I was born in Johannesburg , South Africa and grew up in a middle class suburb (cities in USA). Lived a pretty normal childhood until IT happened. At the age of about ten, I was with a childhood friend who was born on the same day as I was and we were at his house one day.

When his older brother told us to come into his bedroom to see something. Well this something was to change my life. In his bedroom he had one of those table top tube AM radios (FM had not arrived in South Africa at that time), and he had removed the internal speaker and mounted it on the ceiling of his bedroom at the point where two of the walls met. By turning the volume knob on the radio he was able to adjust the level in the loudspeaker. I was in awe! Imagine turning a knob on the radio and the sound came out of a speaker 20 feet away. I had never seen or heard this before.

When I arrived home that evening, I immediately went to my Aunt, who lived with us, and begged and pleaded with her to hand over her small table top AM radio. Well she finally gave in and I had my prize. Now remember at this time I had no idea what a resistor, capacitor or tube was or did. All I knew was that I had to remove the speaker thing and put it as far away from the radio as I could. By the way these tabletop radios did not have isolation transformers instead they used high voltage tube filaments which were wired in series across the 220v mains supply. Also the chassis was live if the power cord was reversed and I found this out the hard way. I begged, borrowed and stole some surplus copper wire from various sources and then proceeded to connect the wires in the radio to the terminals on the speaker. No soldering iron at this time so twisting was the order of the day. At each join I simply used scotch tape to keep the joined wire pieces from moving around. At this time I had no idea what insulation tape was. Turning on the radio for my first test was a big disappointment. No sound came out of the speaker. After much frustration I finally figured out that at each join it was not a good idea for the speaker wires to short to each other!

Progress at last.

Next test was successful. Calling my Mom, Dad, Sister and Nanny into my bedroom I showed them my sound system. I was so proud. Well the true engineer was now born within me. I was soon bored with just this one speaker and started scouring friend's houses for discarded radios and radiograms (those things with an AM radio and a 78RPM turntable all in one piece of furniture, kind of looked like the JBL Paragon speaker system). Soon I had about seven or eight speakers all wired up and the sound was awesome (speaker impedance was at that time something I was not aware existed).
I added a small 3.5 inch reel-to-reel tape recorder to the system, (which a good friend of my Dad had donated to my cause) and then built a complete console which housed the original AM radio, the tape machine and about a dozen toggle switches which controlled about a dozen different coloured lights located in strategic positions around my bedroom. The place looked like a house of ill repute by the time I had finished. I was able to switch over the complete speaker system from the radio to the tape machine with a switch so I could listen to either
Well progress had to be made and I heard about a thing called an amplifier. I read some books and started learning about amplifiers. I had a friend whose Dad owned a

radio repair shop and so with my life savings of nine bucks, I bought the necessary parts to build a 3 watt mono amp. I had rather rudimentary tools and so I built the first one using pressed wood as the chassis. It worked first time but the hum was probably louder than the music. Further reading brought me to the conclusion that a metal chassis was required. Off to the kitchen to hijack a metal tin which housed four pounds of Bakers English biscuits. I persuaded my Nanny to put the biscuits in another container. The tin was made of tin (no pun intended) and so was pretty easy to cut. I rebuilt the amplifier on this and it worked like a charm.

At this time I began reading as many technical books as I could get my hands on. Ohm's Law became second nature to me.

Woofers, midrange and tweeters were soon a well-known idea to me and stereo was my next project. I built a 10-watt per channel Mullard circuit, but now used chassis bought from my friend's radio shop. Progressed to a 20 watt per channel and then my interest in radio transmitters began. My best thing to do was to broadcast Rolling Stones (my all time favourite band) music over the FM band. I had three and four Kilowatt transmitters running with a huge antenna hanging out of my fourth floor bedroom window (at this time we had moved into a flat (Apartment to Americans).

This was 1966 and I started to design my own amplifiers.

1968 was the year that I switched from tubes to solid state amplifiers. Quad and Dynaco were popular but were not very powerful. So I began my quest for power.

The arrival of the Crown DC300 pro amplifier rated at 150w per channel gave me inspiration to design.
One hundred watts per channel, one hundred and fifty watts per channel were the order of the day. The owner of an electronic spares shop downtown Johannesburg became interested in me and I was soon building these powerful (for their day) amplifiers for his store.

Graduated high school 1968 spent a year working and messing around until I started University in January of 1970.

1969 was the year in which I was supposed to go to the army for my 9 months of compulsory military service. I squirmed my way out of that one and this gave me a year to really learn a lot about amplifiers. I gave up on my High Current Electrical degree at University after one year as they were teaching me a lot about nothing. A friend, who actually completed the 5 years at University, told me that he knew less than me after those 5 years and wished that he could have done what I had. I went to college to study pure electronics. This was a four-year course, which included 2 years of hands on training. The first two years of theory was breeze for me, as I already knew this stuff from own studies. I wanted to leave but my folks insisted that I get "the piece of paper".
After college the United States Government offered me a job at the Hartebeeshoek Space Tracking Station. (I know that you may get your tongue in a knot trying to pronounce this Afrikaans name so do not even attempt it!) This was great as you

worked 4 days on and then 4 days off. The problem was that the station was in the middle of nowhere and the pay was awful. So I refused the job.

