

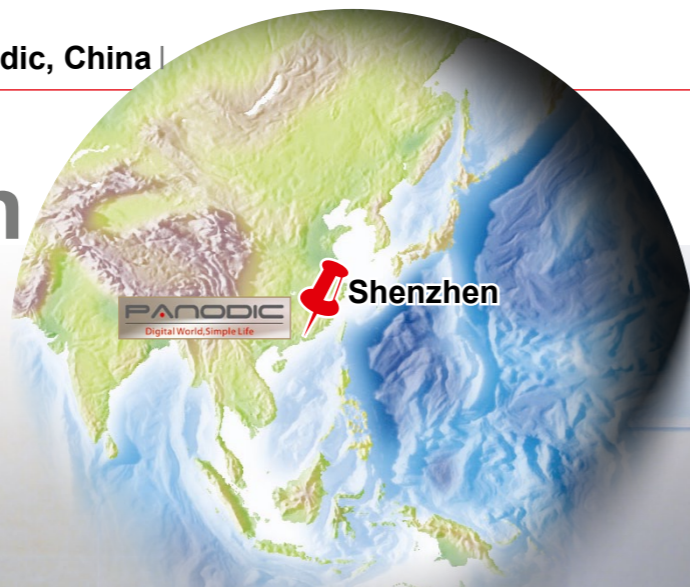
■ The administration and R&D teams of OEM/ODM manufacturer Panodic can be found in the futuristic Grentech Building in Shenzhen's High Tech Park.

# One of the Top Five: Panodic

- Multiple quality control points before, during and after production
- Concentrating on digital TV products
- Cooperating with many license providers
- Continuous product palette expansion



# The Big Expansion of Panodic



■ **Company founder:** You Zhen Yu. He and two other partners founded MICO in 1999 and Panodic in 2003.



In 1999 three technically enthusiastic young entrepreneurs founded the company MICO in Hong Kong. Their first product: a DVD player. Since then they have gotten larger and larger so that today they are one of the top five receiver manufacturers in China with more than 1200 production employees and over 100 R&D engineers. The technology and marketing departments are located in the Shenzhen High Tech Park; the production facility is only a half hour car ride away in Fuyong in the Bao'an District. We paid a visit to both facilities to see for ourselves how Panodic managed to get this far.

So, obviously the first question is this: is the company name MICO or Panodic? Marketing Director Alan Yu has the answer for us: "The company MICO Hongkong still exists and is the parent company of the Panodic Group. MICO has its headquarters in Hong Kong and that's where you'll also find the Panodic Group's financial management and logistics."

Panodic itself was founded in Shenzhen in 2009 and sold their products under this name to the local market in China. The company's products are also exported under every possible brand

name, just not the Panodic name. "We export as an OEM and ODM manufacturer and don't use our name at all."

In addition to the production facility in Bao'an, the Panodic Group also includes a branch office in Beijing. "20 engineers work there primarily on our IP receiver's software. The domestic sales team can also be found there." For the Chinese market, Panodic offers primarily DVB-C and IPTV receivers. "TV and Internet are constantly merging closer and closer together; we are integrating Internet services with our DVB-C receivers."

Panodic started exporting their DVB products in 2005. "The first receiver that we manufactured for export was a DVB-T receiver for Great Britain", remembers Alan Yu. That was also the time that Panodic expanded into the then new receiver business. "Panodic's R&D engineers have accomplished quite a bit in just a short time: "We're introducing a new combination receiver for DVB-S2 and DVB-T as well as for DVB-S2 and ISDB-T." A Linux-based IP box was also completed just now.

"An interesting niche is DVB-T modules for reception in a car." This module with DVB-T/MPEG4 is connected to

the DVD players video screen in the car." Rear seated passengers can use a remote control to change channels while the car is in motion." The driver of course is looking out the front window at the traffic. Panodic is planning to make this product available in the first quarter of 2012.

"We're also working on projectors", said Alan Yu surprisingly. Sure enough, in these days of HD there are more and more viewers interested in TV projectors. "A projector really makes HD beautiful", he comments and then promises, "The first samples are already completed with production set to begin in the second quarter of 2012." 3D can't be all that far away then. "In the third quarter of 2012 we'll also be introducing receivers with integrated 3D converters."

Where can you find Panodic's products? "In 2011 we still only sold about 10% of our products domestically here in China. The remaining 90% were exported. In 2012 it will shift to about 20% domestic and 80% export." Alan Yu is expecting to see an increase in DVB-C as well as ABS, the Chinese digital satellite TV standard.

But the Marketing Director is con-



vinced that exports will also pick up: "With our new DVB-T2 and DVB-S2 receivers we will increase our market share and the upcoming football world cup will increase ISDB-T sales in South America."

It's becoming clear that Panodic is



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not a manufacturer that produces only when there are orders; they are continuously active in further development. "We are cooperating with many industrial partners, such as, NDS, Conax, SuperNovelTV as well as chip manufacturers ST and Ali. We've also received licenses from Sisvel DivX and Inview." Inview is a provider of EPG information and Internet-based additional data such as IPTV. Thanks to the appearance of more and more hybrid receivers, the integration with the Internet is moving more and more to the forefront.

And that's how Panodic managed to work themselves up into the group of top five manufacturers in just a few years. From the original three-man founding team the company has grown to over 1500 employees and there's no end in sight. Alan Yu: "We are constantly working on designing and developing higher quality products. This includes, above all, hybrid receivers." These are receivers that are mostly interesting to operators.

The expansion of their product palette suggests that Panodic will continue to climb higher in the ranks of top class companies.



