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The Shanling CD T-100 CD Player

Review by Thorsten Loesch
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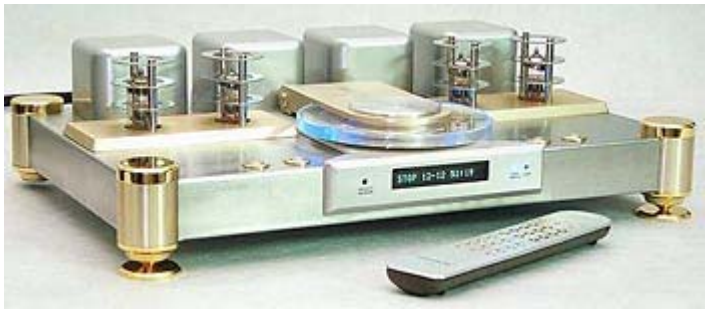


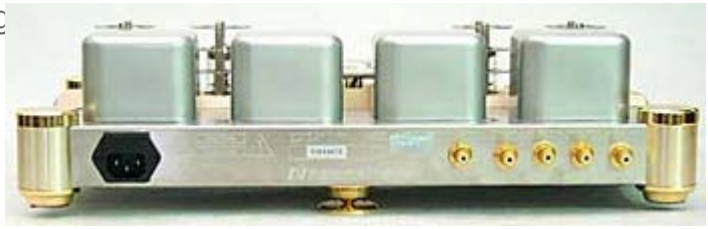
Meet the Glamour Model...

This CD player made big waves ever since it was first sighted on the Website of an obscure Chinese manufacturer (first seen later in the US public's eye on the ***Enjoy the Music.com*®'s PRIMEDIA 2002 show report**). The Internet did it's usual thing, everyone knew about it, everybody talked about. In general, the less was known the more was talked and the more opinionated the opinions became.

Others where griping about pricing, an issue I will not go into too much, apart from saying that a Chinese Hi-Fi Shop pays Chinese rents, Chinese wages to employees and Chinese taxes. A dealer in the UK or US needs to pay UK or US rents, wages and taxes and while the Chinese dealer is likely buying from the factory the simple process of importing good into the US or UK is sufficiently messy and arcane to pretty much necessitates some form of distribution, which too has to pay UK or US rents and wages (plus shipping, import tax et al). This all adds up and makes as a result a player selling locally for $1,200 to $1,300 (USD) much more expensive than that once it goes over the Dealers Counter here in the UK or the US. With a factory recommended "international" sales price of $2,000 USD the factory ensures that professional distributors and dealers with shops (the classic "brick & mortar" guys) have enough of a profit to make a living. Hey – it's called capitalism, I did not make it. You can always take a holiday in Hong Kong or on the Chinese Mainland and buy your unit there. And you can take it back to the dealer there should something ever

go wrong too.

Comments where also made about the looks. The cult of the black featureless box decided to declare the CD-Player to be shit because it was not a featureless black box, others remarking that something that looked good could not sound any good. Recent sightings at Hi-Fi Shows, but also the reporting in the **show reports section of *Enjoy the Music.com*®** caused more comments. They most interesting thing is however that few of the people commenting ever had a chance to hear the Shanling player at all much less use it for a time in a familiar system. Preferring always to be ahead of the wave I had been talking to Shanling for a while about reviewing the Player and with a UK distributor being found I finally got my hands on one of the players.



Unpacking and setting up the player was quite an experience. My first thought was: “The pictures really don’t do the player justice, it looks a lot better in reality”. The next thing to impress me was just how thorough accessories where supplied. Not only do you get different feet allowing you to chose between spike-feets with disks or felt cushioned ones, Shanling included what appears to be a very decent Mains cable, fitted in my unit with a Hubbel hospital grade US style plug (this had to come off for the UK of course, so I fitted a normal good quality UK plug). You also get a little leather cloth to polish all the gleaming stainless steel, gold and chrome, a CD, the same tracks one mastered with HDCD the other without. The Remote control is metal fronted, pretty solid and seemingly made in the same factory where Marantz buy’s their remotes for higher price Items such as the CD-7. All in all given the price a package that is not at all bad, well presented and sensible.

The owners manual is in clear English (not the often found Pidgin) if rather slim and sparse. The labeling on the transport controls is also in perfectly normal English, play, pause, next previous...

