

Rechipping results part 2

Optionen

Diskussionen

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Ted Spencer [Profil anzeigen](#) [Übersetzen in die Sprache: Deut:](#) [Weitere Optionen](#) 30 Aug. 2000, 03:00

Please see part 1 for what this is about.

I've now received 10 Burr Brown opa2132P chips at a hefty \$6.91 a pop and have tried them in both the input modules and the master module of my no-logger-called-Tascam (I call it "custom" now) M3500. Here are my impressions:

These puppies sound *nice*. Much nicer than the 2134s which I had thought would be similar (kindly, DigiKey is going to let me return those). The 2132Ps have just a touch of the midrange shallowness and high end grit of the 2134s but only a tiny amount. Compared to the opa2604s, they are less tubby, and seem to have a somewhat more extended low end response. The bottom end on these chips is awesome. But the mids and top on the 2604s make them more pleasing to the ear even though the low end is somewhat more colored. The depth and warmth of the midrange on the 2604s is just amazing. They sound so good in that critical area that I kept having to remind myself to be analytical and make judgements of the audio quality - my heart kept intruding and going ahead and just enjoying the music - silly old heart <g>.

By the way I'm using CDs as listening references here - not multitrack masters - so that needs to be taken into consideration. How the whole thing sounds in a real world mixing scenario, which of course is the point here, I won't really know till I mix my next project. By the way the CDs I'm using for reference are James Taylor's "New Moon Shine" album, primarily track 7 "Like Everyone She Knows" mixed (superbly IMHO) by James Farber, and Jackson Browne's "I'm Alive", several tracks, but particularly track 3 "Everywhere I Go", notable for great ambient drum sounds and big bass, mixed superbly by Ed Cherney.

After trying the 2132s in two input strips (5 chips each) I moved them to the master section and this is where I began to really get the small hairs standing up. After living with the LT1358s in both input and master sections for some time now the present combination of 2604s (on 5 inputs so far) and 2132s in the master section is like a kiss from God. Big, clean, deep, wide range, excellent transient response and that U47-like (somebody stop me) midrange. I think you can tell I'm pleased <g>.

The only thing that's slightly an issue here is that the coloration of the 2604s makes it so the board has a definable "sound" to it. This can be discerned when comparing a CD through the inputs and stereo buss to the same CD returning to the monitor section directly. The direct sound (through only one 2132) is slightly brighter, shallower, and has a somewhat more extended, more solid low end. The 2604s via the stereo buss have that cool depth and midrange thing and the sweet high end, but also the slight tubbiness thing. I'm contemplating putting one 2132 in each input and/or swapping a 2604 into the control room chip, leaving 2132s in the stereo buss and the 8 program busses. I'll have more chips next week and will post what will hopefully be the final 3rd installment.

Ted Spencer, NYC

"I'm a lot more like I used to be than I am" - James Taylor

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Monte P McGuire [Profil anzeigen](#) [Übersetzen in die Sprache:](#) [Weitere Optionen](#) 30 Aug. 2000, 03:00

In article <20000830122522.22490.00001...@ng-md1.aol.com>,

Ted Spencer <presto...@aol.com> wrote:

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>I've now received 10 Burr Brown opa2132P chips at a hefty \$6.91 a pop
>and have tried them in both the input modules and the master module of
>my no-longer-called-Tascam (I call it "custom" now) M3500. Here are my
>impressions:

>These puppies sound *nice*. Much nicer than the 2134s which I had
>thought would be similar (kindly, DigiKey is going to let me return
>those). The 2132Ps have just a touch of the midrange shallowness and
>high end grit of the 2134s but only a tiny amount. Compared to the
>opa2604s, they are less tubby, and seem to have a somewhat more
>extended low end response. The bottom end on these chips is
>awesome.

Great! I'm glad you finally got some to try out.

>the present combination of 2604s (on 5 inputs so far) and 2132s in the
>master section is like a kiss from God. Big, clean, deep, wide range,
>excellent transient response and that U47-like (somebody stop me)
>midrange. I think you can tell I'm pleased <g>.

Nice!!

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>2604 into the control room chip, leaving 2132s in the stereo buss and
>the 8 program busses. I'll have more chips next week and will post
>what will hopefully be the final 3rd installment.

I ended up with a combination of 2604 and 2132 in my master section
(actually 4132) partly because I have these old "pair of 2604 made
into quads" modules that I didn't want to put back in the parts bin.
I never thought about it much, but perhaps the combination of the two
chips would sound nicest!

If you're mixing and matching tones and not just going for the
absolute cleanest sound, I suggest you try the OP275. I have a little
Tascam console that has OP275 and OPA2604 in it and it actually sounds
nice now. The high end on the 275 is different, as is the bass, but
I'll let you find out about it yourself!