Then the CSIR (This organization is like the UL/CSA/EPA all rolled into one and they govern everything that could be made and sold in South Africa), offered me a position as a research engineer. The pay was 220 bucks a month out of which they took medical, tax and some other deductions, which would have left me with 160 bucks a month. "No thank you" I said!
I took a job at a Sanyo factory repairing the cassette machines as they came of the production line. After 3 weeks I was bored and started my own company.

I decided to get a Bachelor Of Science degree through UNISA which is the largest correspondence university in the world.
I built mainly professional gear, including mixing consoles, compressors, limiters, equalizers and of course my all time favourite, amplifiers.

January of 1972 I began the design of a 1,500-watt per channel 8 ohm home amplifier. This took me 18 months of work and finally in June of 1973 it was complete. It utilized a 5.5 Kilowatt power transformer and used thirty two, 250 watt TO-3 power transistors per channel. This represents a total of 8 Kilowatts of output capability per channel. The beast weighed in at just on 91 Kilograms (220lbs). My mother decided to nickname the amplifier Baby.
Baby remained its name until a few years later when I replaced the twin VU meters with twin 32 segment LED displays and replaced the original silver front panel with a back version. The amplifier then had a name change to Leviathan. I sold the amplifier just before I immigrated to the States in 1983. So from 1972 until I left South Africa in 1983 I built professional gear almost exclusively.

From 1971 I became in involved with live sound re-enforcement. A friend and I started a company which, hired out me as the audio engineer and the equipment. We started with smaller venues and as we added equipment to our systems, we progressed to larger and larger venues. This business grew so quickly and the fact that I traveled a lot, meant that I neglected my small manufacturing business. I did this for 4 years and then decided to quit and concentrate on the manufacturing 100%. I did get to meet quite a few English and American rock and rollers but the highlight of this part of my career was meeting the late Elizabeth Taylor when she appeared along side the American all girl group, The Three Degrees. This was in fact a one night gig. I will never forget meeting Miss Taylor and seeing those perfect features and her violet eyes (Yes violet - no contacts).

During 1975 I was awarded a contract to install sound equipment at the newly built Baxter Theatre at the University of Cape Town. Since I lived in Johannesburg , which is 2 hours flight time from Cape Town, I was constantly shuttling between the two cities for the next year. It was quite an achievement to design and install sound systems in two adjacent theatres. In addition I designed all the communications gear for stage managers to communicate with dressing rooms, ticket office, theatre manager etc. This took me almost one year to complete.

1976 I decided to take a course in Television design and completed this in about 6 months but my basic knowledge of TV now is to take the remote and turn to the channel I want to view!

The most sophisticated project I undertook was the design, manufacture and installation of a simultaneous language translation system in two adjacent conference halls at the above mentioned CSIR headquarters in the capitol city of Pretoria . The first conference hall housed 500 delegates and the second 120. Each seat had a microphone and a control panel. The delegates could select any one of four different translations of the spoken language in addition to the spoken language. The translation booths each had 4 seats for the translators. Each seat had a control box, which was in fact a simple analog computer. This project consumed another 9 months of time.

1972 when I fitted a small cassette machine to my Toyota Corona and built some small amplifiers using a famous pair of Germanium power transistors. (4 watt per channel was the order of the day).

Late 1975 I purchased my first BMW car, a 5 series 525. I had taken a real interest in car sound at this time.

The BMW was my first real attempt at some decent sound in the car. My home stereo was already at the top of it's game with open reel Teac machines, Nakamichi cassette machines, fancy turntable, custom preamplifier and of course Baby/Leviathan. I wanted more power than the measly 4 watts and so I resorted to some early Pioneer amps, which delivered a true 18 watts per channel. Subwoofers in a car were still down the road and so 6x9's on the rear deck and 6" coaxials in the front doors along with Pioneer TS3 tweeters were quickly installed in the BMW. A highly modified Teac car cassette machine was added and the highlight of the system was a 5 band graphic equalizer with a homebuilt Dolby type B noise reduction preamplifier. At that time Dolby was not available in car cassette machines.

1978 and I sold the 525 and purchased the new 7 series BMW, a 728. (Hated this car and kept it for 365 days due to it being silver!) Again subs were not around but Dolby cassette machines were. I again built a custom preamplifier for the centre dash. This had 14 band graphic equalizer, volume, fader and balance controls. I had begun building car amps for the home market by this time under the name Titan. I built two versions, a 60w/ch and a 100w/ch. They sold like hot cakes, as there was nothing remotely close. The only imports were the Sanyo, Jenzen and Fosgate amplifiers. They were much more expensive due to the 45% import duty. After selling the BMW 728 I traded up to the 733i and simply transferred the system over but added more powerful amplifiers at 200 watts per channel (at that time an unheard of item anywhere in the world)

1980 brought me to America to see my first CES show in Chicago . This was indeed an eye opener for me to see so much gear all in one place.

