand selected and high quality components which are rarely
available we do not see any possibility now to make more than 30-50 units but if
situation changes together with right situation in market we will consider this
opportunity.

BT301 Review

Ken Morgan, Wireline Studio

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Synopsis: The JZ BT301 mic is an unusually shaped cardioid, mid sized capsule
microphone with much better than expected results in nearly every application in which
we could test the device. With a retail tag of \$1895, the BT301 seems to be best suited
for hand percussions, arco (a musical notation, telling string players to resume use of
their bow), pluck, and strummed string instruments, and similar chores, finding its place
in nearly any higher end mic locker.

Introduction: The BT301 cardioid mic is an odd looking beast. When it showed up here
via FedEx, I opened the courier box, and was greeted by a handsome wooden storage
box closed by a small but powerful magnetic button. The 301 was nestled safely inside,
waiting to go thru its testing. The mic, unlike its predecessor the BT201, does not have
any removable or interchangeable parts. The head was there to stay, the body closed up
tight as to avoid the insides from being examined (note – I am not real big on working
with things I cannot see the insides of, especially in review stages)(pan60 comments
though crowd Ken, with laughter). There was no mounting system or clip provided with
the review sample. For the review, I used AT4041 clips and SabraSom shock mounts
with success. Preamps included A Designs Pacifica, P1, EM Silver, Avedis MA5, OSA
MP1C, and console pres from the Soundtracs Solo 32.

Does the mic have a color? I think so. Like almost all mid sized condensers, the mic
does have some proximity effect (, but you really have to push it to get there.

pan60:

(a question KEN, how close was you to notice the proximity effect, and out far back
from the source would you say you would need to be for the proximity effect not to be
noticed?).

for those that may not be aware of proximity effect.

proximity effect is a referral, to the change in frequency response when using directional microphones, as a given source is brought close to the microphone. A microphone will exhibit a somewhat exaggerated increase in the lower register frequency response.. Proximity effect, is found in directional microphones predominately do to physical characteristics of their build and / or design.

The mic does not seem to exhibit the usual 7K bump associated with SDCs (since it really isn't one), but does seem to exhibit a pleasant rolloff at some of the higher frequencies. Nothing ever really sounded harsh, even the things that seem to with most everything else...so I guess in the big scheme of things I would color this one warm and smooth, more so than most anything else anywhere close to its price range (and in my view, this is a great thing)

Testing:

On acoustic guitars, the unit performed well, with a much richer bottom end than expected, even from a 000 sized Martin.

pan60:

Ken, another question, how much of what you are hear is just a great rich bottom, and how much is proximity effect?

Proximity effect is more noticable with the 301 than smaller capsuled mics (assumed from the size of the 301 capsule). Highs and mids well voiced and controlled. Classical guitars really sparkle with this mic. Country/bluegrass also sounds great...I like this mic, if for no other reason the guitars. Note – the 301 in our tests seemed to be extremely sensitive to the players choice of string and pick gauge; even normally minor details such as pick material were easily noticed.

pan60:

Sounds like these mic really delivers as to clarity?

For hand persussions, most of the tests were keepers. Conga, bongo, and similar low/mid voiced instruments were perfect. Hand cymbals, claves, brushes on snare, etc also gave great results. The only time the 301 did not give us what we were looking for was on stick played snare, and the bottom side of a djembe. Wasn't a bad sound, just wasn't a tight, controlled, and focused sound.

Vocals: Not a good choice. Nor was it designed to be.

Cello, DoubleBass, Viola: The BT301 mic seems to really show itself as a standout when used with arco and long sustained passages. The majority of our tests were done while tracking a soft jazz artist Katy Ely. On low register arco instruments, the BT301 produced great results time and time again. Double bass and cello lines were clear and smooth, all tracked and subsequently mixed with little EQ.

Upright Piano: Placing the 301 a little off center favoring the treble side, facing down into the sounding area of our upright piano yielded a better than expected sound. I would jump at the chance to mic up a Yamaha C7 in a great room with a pair of these – perhaps next time? (hint hint)

Electric Guitar Amps: We mic'd up our favorite MusicMan SixtyFive Reverb head and a JBL stuffed cab for some telecaster chicken picking stuff, some western swing jazz plonked on a Gibson Chet Atkins, and other assorted clean stuff...All good. We then fired up a 5 watt Epiphone amp connected to a Marshall 412, punished with an Ibanez something or other tuned to C...The BT301 did not seem to react as well to overdriven tones as it did to clean legato and staccato amp tones.

Conclusions: In my opinion, the JZ BT301 is a serious microphone for serious acoustic applications. Its larger capsule provides the user with clear, powerful capture of most arco and plucked string instruments, amplified or naturally. Its clever body shape ensures minimal rear axis interference to the cardioid polar response. The BT301 offers a unique alternative to many of the seemingly prohibitively expensive and out of production vintage mics currently seen as standards. While the BT301 is by no means a utility mic, it is a mic that excels at what it is designed to do.

Highly recommended.

pan60: Ken: Eddy: Juris Zarins:



Pan60 has been awarded an honorary membership of API's VPR Alliance, 2008.

Link to Press Release: http://www.apiaudio.com/nw_670.html



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