First... a quick disclaimer: I liked these speakers so much in my bedroom system that I bought the review pair! Read on to find out why! (In the spirit of full disclosure, I was given a reviewer's discount that made them even more attractive.)

I was excited to review these speakers as I use similar speakers in both my desktop system and my bedroom system. My first thoughts after un-boxing the speakers were that they were very well built, well packaged, and quite attractive. The manufacturer refers to these as T1Es and so will I.

A quick read through the user's manual gave me an indication that these had been designed with the idea that the owner only needed to provide an analog or digital source and they had a music system! In reviewing these, I'm not going to list all the options up front, however I will provide more information as I review each of those options.

I used the Quick Start Guide provided by Vanatoo to do an initial set up on the speakers. This was simple and done just a few minutes. Everything worked as the guide suggested. Since I wanted to get a quick idea of what the T1E's sounded like I used the simplest "system" I could think of. I connected my HIFIMAN SUPERMINI player via the unbalanced 3.5 mm analog cable provided by Vanatoo. While the SUPERMINI has both a balanced and unbalanced output, the T1E's have only an unbalanced input. Here's where I discovered some information missing from the Quick Start Guide. I needed to use the remote control and choose the analog input. After that, music!

Playing selections from the TELARC "Chiller" album CD80189, with which I am very familiar, gave me my first impressions. Track 2, Overture to "The Phantom of the Opera" had all of the deep organ notes that I expected to hear. At this point I had not experimented with any of the available settings nor done any speaker positioning. I set them up in my office on the desk facing me at about 3 feet away and roughly 3 feet apart at the tweeters. The back wall was approximately 5 feet back with an open door on one side. I immediately liked what I heard. The speakers were well balanced from bass to treble and very dynamic. I heard a clean, transparent version of music I have heard many times. The balance was somewhat different than what I experience in my current systems; however the speakers were not positioned in the same place as the existing desk top system so no real comparison can be made. However, it was an enjoyable and very listenable presentation. Remember these were first impressions and I had not yet compared them with my office or bedroom systems.

Next I listened to the Bluetooth option using digital files stored on the removable microSD card in my Samsung Galaxy S8 phone. I did the analog and Bluetooth tests simply to ensure that they work. Neither of the systems that I plan to compare them with will use analog or Bluetooth in that comparison. (Little did I know that later I would use the analog input in the bedroom system!)

After creating a microSD card specifically for comparisons, I listened to music from the Samsung Galaxy S8. At this point the connections were all analog using whatever analog section is in the S8. Listening to Camille Saint-Saens "Samson and Delilah", Eiji Oue - Minnesota Orchestra, RR-71CD which I use to understand width and depth of soundstage as well as dynamics and quality of the string and brass sounds I noticed some differences in what I am used to. While the soundstage width was fine, sounds from the back of the soundstage were much farther down in volume than expected. In addition, the strings and brass did not have the timbres I expected.

At this point, I removed the microSD card from the S8 and placed it in the HIFIMAN SUPERMINI. All was once again well. Instrumental timbres were much more correct and the depth of soundstage was back. Obviously the two analog sections are not created equally, but I felt like the T1E's were probably reproducing the signals that they had been provided by the two different sources.

I changed the DSP settings from shelf to flat and re-listened to music using the set up previously discussed. I much preferred the flat setting as the balance of frequencies was much closer to my other

systems and I used this setting for all of the rest of my listening. Music still retained the open top-end but the lower frequencies had more presence and bloom. A passive radiator is a form of ported enclosure. With the T1E's away from the wall, I felt like there was less contribution from the passive radiator than there would have been from a regular port. This changed for the better once I moved the T1Es into the regular position in my desktop listening system.

Next, I compared the S8's analog section versus playback through Bluetooth. It was very easy to set up a Bluetooth connection with the S8. Basically, put the S8 in pairing mode, turn on the T1E and pairing was complete. With the S8, the volume from the digital input via Bluetooth was much higher than the analog input. As the manual suggests, the best approach here is to turn the manual volume control on the T1E down before playing anything through the Bluetooth input.