Okay, so far so good, I set the player up to “cook” for a while (I know better than to listen to a new piece cold) and hit the first snag. The supplied cord used an IEC connector whose connection was very loose. *After* unplugging the mains side of the cord I managed to use a small screwdriver to tighten the grip, I mentioned it to Shanling who promised to do better. With a reliable mains supply ensured and burned in for 24 Hours or so things started to sound very promising...

Be All Things To All Men...

Thus exhorted the Apostle Paul (Paulus) the faithful. It seems the designer of the Shanling player took note of this. There is practically nothing possible in a CD player that has been left out. You want Upsampling? You got it. You want HDCD replay? You got it. You want the warmth of tube sound? You got it. You do not like tubes; you want the accuracy of solid-state? You got it. You want to drive your power amplifiers directly, without pre-amplifier of any sort (passive or active)? You got it. You want a tubed headphone stage? You got that too.

And that is part of the problem. This player sounds so drastically different depending upon the specific use and connection that it is hard to say, “This player sounds like that and only like that!”. I will start by covering (and getting out of the way) the upsampling section. I have again and again tried it, it is easily switched on from the remote control. The changes in sound are hardly subtle and broadly mirror those I noted with other upsampler DAC’s and external upsamplers, including the dCS Purcell. I can understand why some Audiophiles like the effect of upsampling, I do not. What some hear as great detail I hear as excessive brightness and edginess. The soundstage gains loads of fake depth but narrows considerably and instruments appear to have smeared along a gradient in the depth. I found the upsampling to work just like all the other “upsamplers” I came across and to me PERSONALLY this feature could have been left out. It is nice of Shanling to give you the choice though. If you like what upsampling does, enjoy it, if you don’t, just switch it off as I did.

The other options are more difficult to assess. There are non-subtle differences in sound between the solid-state and the tube amplifier outputs. Passing the signal through the tube amplifier stage yielded a more laid back soundscaping and warmer tone, which I preferred slightly over the dryer, more forward presentation of the solid-state outputs. All following comments apply to the Player being operated via it’s tube amplifier output and *without* upsampling. As I can not stand listening to headphones I also have nothing to say about the tubed headphone output, sorry.

Be Joyful And Filled With Music...

While I was setting up and burning in the Shanling I also had a Heart/Marantz CD-6000 in my system (plus my restored and slightly modified Philips LHH-1000 DAC). Switching from the Heart CD-6000 (a little below half the price of the Shanling at around £ 700 UK for the latest

version) to the somewhat warmed up Shanling was quite shocking. Not only was vastly more detail apparent, not only did the soundscape expand to and beyond the boundaries of the room as I am accustomed to from the Philips LHH-1000, the sound had a very holographic feel to it. Over the following weeks the player improved further, it seems a lengthy burn in is required.

Clearly the player was playing on a *very high* level of performance as it was. It's forte is acoustical music, orchestral especially and if you have any of the classical HDCD Recordings made by Reference Recordings you will be asking yourself what need there is for the new high resolution digital formats (more on comparisons with those later). The sound is open, detailed beautiful with a huge soundscape and extremely visceral impact in the nether regions. My usual "torture test" CD *Pictures at an Exhibition* (RR-79 - Minnesota Orchestra - Conductor Eiji Oue) tends to highlight any areas of deficiency, for the Shanling CDT-100 it was a staple. The one thing I could not fail to note was the spatial and tonal presentation of the Player tended more towards a front row view of proceedings than to my preferred slightly more distant and warmer mid hall perspective. Adding the passive Digital Antidote certainly helped somewhat in exactly those areas (musicality and naturalness) in which it has the largest impact, it did not in any material degree manage to change the sonic perspective.

Many however prize this very direct and open sonic character as displayed by the Shanling and one can take other steps in the context of system matching to adjust the perspective. However, while HDCD Disks showed just how much life is left in this old Dog CD and how good it can be, normal CD fared not badly either. Playing one of my current heavy rotation CD's, the *Spiritual Life Music* sampler (Nuphonic - NUX118CD) especially Jephte Guillaume "The Prayer" and "Lakou a" allowed me to count almost every raindrop on "Prayer" and deeply drew me into the rhythms on "Lakou a". Referencing from memory the now discontinued Acoustic Precision Eikos (a heavily hot-rodded Pioneer PD-904, hot rod work done by Tom "The Groove" Evans, retail price around £2,500 to £3,000) the Shanling is at least equal, but most likely superior in exactly the kind of direct, unstressed, fast, detailed and effortless delivery of music that made the Eikos in it's day my personal "best CD-Player in the world".