A funny thing happened, I met an old acquaintance, Helmut Stieglitz, at the Visonik booth. He had lived in South Africa and came to the USA in 1977.

We got to talking about car sound and he was really amazed at what I was doing back home. He told me that he wanted to leave Visonik/Alphasonik and start his own company.
A few trips back and for from South Africa to the USA and I began manufacturing car amplifiers under the name of Hifonics.
This name was not a really high-end sounding name after all and so I sat down one Saturday at the factory and put a little thought into it.
I had a professional line of amplifiers on the local market and instead of model numbers, I gave them names. My 800 watt pro amp was called CYCLOPS.
The half power version was called, you guessed it, SON OF CYCLOPS.
So out came the Greek, Nordic and whichever other ancient culture I could think about and I wrote a whole bunch of names down.
I presented my ideas to Helmut who endorsed them enthusiastically and I began the design of these amplifiers.
This is when Vulcan, Odin and Thor were born. These were the first three amplifiers, which I built for Hifonics. 40w/ch, 60w/ch and 100w/ch were their power ratings.

I had been making plans to come live in the USA for many years and Helmut knew of my plan. He begged me to come and live in New Jersey, where he was based.
The East coast had no appeal for me and I told him that I would live in Southern California.
On arriving in the USA in August 1983 we began a small manufacturing company Zed Audio Corporation which I had formed more than a year prior to my 1983 arrival.

We started building the second generation of these first three Hifonics amplifiers and added the fourth called Zeus.
Zeus started out as a 200w/ch and when Zed ceased manufacturing for Hifonics. In 1994 it was a 350w/ch.
Zed and Hifonics started growing like wild fire since we were producing equipment which was ahead of it's time and nobody could compete with Hifonics in sound quality or power.
At the January CES in Las Vegas I used my then new BMW 735i which I had brought with me from South Africa, to show off the Hifonics equipment.
It was a hit. Two 12 inch Becker subs, a host of Dynaudio midrange and tweeters and of course 5 Zeus amplifiers.
For this car I had made a new preamplifier, (which I still have today after I sold the car) which sported a 14-band equalizer, 4 channel 10 segment LED displays,
Volume and fader controls and a DBX unit. I always preferred cassettes to CDs as I wanted to record my own music especially that from my vinyl collection.
I used I highly modified Pioneer KEX70 head unit and later switched to a Clarion. The noise performance with DBX was pretty close to that of a CD.

After the show we could not keep up with incoming orders, remember we were a small company with only 3 people.
We began building for Autotek in 1985, then for Rodek then Lanzar in 1988.
Also built some high end amplifiers for Alphasonik in the mid eighties. Built for Planet Audio/Boss from 1997 to 2000.

The first Crunch amplifiers were built in the early nineties. These were really bulletproof amps but we ceased their production as they could not pay us what they owed.

ESX was conceived in 1995.
1996 and we built only one run for them and then they went belly up due to Richie Howard taking money from me and using it for his living expenses.

The amps I designed for ESX were way too advanced for the car stereo market.

The 4 channel amplifiers could be converted into single mono blocks as one of their features.

Built Cadence amps for about a year in the mid nineties but that did not work out at all. We do not build for those above-mentioned companies anymore as they have either gone bankrupt or have their stuff made in the Far East.

During the nineties we built high end home amplifiers for Harman Kardon. These were 4 channel THX certified units called the CITATION 7.1 and 5.1.

Polk was one of our customers and we built home theatre 7 channel amps for them. They have since moved their manufacturing all to China.

From 2000 to 2004 we moved away from car stereo and built specialized home and professional equipment.
We designed a range of high powered multi channel modular amplifiers for the professional paging market. These amplifiers are all microprocessor controlled with Cobra ethernet connectivity. They feature full Power Factor Corrected switch mode power supplies, full range class D amplifiers from 75w per channel to 1200w per channel.
Basically all the knowledge I have in designing equipment is self-taught. I read a tremendous volume of technical stuff and I have gone back to my roots being tube amplifiers.

It is now 2017 and much has transpired since the above was last written.

I do a large amount of consulting and design for other companies and have been doing service for both car and home amplifiers as people have a tough time getting their amplifiers serviced reliably.

Many companies will not service their older LEGACY amplifiers and so we have a thriving business servicing these older units.

Another facet of Zed is the restoration of old school amplifiers especially those which we manufactured for Hifonics and Autotek in the 1988 to 1994 period.

Restoration of vintage home equipment is also a growing business as people have realized that with some TLC, upgrading of parts and some re design, these vintage

beasts come alive and are very competitive in terms of sound quality with modern day equipment and at a fraction of the cost.