I was unprepared for the difference made by the Bluetooth connection! I much preferred the sound in Bluetooth mode than the sound from the S8's analog output. I suspect that this may have everything to do with the quality of the headphone amp in the S8. I also think this is not too surprising given the fact that the T1E's are basically a digital device. Analog inputs are first converted to digital prior to being fed into the T1E's processor. All further signal processing, including volume and tone controls are in the digital domain using digital signal processing (DSP). I would even go so far as to say that using the Bluetooth input I was getting a more lifelike sound than that from the HIFIMAN SUPERMINI. The SUPERMINI was much closer than the S8's analog output but I still preferred the Bluetooth signal from the S8 over either analog signal. I know this flies in the face of conventional wisdom which deems Bluetooth an inferior technology, but in this case, Bluetooth wins! The only downside to listening on the S8 is that the music management software that I have discovered on it so far is very basic, with only marginal ability to control the music. If I were going to do serious listening from the S8 I would have to find an application that works better than the one provided by Samsung.

Then I moved to a comparison between my existing office system and the T1E's.

My office system: I play digital recordings in the form of .wav files stored on my NAS drive using Foobar 2000 on my desktop computer. The PC is connected through an iFi Audio Mercury USB cable to an iFi Audio iUSB Power, through their Gemini USB cable to an iPurifier which is plugged into their iDSD nano DAC. The DAC has RCA outputs to the RCA inputs on a set of Emotiva Audio Airmotiv 4 powered monitors. Using the output from the NAS and Foobar2000 as the playback software on my PC, the Airmotivs are way better than average PC speakers, providing me with a reasonable idea of what the music will sound like on my main system. While I normally keep the volume low when sitting at my desk, this system can play loud enough to be heard throughout the second floor of my home without strain or distortion.





For a couple of weeks I listened to the T1Es in my desktop system. Normally, the digital input to the iDSD was decoded by that device and the analog output sent to the Airmotiv 4s. I broke the connection at the input to the iDSD and using the iFi string mentioned above went directly into the digital input of the T1Es. So basically, the T1Es had the same digital input that was going into the iFi DAC and being sent to the Airmotiv 4s. There was a definite difference between the sound of the T1Es and the Airmotiv 4s. There is no way to know whether or not the DAC in the T1Es is better than the DAC in the Airmotiv 4s. I suspect however that since the DAC in the T1Es is far more recent than that in the iDSD that at least some of the difference is due to the newer DAC. That said however, I was somewhat surprised at the difference in the two set ups. I have been using my current set up for several years now and liked it because listening to my digital music files over these speakers gave me a pretty good clue as to what they would sound like on my "big" system. I really wasn't prepared however for the difference made by the T1Es. They sounded closer in nature to the big system. Okay, they didn't go as low and maybe the midrange is a tiny bit less wonderful, but all in all they sounded much closer to what I'm used in the big system. A few of the things that really struck me in comparison to the existing desktop system included more lifelike dynamics, better inner detail, and better, more articulate bass than the existing desktop speakers could do. When listening to my main system the emotional content of the music will occasionally cause me to tear up a bit. Those of you who have heard my system can understand why I say that. What I was totally unprepared for with the T1Es was a similar ability to communicate the emotion in the music. I found myself listening in the same way I do in the basement! Another thing that really impressed me with the T1Es was their "power balance". "Power balance" is a term I use to indicate that regardless of the volume setting of the speakers the balance of treble and bass remains the same. I'm sure that all of us have heard speakers where we needed to raise the volume in order for the bass to truly be heard in balance with the treble. Regardless of the volume at which I was listening to the T1Es, the balance of bass and treble remained the same. This means that even a listening at low levels you will hear music balanced the way it should!

Figure 2 - T1Es on the desktop



Earlier, I was very impressed with how much better the Bluetooth output from my S8 sounded than the analog output. My desktop PC, while relatively robust, was purchased at a time when desktop PCs rarely had Bluetooth capability. After listening to music over the USB link using my PC, I wondered how Bluetooth would sound. Some of my friends have been telling me that the newer Bluetooth software (aptX, which both the Samsung S8 and the T1Es have) compares very well with wired sound.