Playing notoriously difficult pieces such as the massed Hallelujah Chorus from Haendels Messiah or Beethoven's "Ode an die Freude" showed the Shanling able not only to give human voices a good and natural timbre without any objectionable hardness or cloudiness, the ability to resolve practically individual singers was astonishing. For a real good illustration of this try the short chorus on Tori Amos

song "Way Down" (*Boys for Pele* – East West 7567806962), you should hear each individual voice clearly “lighting up” it’s distinct acoustical space, in a wide and deep semi-circle behind Tori and the piano.

It was not until I had a chance to compare the Shanling against the (unfortunately also discontinued) Marantz CD-7 that I could I finally nail down my second slight gripe with the way the Shanling CDT-100 presented the music. While the LHH-1000 DAC with a good Transport has a lot of “swing”, or pace, rhythm and timing, this classical domain of Naim Electronics and CD-Players it is not as outstanding as the CD-7. With the Shanling I knew that with music relying heavily on rhythmic ability to communicate the emotions, I was less involved than using my own set-up, but it was clear only after the comparison to the arguably at it’s last selling price more than twice as expensive CD-7 (last CD-7 Price UK £3,500 –app. $5,000 USD) that it became clear to me that the one KEY deficiency of the Shanling CDT-100 is in the swing department. Not that it cannot communicate rhythm; it just is not as good at it as the best.

On all other counts the Shanling matched or exceeded the CD-7, especially in certain areas of tonal shading where the Shanling seemed to have a palette little more varied from which to paint. Of course, like virtually any of the Philips TDA-1541 DAC chip equipped Players and DAC’s, the Marantz CD-7 has a little more of my favourite mid hall seat balance on orchestral music. All in all there was little that would make either the Marantz CD-7 or the Shanling CDT-100 a clear winner, both units played music on a level rarely achieved by ANY of the at least semi-affordable pieces of Digital replay gear. I should have liked to compare the Shanling myself to Players that are more likely it’s current competition (in price at least), such as the Arcam FMJ-72 with which it shares the new HDCD Decoder chip. Sadly time did not allow, a friend who works in a Hi-Fi shop and had promised to bring the Arcam over from the Shop for a day in the end did not manage to bring it along as it had to be loaned out to a customer. Rather than commenting on second hand impressions and dodgy comparisons, I will comment no further than saying that the Shop he works for will be selling the Player when sufficient stock has made it into the country so you don’t three guys all trying to get their hands on the same self player.

While some people reported a strong sensitivity of the player to the used interconnects I found that all my Interconnects at hand (all air dielectric, minimum capacitance, this solid core wire designs in either copper or silver) worked just dandy, I would suggest to stay away from high capacitance interconnects, and interconnects with heavy, muti-stranded conductors. But I recommend this any which way, as I have yet to encounter any of the “unrolled capacitor” foil interconnects that sounds natural and any

interconnect with heavy gauge stranded connectors that do not sound as if there is a heavy blanket thrown over the speakers. When it comes to silver vs. copper, this is a matter of taste, I preferred copper interconnects with the Shanling while my own DAC seems to prefer the silver version.

A last note on the sonic impact of the build in digital volume control is needed. I normally used the Shanling with a passive control center whose volume control is based around a transformer used with a switch to control the level. I find this method to be exceedingly transparent and wholesome to music, mind and soul. Nevertheless I tried for a while using the Shanling directly into my digital equalizer and amplifiers. As the passive control has practically no loss in level when turned fully up I could easily compare. In my system the sensitivity of the Amplifiers et al are such that the full level from the Shanling was just right for “way damn loud”. Turning the volume down digitally showed non of the immediate and drastic losses of transparency that accompany the use of the inbuilt digital volume control for example in the Heart/Marantz CD-6000, however at higher levels of attenuation detail was lost and the soundstage slightly flattened and narrowed. Nothing undue but notable compared to using a transformer attenuator. If my memories of normal resistively attenuated passive and active preamplifiers are still reliable compared to the transformer attenuator I would say the build in digital volume control of the Shanling player lost slightly more music than a good (Audio Synthesis “Passion”) passive controller but less than most if not any active preamps. If the output level of the Shanling works okay with your amplifiers running completely without any preamp or control center is likely to give the more transparent and dynamic presentation of the music.