One possible idea would be to use 2132 in the master and monitor
sections and use the 2604 / 275 for the channels. The 275 is more
suited to low impedance sources, so it might make a nice mix bus amp.
And, don't laugh, but a quality NE5532 can make a good mix amp too.
The newer LT1469 is also something worth trying for a mix bus amp,
although the extra speed may be a problem. Make sure there's a
feedback capacitor from the output to the inverting input as close to
the chip as possible with these amps.

Best of luck,

Monte McGuire
mcgu...@world.std.com

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EggHd [Profil anzeigen](#) [Übersetzen in die Sprache: Deutsch](#) [Weitere Optionen](#) 30 Aug. 2000, 03:00

<< By the way I'm using CDs as listening references here - not multitrack
masters
- so that needs to be taken into consideration. How the whole thing sounds in a
real world mixing scenario, which of course is the point here, I won't really
know till I mix my next project. >>

What my old buddy John Windt would do when he was rechipping and rebuilding
consoles was put a stereo source in channels 1 & 2, buss them to the next
channel etc., until he was out of busses and inputs and listen through all of
the electronics to see, worst case, what happens when you start loading up the
console through everything.
Just a thought to try.

"I know enough to know I don't know enough"

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Rick Krizman [Profil anzeigen](#) [Übersetzen in die Sprache: Deut](#) [Weitere Optionen](#) 30 Aug. 2000, 03:00

Monte P McGuire wrote:

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- > although the extra speed may be a problem. Make sure there's a
- > feedback capacitor from the output to the inverting input as close to
- > the chip as possible with these amps.

Monte,

I have a general question. How much of the modules' sound is affected by the capacitors versus the amps? When Jim Williams redid my modules he said that the new caps would sound a little bright until they "burned in". I guess I'm wondering if I can go ahead and experiment with different chips, or has my sound already been locked in by the new capacitors.

Thanks,
Rick

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John Deacon [Profil anzeigen](#) [Übersetzen in die Sprache: Deut](#) [Weitere Optionen](#) 30 Aug. 2000, 03:00

I was put off when i saw the cd source to test this out, if its a commercial cd player, rca outs, doesnt all this tailoring the sound seem kinda pointless

On 30 Aug 2000, EggHd wrote:

[- Zitierten Text anzeigen -](#)

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Ted Spencer [Profil anzeigen](#) [Übersetzen in die Sprache: Deut](#) [Weitere Optionen](#) 30 Aug. 2000, 03:00

>John Deacon wrote:

- >I was put off when i saw the cd source to test this out, if its a
- >commercial cd player, rca outs, doesnt all this tailoring the sound seem
- >kinda pointless

This is a "bench test" scenario. I'm trying to make educated assesments of the various opamp's characteristics as distinct from one another - not in an absolute way for any individual chip. I'm also trying not to make a career out of this process. The source material I've chosen is *very* high quality material which I've been using as a reference on various systems for years. Yes it is from a Phillips commercial CD player. And I have done some comparing of its converters to other D/As (Sony PCM 2300, Pro Tools 888/24, SV3700, DA88, Audiomedia II, Adat) in my studio and they are respectable. The distinctions I'm finding between the chips are clearly discernable with these CD sources and that is the point - differentiating between the chips. With identical source material for all chips, meaningful comparisons can be made, particularly when I have the LT1358s available at all times to use as the "what I don't want" reference.

Ted Spencer, NYC

"I'm a lot more like I used to be than I am" - James Taylor

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Primus [Profil anzeigen](#) [Übersetzen in die Sprache: Deutsch](#) [Weitere Optionen](#) 31 Aug. 2000, 03:00

I rechipped my old m3500 with 2604 on all channels
I did not use the busses, I went direct out on each channel.
I could hear the difference over the unmoded board.
Actually I liked the coloration. I sold the desk as I did
not need all the channels and it was just to big.
A friend brought it and is really happy with it
It does have a sound, and is not the quietest board
although a lot of people who heard the mixes record
to digital thought they were warm and analogue recorded.
probably just the hiss.

Bye Dave

"Ted Spencer" <presto...@aol.com> wrote in message

news:20000830171410.22304.00001629@ng-md1.aol.com...

- Zitierten Text anzeigen -

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John Deacon [Profil anzeigen](#) [Übersetzen in die Sprache: Deut](#) [Weitere Optionen](#) 31 Aug. 2000, 09:51

Ive found a dvd player actually sounds better than the standard hifi cd
player, give it a try if u have one

john deacon
granite records

On 30 Aug 2000, Ted Spencer wrote:

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Rick Krizman [Profil anzeigen](#) [Übersetzen in die Sprache: Deut](#) [Weitere Optionen](#) 31 Aug. 2000, 14:03

John Deacon wrote:

> I was put off when i saw the cd source to test this out, if its a
> commercial cd player, rca outs, doesnt all this tailoring the sound seem
> kinda pointless

Why would it be pointless? For better or worse, CD's are the barometer of what
something "really" sounds like, at least from a music production standpoint. In any
case, a well produced CD will give you a variety of sonic information with which to
judge the chips, and I can say that differences in chips are easy to hear using CD's
as test material. And the information I thought I was getting listening and
evaluating with CD's was consistent with my experience in tracking and mixing on the
upchipped console.