So, I purchased and installed a Bluetooth adapter on my desktop. Took about half an hour to install and figure out how to get Foobar 2000 to play back over both USB and Bluetooth. The neat part about it is all I have to do in Foobar 2000 to switch between the two outputs is simply select either of them in Foobar 2000's configuration menu. Now to explain how easy this is and how I can make certain I'm listening to the correct signal in the T1Es I have to tell you about the T1Es input selection. Normally, I would leave that input selection in Auto mode. If that were the case once I changed the selection in Foobar I wouldn't be sure which input I was listening to. The designers of the T1E however must've anticipated situations like this because they also gave us an option to select manually each of the inputs! And, by the way, you can change inputs using the rather full-featured remote! To make a long story short, I listened to one of our favorite pieces of music by the Dallas Wind Symphony, Oliver Reed's "La Fiesta Mexicana", track one, Prelude and Aztec Dance from RR-38CD. I'll be darned if I could tell a bit a difference between the two input types. As far as I could hear there was no difference! And, even better, the drum whacks were dynamic and moved air in the room similarly to what they do in my basement. The soundstage was wide and deep, in spite of the fact that they were sitting on my desk in an environment that is not conducive to a good soundstage! I have provided a picture of this set up.

I put my original desk-top system back together again. After a couple of hours of listening to the same music that I listened to on the T1Es, I have some further thoughts about how they compare to the Airmotiv 4s. Both set ups provide very listenable music but there are a few differences although not as significant as I originally thought them to be. The T1Es are a tad bit more dynamic with bass that goes a little lower and is slightly tighter. That bass quality also is more lifelike. The top end of the T1Es is slightly brighter, although nowhere near hard sounding, providing a little more detail especially in terms of soundstage depth.

After changing back, and listening for a while, I discovered that I had been using the PC's RealTek drivers instead of the iFi drivers. When I switched to the iFi drivers, bypassing the internal PC audio card, the differences between the two setups was considerably reduced! The following paragraph reflects my final conclusions regarding what I heard.

In comparison, the Airmotiv 4s with their smaller woofers don't go quite as deep with just slightly less in the way of dynamics. The best way I can describe the difference in the bass on the two systems is to say that the Airmotiv 4s are a little restrained in their dynamics compared to the T1Es. Overall the Airmotivs are slightly darker sounding than the T1Es. One area though where I felt the Airmotivs held their own well was in the quality of the treble. I noticed, especially on female voices having a slightly nasal or hard edge, that the folded dipole tweeter in the Airmotivs provided a slightly sweeter sound. It's not that the T1Es tweeter was hard sounding at all, but it did tend to emphasize a nasal or hard quality in a female voice. Female voices sounded a tad sweeter on the Airmotivs. I'm not sure which was actually closer to correct, but the Airmotivs did make some recordings more listenable.

In summary, I didn't feel any need to replace the existing desktop system, however I also know that the T1Es did some things that I really liked and they were certainly more convenient to set up and play. I especially liked the remote control allowing me to sit back and enjoy music in my office while controlling the volume without having to move out of my listening position to manually change the volume level as I do on the iDSD! As far as desktop systems go I highly recommend them to anyone who values high-end sound quality available while working!

My Bedroom System:

Digital Playback of CD/DVD-A audio and video is from Philips generic DVD Player using RCA interconnects to a Denon AVR 598, 5.1 Receiver. Digital playback of files from my NAS use a Logitech

Squeezebox Touch connected to the Denon via a club designed SP/DIF cable. The Touch is using the DAC built into the Denon receiver at 24/96 Wave as it sounds better than the Squeezebox's own DAC. The output from the Denon goes to a lovely pair of Dali Zensor1s through a set of the club designed silver-over-copper #10 awg speaker cables. The system is aided on the low end by a cheap 8" Pioneer sub which is set to a relatively low frequency cutoff at a low volume level. It DOES NOT interfere with the low end on the Dali's which is somewhat better than expected for such a small set of drivers. I can also listen to the music service provided by Comcast Cable (I think only mp3 quality but convenient and lots of music choices) as well as the music services provided through the Squeezebox Touch! I use the TV as a monitor only and the video is connected from the Comcast set-top box via an HDMI cable. The audio for the TV sound is an analog output from the Comcast set-top box into the Denon.

The first benefit of the T1Es was to simplify changing between inputs. For all the different input options, as many as six remotes were needed. The use of the T1Es cut the total number of remotes back to four and made changing over much simpler.

After listening to some of the selections previously used on the desktop review in the bedroom system, I switched over to the T1Es. I removed the Dalis from the stands and replaced them with the T1Es, connecting them together using their umbilical. I moved the Squeezebox's SP/DIF cable from the input to the Denon to the coaxial input on the T1Es. I then disconnected the Pioneer sub-woofer and I was ready to play music on the T1Es!