The New Kids In Town...

The talk of most Audiophiles is and has been for the last few years all those new and improved digital audio systems. Be it the Sony/Philips SACD or the DVD Consortiums Audio DVD at 96kHz or even 192KHz sample rate and 24-bit (supposed) resolution, we are being constantly bombarded with claims of how great they sound. Of course, the number of available titles is still pretty scant for SACD and virtually nil for DVD-Audio. And what is out there is the nth re-issue of stuff I either can’t stand or already have several copies in Vinyl and CD on the shelf. Beyond that one repeatedly hears claims as to how good the new players make old CD sound. Over time I have again and again been left after demos with a feeling that while in some areas SACD and Audio-DVD had modest degrees of improvement over CD at it’s best I found myself waiting for the ear opening

experience in vain. The only time I ever heard a drastic improvement for 24-bit/96kHz over 16-bit/44.1kHz recordings was in a friends studio – there we where both quite shocked as to the degree of sonic potential a good 24-bit/96kHz recording had. But this was done with very expensive studio grade ADC and DAC's.

So I seized on the chance to hear two of the new formats in my system. Both players where modified far beyond stock, one being the Sony XB-940 with modifications similar to those offered by Vacuum State Electronics. Please note that modifications where NOT the VSE Kit or done by VSE, even though they appear very similar as far as I can tell. So my comments on the sonics should not be seen as applying to a VSE modified player, which I have not had the chance to hear. The other player was the new Pioneer DV-747 "Universal" Player apparently with improved clock, fully discrete output stages and an external pretty substantial power supply. Luckily some material was available for comparison on both CD and SACD and on CD and Audio DVD. Sadly no material was available in all three formats. So the question I was trying to answer was not if SACD or DVD-Audio where better but if a high performance CD-only player at the $2,000 price point still made any sense at all and just how much bigger the sonic potential of the new formats had grown with recent recordings and heavily optimized players.

First up was the Sony XB-940 and in my system at least it did no better on CD than the Heart/Marantz CD-6000, possibly even worse. Against the Shanling a veritable wet blanket had been thrown over each of the Speakers. Switching to SACD improved the sound in a small degree, especially where it was lacking (resolution, naturalness), but a well-recorded CD played through the Shanling CD-Player just simply was miles better than any of the SACD's we had available was through the Sony SACD Player. Okay, one must admit that at it's relatively low price the Heart/Marantz CD-6000 is quite outstanding and that perhaps for the rather inexpensive (but modified) Sony SACD Player to match this performance on CD and to exceed it handsomely on SACD is quite an achievement. My problem was simply that in absolute terms the resulting sound was not very good.

Switching to the modified Pioneer DV-747 and the same SACD recording showed clearly that the recording was not to blame. On this player (which I have been assured performs after the modifications notably better than Pioneers very expensive flagship universal player) SACD clearly offered more music than the same piece on CD. I am very suspicious of dual layer SACD's, in a number of cases I felt that the CD layer on the hybrid Disk had been deliberately crippled to give the SACD layer more of a head start. Certainly the CD layers on the few hybrid SACD's I

have my hands were uniformly atrocious. Way, way below par for high quality CD recordings. Anyway, SACD on the Pioneer clearly removed a certain veiling and graying out compared to CD via the Shanling, however I still feel that SACD as I have heard it so far does not really offer a material improvement over HDCD. This may change in the future. I have not been able to find my notes on exactly which two SACD Titles where used, sorry about that.