Rick Krizman
KrizManic Music

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Tom Maguire [Profil anzeigen](#) [Übersetzen in die Sprache: Deut](#) [Weitere Optionen](#) 31 Aug. 2000, 14:44

When testing, repeatability is everything. The source material may not
be optimal but it will play back essentially the same way (excepting
random errors). Consoles leave so much room for improvement, that it
will be a long time coming before issues of the type of output connector
a device has have any bearing on a test like this.

In the audiophile world there is talk of the sound of switch contacts,
solder, and the yoni of the electricity you are plugged into. When you
lift the hood of most consoles you find a massive collection of all the

worst parts imaginable routed to pass through ten times the circuitry of a complex stereo from input to output. If you are going to pass through ten times as much stuff, it better be ten times as good for the signal to emerge equally unscathed.

Translation:

If you have the same 5534 in that silver plated, copper chassis, oxygen free audiophile D/A that the console has 1,000 of, along with 2,000 marginal electrolytics the issue becomes:

Reducing the console chips' distortion and noise by orders of magnitude.

Improving or eliminating passive components by orders of magnitude.

Long before better testing sources are needed.

Stockholders of chip, transistor, fet and tube manufacturers do not get warm and fuzzy over audio. In the past 10 years, passive components have followed suit. I don't know why. It dates back to the Bell Labs (WE) vs. RCA days of film when it seemed the industry, the flow of talent and most important the flow of cash, just went elsewhere. +/- 36vdc rail parts, balanced N-channel bridge outputs, integrated servos, massively parallel input stages and ultra high linearity discrete parts are all technically feasible. Hell you could write a check and get them in less time than some potentiometers. But no one will write that check.

Buy some of the new chips and stick them in. If you can hear the difference with a lowly CD player with RCA outputs, then it really was THAT bad! There are no secrets, no sacred cows, just a lot of work cleaning up designers attempts to make a price point which in and of itself is not an evil thing.

If a 2 channel audiophile preamp is \$3,000.00 without a mic pre, EQ, gate, compressor, 24ch matrix, 8 sends, VU meters etc. imagine what an audiophile grade console would cost! I don't know anyone willing to spend 2 or 3 million dollars on a console that to a producer or artist looks just like a half million dollar SSL.

Tom Maguire
TMI Engineering

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Monte P McGuire [Profil anzeigen](#) [Übersetzen in die Sprache:](#) [Weitere Optionen](#) 31 Aug. 2000, 16:00

In article <39ACEB40.56105...@mediaone.net>,
Rick Krizman <rkriz...@mediaone.net> wrote:

>I have a general question. How much of the modules' sound is affected by
>the capacitors versus the amps? When Jim Williams redid my modules he
>said that the new caps would sound a little bright until they "burned
>in". I guess I'm wondering if I can go ahead and experiment with
>different chips, or has my sound already been locked in by the new
>capacitors.

Personally, I think the amplifier is a larger contributor to the sound than coupling caps, but of course, there will always be exceptions. For example, if you replace some old and dried out electrolytics, with nice new polypropylenes, this may make a bigger improvement than if you switch between one flavor of BiFET amp and another.

Another annoyance is that while people seem to be able to hear differences between capacitor types, these differences are almost impossible to detect with traditional sine wave measurements, even with state of the art analyzers. There might be differences that could be detected with other (possibly asymmetric) test signals, but I have not been successful in doing that.

To answer your question directly, nothing is ever locked in, and

anything can be replaced with anything else. Whether it's better, whether you can afford it or whether it's worth it is another question entirely!!

Best of luck,

Monte McGuire
mcgu...@world.std.com

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JEdenF [Profil anzeigen](#) [Übersetzen in die Sprache: Deutsch](#) [Weitere Optionen](#) 2 Sep. 2000, 13:43

Is the BB 2604 a straight swap out for a TL072?

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Daniel R. Haney [Profil anzeigen](#) [Übersetzen in die Sprache: De](#) [Weitere Optionen](#) 2 Sep. 2000, 22:18

JEdenF wrote:

> Is the BB 2604 a straight swap out for a TL072?

Usually, there are no problems.

If the 2604 gets warm, you probably have a 3MHz oscillator in which case you may need to limit bandwidth with a small feedback cap and put 100 ohms or so on the output when driving a more reactive load.

BTW, TI is acquiring Burr-Brown. I am apprehensive about what will happen to their op amps.

-drh

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