I re-played the same tracks that I had listened to earlier using the T1Es. The difference was remarkable. I have never been able to get the adjustment on the Pioneer sub where it exactly met the low end of the Dali's right. The Pioneer sub provided bass extension and slam that the Dali's couldn't provide by themselves. While the Dali's have good extension for such small speakers I felt like I needed more. Hence the Pioneer sub. The closest I could get in adjusting the subs still left the upper bass feeling neglected. I never did succeed in getting what I felt was a balanced output from bass to treble. I always felt in that frequency range something was missing, however I liked the results better than simply playing the Dali's by themselves.

I immediately knew that the T1Es had made that problem a thing of the past! The frequency response in my room was now balanced from treble to bass for the first time. I had the bass extension and slam that I had been looking for in the past without the "missing" upper bass. In addition, the midrange was now cleaner and more open sounding. Even the upper frequencies now appeared to be more open and detailed. The soundstage in the room was now wider and deeper and far less affected by the presence of the huge entertainment center between the speakers.

So now I'm left with trying to understand why the T1Es were so much better. For instance, I know that the Dali's are highly resolving and dynamic for small speakers. I know how good they are because I've heard them in other high-end systems sound absolutely stunning! That's why I purchased them to begin with. After some thought, I suspect three things kept them from performing at their best in this set up. First, I suspect that the use of the sub in the system tended to blur the midrange in the Dali's. This is probably why I was unhappy about the balance in the system. Second, I think the DAC in the T1Es is much better than the much older DAC in the Denon receiver. Third, I suspect that the amp in the T1Es is a bit cleaner than the Denon.

Next I connected up TV playback through the T1Es. Because the T1Es don't have a second coaxial SP/DIF input, I used the optical output from the Comcast set-top box to the optical input on the T1Es. It worked perfectly. Now using the remote for the T1Es I could select between TV audio and the Squeezebox. For the next month I played music and watched TV using the T1Es. It was without a doubt the best sound I have ever had in my bedroom. Comcast provides a number of music channels

and I listen to those channels every night. They put me to sleep! Music does that to me when I'm tired.

Last, I connected the Phillips DVD player to the T1Es using club designed RCA cables from the DVD player to an RCA to 3.5 mm phono jack adapter to the analog input in the T1Es. I would have preferred to use a digital input on the T1Es but there wasn't a spare one available. Not surprisingly, even analog input sounds great through the T1Es. I listened to the CDs of a couple of the digital files I had previously listed to and they confirmed that the sound was close to that of the digital files.

By now I am sure that you have figured out that I had to have the T1Es! I now had a bedroom system that far exceeded any expectation I had of the T1Es when I started this review. I had decided that if my wife didn't shoot me I would buy them. So, I emailed the guys at Vanatoo and told them that I was holding the T1Es for ransom and I would pay that ransom! They weren't going to get them back and all I needed was to be told how much ransom I had to pay! They gave me a number, I liked it, I paid, and now they are mine.





CONCLUSIONS:

If I were starting from scratch to build a two channel listening system for an apartment with limited space for the equipment, I would definitely take a look at these. There are 5 usable inputs, four digital (including Bluetooth) and one analog. There is a high quality built-in DAC and amps that are matched

to the needs of the drivers used. No need to deal with a stand-alone DAC/Preamp/Amp and associated cables. Provide source components and you are ready to go. These source components include but are not limited to CD/DVD/Blueray player, PC, Tablet, Smart Phone, Portable Audio Player, Streamer, TV set-top box, and more.

They will make a very enjoyable desk top system for your work office or a home office. They can be used in a two channel bedroom system including your TV sound. They can even function as your main system as long as you don't have more source devices than they have available inputs.

The question is will you be happy with the music these make? My guess is... very happy! They provide a clean, open, detailed full range sound and make beautiful music. They can play loud without strain or distortion and the low frequency output is actually deep enough that organ music doesn't disappoint. You already know that I highly recommend them... I shelled out my money for them and I don't ever do that unless I am sure that they are a great value! Even at the full list price of \$599.

If you are in the market for a second system or even a main system that needs to be compact yet full range, these are an absolute must for your consideration!

John Morrison