Next up was DVD-Audio, namely the *Buena Vista Social Club* on CD and DVD-Audio (CD – World Circuit WCD050). While sounding great, alive and involving on CD, the version on the Audio DVD was just about as much better as I remembered it from the comparison between CD and 24-bit/96kHz at my friends studio. At least with those Disks, both of which are musically and with respect to recording and mastering of very high standards, DVD Audio knocks the pants of CD. The Audio DVD was simply so much more involving, so much more alive and "almost touchable" (very much in the way I felt SACD was not) that I for one hope that Audio-DVD soon gets a large catalogue of recordings that deserve and require this kind of quality at prices that are broadly the same as those of CD and NOT sonically crippled by stupid copy protection schemes (fat chance of any of that happening). So, what is the conclusion of this little bout with the new kids in town? Until SACD gets a lot better than it is and until Audio-DVD gets a catalogue of recordings *much* larger than that available at present on SACD you are *much* better off laying out the long line of green stuff on a really good CD player.

That is of course *only* if you want to listen to the music and mostly to that whole body of music currently not on SACD or Audio DVD. If you are more of an Audiophile who listens in 30-second snatches and is often heard saying, "stop listening to the music, can you not hear how great this sounds" and who must have the latest greatest hype, then neither the Shanling or any other CD player is for you. Then you need the most expensive SACD player out there *and* another most expensive DVD-Audio only player.

In Closing Your Honor...

As Linkin Park so aptly point out "In the end it doesn't even matter"... All my highly styled prose and all my audiophile ravings likely mean little to you. So let me sum it up quickly. If a CD-Player that gets the most out of your CD collection while looking somewhat less boring and uninspired than a simple black or silver box is on your shopping list, the Shanling should be high on your audition list. Even more, if you prefer a very direct, front-row sound for classical music and if you are mostly listen to acoustical music you could almost buy the Shanling unheard. What it will do sonically is

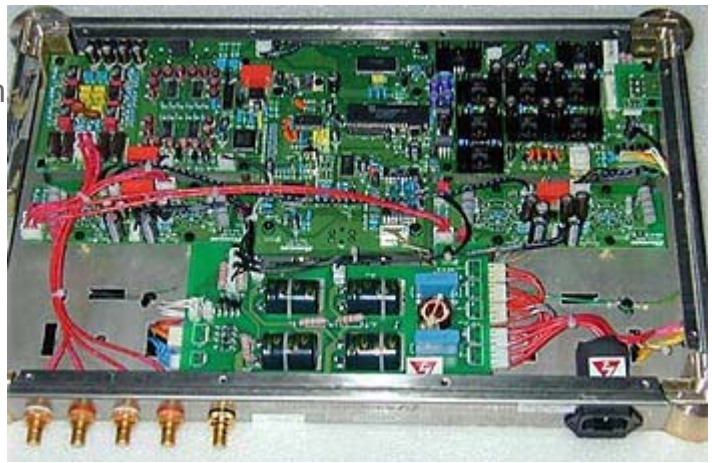
at least in most areas more then good enough to require spending a huge lot of money on technology that will likely be obsolete in the next three to five years to get a little more in terms of sound quality. I personally quite like the looks, enough probably to get me one purely as transport and as “alternative sonic view”. I’d should have tried to hang onto the player for much longer, but it was needed at a large Scottish dealership, so I had to let it go, somewhat sadly.

As to the Chinese origins of the unit, other than in the comparably low price of the unit they did not make themselves known at all, build quality is solid and workmanlike, certainly worthy of much higher price tags. If the Shanling CDT-100 misses the bar as “super quality” CD-Player it does so only by a small margin and even then only due to a certain lack of the ability to swing. As a last note, (more in the geek files), I feel that there are some areas where the electronic design in the player is perhaps a little too conservative and objectivist, nothing that the DIY Enthusiast or a professional mod-parlour might not address handsomely with a few inspired modifications.

Till the next time, enjoy the music.

The Geek Files - Technology And Measurements

This is the section that tells you about all the technical details, in case you should care about them or want to know about them.

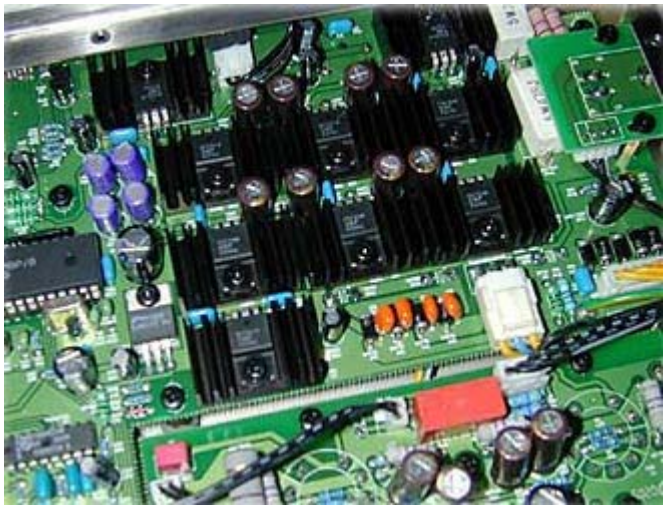


Putting on my technician hat, the Shanling player is build in a folded, stainless steel shell with massive metal “towers” forming the corners. The Philips CDM-1201 Transport is used completely with sliding tray or other attachments, being instead suspended in a fairly large machined aluminum block, which also holds the mechanism of the lid. This has a build in mechanical clamp (so no messing about with pucks) and is manually operated. The feel of the operation of the lid is very good, closing with a smooth, satisfying solid “clunk”, like the doors on nice

German cars. Most of the controls (including indeed many *essential* ones) are only present on the remote control. Only the four main transport controls are available locally. So do not loose that remote.

As can be seen in the overall picture of the players insides, most of the circuitry is placed on one large circuit board. The power supply for the tube buffer stage and the buffer stages (one in stereo for the line outputs, the other for the headphones) are on separate boards. Internal wiring for the signals appears to be copper/Teflon coaxial wire, the RCA jacks are of a type I have encountered a few times on Chinese gear and appear to gold plated over OFC copper.

On the right-hand side is the power supply for the digital and solid-state analogue stages. As can be seen from the close-up shot of the power supply section, two separate power transformers supply a total of eleven separate regulated supplies (nine of which are heatsinked in the power supply area), high quality low impedance capacitors as well as Audio Grade Elna, Sanyo and Nichicon capacitors are used together with soft recovery rectifiers and commonly used 78XX/79XX type regulator chips. The third transformer supplies the tube stages heater voltage and high tension, both using solid-state rectification and passive filtering. The high-tension line uses a choke filter and further conventional RC decoupling. The choke and three mains transformers account for the four transformer covers on the top of the player, the transformers appear to be mixes of EI type and toroidal types.



The regulated supplies are separated in the supplies for the left and right channel DAC chips and the analogue stages. There is added filtering between rectifiers and the regulators for the DAC chips. The rest of the digital section is supplied from the other mains transformer and overall five different regulators feed the transport section (motors, etc), the servo processor, the upsampler, the digital filter and the display, respectively. Many film type bypass capacitors are used and further LC decoupling is used between the regulated supplies and each individual IC pin. This kind of approach to power supply implementation makes sure to minimize the coupling

of noise between circuit sections and is indeed very solid engineering.

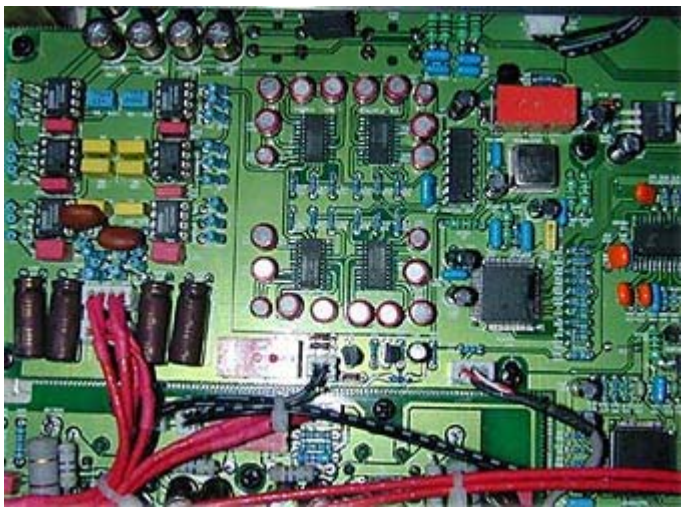
In the center of the board is the transport and servo circuitry, a pretty standard implementation of the Philips CD-7 Chipset. One of the less ideal (IMHO) details here is that the main clock for the CD operation is derived from the CD-7 Servo Processors on-chip circuitry with a simple crystal. While pretty much standard, it is a little disappointing that the chance for possibly much improved performance (especially in those areas where I felt the Shanling CDT-100 was a little lacking) by fitting a better clock arrangement was not taken advantage of. The main clock in a player is one of those few areas where a few dollar investment can reap benefits of many hundred dollars in sonics.

Anyway, after having been read and processed the data from the transport section is handed over to the upsampler and digital filter. I should perhaps add that the ability of the transport to read damaged disks is very good and that all CD and recordable CD Media are handled without problem. Depending upon the selection made via the remote the signal may be “upsampled”, more precisely it is converted asynchronously to a new sample rate – 96kHz namely. This asynchronous sample rate conversion is a process that invariably introduces a number of processing artifacts, rounding errors et al and which does NOT provide any more information even though the output word length from the sample rate converter is 24-bit it contains only 16 bit’s worth of information, the rest is noise. The actual sample rate converter chip used in the CDT-100 is the one most commonly found, the Cirrus Logic/Crystal CS8420. The CS8420 also supplies the Digital output of the Player, meaning that if the upsampler is applied to the output of the Player it is applied to the digital output as well! The Clock generator for the 96kHz clock is the kind I should have liked to have seen supplying the clock for the 44.1kHz operation of the player.

Just as an aside, the process of asynchronous sample rate conversion is not in any fundamental way different from classic oversampling, with the exception of the fact that oversampling uses linear fixed low rate ratios between input and output. Asynchronous sample rate conversion instead uses special algorithms that simulate oversampling with a very high oversampling rate (to around 3GHz) and then downsample the data again with a factor that is calculated to ensure that the output data follows the new clock applied to the chip as “master”. It should also be noted that this process simulates a VERY long filter (approximately 4 Million Filter Taps compared to the usual few 100 or even fewer taps in conventional oversampling filters – the classic 16-bit 4 Times oversampling Filter from Philips has only got 120 Taps).

All of this means that the “upsampling” process uses a very complex digital signal processing model with a very large number of calculations which is much more likely to result in errors than conventional simple oversampling. This, together with the fact that asynchronous sample rate conversion does NOT remove as such any jitter from the input signal, it rather irremovably encodes it in the data stream may very well account for the fairly drastic changes to the subjectively perceived sound when asynchronous sample rate conversion is employed. I have recorded my personal classification (subjectively) of the sonic impact of using “upsampling”, I shall leave it to each listener themselves to make up their own minds.

Upsampled or not, the digital signal is then applied to the Pacific Microsonic PDM200 Digital Filter and HDCD Decoder. This unit is the replacement for the earlier PDM100 and not only does it offer compatibility with 96KHz sample rate signals, it also has reputedly better filter algorithms (HDCD decoding and normal). Since Microsoft (yes, Mr. Gates company) took over Pacific Microsonic and the HDCD trade name a complete information blackout seems to have been applied, e-mailed requests for information do not get answered, the HDCD website has practically zip information on it and lists the PDM200 as discontinued (unlikely as both Arcam and Shanling, as well as several other companies use it in current production). Thus little can be said about the implementation. It appears that then PDM200 chip handles the digital volume control. Also, the required attenuation for non-HDCD CD's is implemented on the digital side, loosing around 6dB signal/noise ratio compared to the possible limit of -110dB for normal CD's. Again, the implementation could have possibly been slightly improved, especially with moving the non-HDCD attenuation into the analogue domain. Furthermore, it would have also been nice had Shanling chosen to re-time the digital signals after the digital filter. This could have been combined with necessary level translation form the 3.3V logic of the PDM200 to the 5V logic of the DAC’s and likely with good sonic rewards.



The DAC chip’s are four Burr-Brown PCM-1704, true 24-Bit multibit DAC’s, two each in parallel per channel. The PCM1704 are IMHO

pretty much the best DAC chips remaining in current production. Elna Cerafine capacitors (by the looks) are used around the power supply lines of the DAC chips. The whole layout of this (as can be seen on the close-up Photo) is quite tight and neat, which should help the sound quality.

The implementation, as well the analogue stage which is realized using mostly Burr-Brown OPA-2604 Operational Amplifier Chips and GIC Filter circuits (again, the chips and analogue filter circuits have a reputation for good sound) and seems to be pretty much straight from Burr-Brown's application notes, nothing wrong with that of course. Unfortunately the use of dual Op-Amp chips means that certain very high performance replacements are difficult to substitute (like the Burr Brown OPA627 which is only available as single unit), all the more a shame as the Op-Amp chips are conveniently socketed, which would make any replacement very simple and straightforward.

As the Burr Brown OPA-2604's are however among the best readily available Dual Op-Amp's such a replacement is unlikely to give drastic improvements and the kind of Op-Amp's that have been giving reliably sonic improvements over the Burr Brown OPA-604/2604 are only available as single units. I fitted for a quick test my favorite dual op-amp chips in all three positions and found the sound notably changed, though not necessarily improved. I feel that a good chance to allow the easy customization has been given away.

After the analogue stage the signal is either send to the "solid state" outputs or passed through the "tube amp" stage, this being a simple buffer circuit arranged around the 6N3P triode, this being equivalent to the well respected WE396A. I substituted some WE's from my shelf and found the sound a little more relaxed and moved towards a "midhall" perspective with the WE's, with equally a little more detail. The right-hand pair of tubes feed only the headphone output (unlikely to be of much use to most people), so there is little point in upgrading the tubes there, UNLESS you often use the headphone outputs. For the left-hand pair of tubes switching to the WE 396A (or other equivalent 2C51 et al tubes) gives a good and simple means of improving the sound from the tube amplifier output, but do not expect miracles.

All in all the design and implementation of the Shanling CDT-100 player is done on a very high level of technology, quality and implementation, though a few "tricks" that could quite possibly have made the difference between a merely very good and an outstanding player seem to have unfortunately been missed out. For basic reference, the fundamental technology platform (DAC Chips, HDCD Digital Filter et al) implemented here is found in many upper high-end CD-Player's or DAC's (including Mark Levinson, Linn

CD-12), however a few of those units perform on a somewhat higher achievement level than the Shanling CDT-100, no doubt due in part at least to the “not missing a trick”. Then again the Linn CD-12 for example costs 10 times as much as the Shanling and for that kind of money I would VERY MUCH expect a more than outstanding performance level.

There are no measurements for me to present, most CD-Players have measurements that are for my limited set of measurement gear beyond “good or bad”, the Shanling was no exception. Thus, a technical tour de force using the more or less best available parts and most of the best practice approaches in design is used in the Shanling CDT-100, combined to very good sound, all that at a very sensible price ($2,000 recommended retail price), highly recommended for audition.

Lastly, I wish to thank Audio Extensions Hong Kong for their kind permission to use some of their excellent internal photo shots of the Shanling player’s insides for this review. Audio Extensions appear to have drawn many conclusions similar to mine on the areas of weaknesses in the player and appear to provide a modification service for this player in Hong Kong, sadly I do not read much Chinese so could not comment on much else.

Tonality	90
Sub-bass (10 Hz - 60 Hz)	90
Mid-bass (80 Hz - 200 Hz)	95
Midrange (200 Hz - 3,000 Hz)	95
High-frequencies (3,000 Hz on up)	95
Attack	90
Decay	90
P.R.A.T (Pace, Rhythm, Acceleration, Timing)	
Inner Resolution	
Soundscape width front	95
Soundscape width rear	85
Soundscape depth behind speakers	90
Soundscape extension into the room	90
Imaging	85
Fit and Finish	100
Self Noise	100
Value for the Money	100

Specifications

Output Impedance: not specified – estimated below 300 Ohm RCA for tube amp and headphone, below 150 Ohm CD Audio

Frequency Response: 20Hz to 20kHz

Distortion: <0.002% (1kHz)

Signal/Noise Ratio: 110dB (tube output 102db)

Dynamic Range: 115dB

Crosstalk: <100dB

Output Level: 0~2.2V adjustable

Tube Compliment: four 6N3P, standard Chinese (compatible with WE 396A & 2C51)

Digital System: four 24 Bit Burr Brown PCM1704 DAC, PDM-200 96kHz HDCD Digital Filter, Crystal CS8420 upsampler for 96kHz upsampling

Transport: Philips CDM-1201 with Philips CD7 II servo circuitry

MSRP: from around $2,000 USD, £1,650 incl. VAT

Weight: 12 kilograms Net

Dimensions: 430 X 290 X 65 (LxWxH in mm)

Company Information

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