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1. Huang Wei is one of the founders of MICO/Panodic. He takes care of the strategic orientation of production.
2. Xu Hai Bin is Panodic's CEO. He's in charge of the company's daily operations and can reveal to us: "In 2011 we achieved sales of 70 million USD and in 2012 we're expecting an increase to 100 million USD."





■ Receptionist Yan Jing greets visitors in the lobby

■ Panodic's Marketing Director is Alan Yu. He is a loyal reader of TELE-satellite.



**PANODIC**  
Receiver Manufacturer, China  
www.panodic.com

**Company Details**

Engineers in Research & Development | Total Number of Employees  
0 ..... 1000 ..... 2000

Average Turnover (Previous, This, Next Year Estimates)  
0 ..... 50 ..... 100 Mio US\$

Production Certificates  
RoHS, DVB, EMC

Production Categories  
OEM

Main Products  
Receivers for DVB-T/T2, DVB-S/S2, DVB-C, ISDB-TB, IPTV, DVD Players, Projectors

One of the Top Five: Panodic

www.TELE-satellite.com/TELE-satellite-1011/eng/panodic.pdf





**Sales Team**

1. A look at the Sales Team. The employees from here correspond with customers in Europe, The Middle East and Southeast Asia. As an OEM/ODM, Panodic does not manufacture products under their own name, but they ship products under the customers' brand name to their corresponding countries.  
2. Jessica is one of the Sales employees. She covers the CIS region and central Europe.



**R&D Team**

3. Do not disturb! Employees are working in deep concentration here. This is the IPTV R&D Team. A total of 30 engineers work in this department.  
4. Panodic sells DVB-C receivers within China under their own brand name. Alex Li is in charge of the DVB-C R&D Team and makes sure that the 16 engineers on his team continue to enhance the DVB-C units and equip them with new features.  
5. The engineers here in the DVB R&D Team are working on the further development of DVB-T2 and DVB-S2 receivers.  
6. Two engineers are working on a problem with a CI module.  
7. Finally, the practical test. Software solutions are put to the test here.





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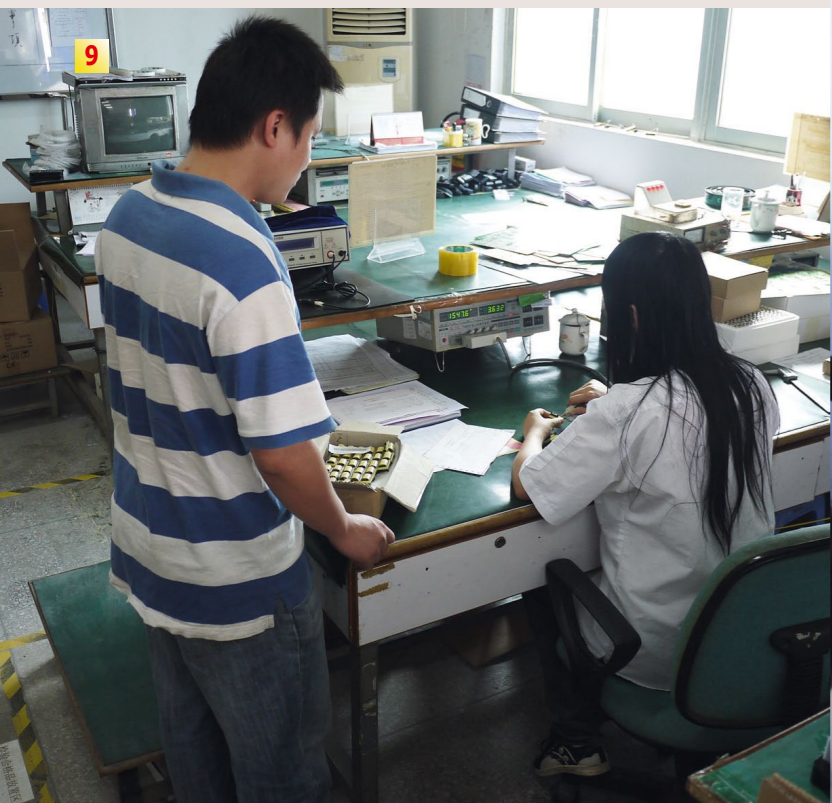
## Receiver Production

8. In this building in Bao'an, not far from the Shenzhen airport, you'll find Panodic's production facility.

9. Delivery control point: Samples of electronic components are checked here against their technical data. 14 quality control inspectors are at work here.

10. The heart of every receiver is stored here: the chipset. The chips arrive in a vacuum sealed package. As soon as one of these packages is opened, it has to be immediately placed in this environmental chamber and kept between 18-28°C. An inspection team worker regularly checks the built-in thermometer.

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## Receiver Production



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11. You can't do anything without the circuit board. SMT machines install surface mounted components on the circuit board. Eight SMT lines are in place here. Zhou Bo is the Manager of this department: "We work daily in two eight-hour shifts and produce 24,000 circuit boards with 90 employees."

12. The AOI (Automatic Optical Inspector) checks that all the components are correctly mounted on each circuit board.

13. After all the surface mounted components have been installed, the larger components have to be mounted. Four AI machines (Automatic Insertion) have been operating here since 2011 with more to be added soon.

14. The software is loaded onto the chip here. Two chips can be flashed at the same time, a process that takes about 20 seconds. Two machines operate in parallel. These machines are also new for Panodic; before that the chips were each loaded manually in the programmer.

15. Manual component assembly takes place here. Eight assembly lines are in operation here and Chen Yi Jiao is one of the Manager of this department: "310 employees work here. At the moment we are working one daily eight-hour shift."

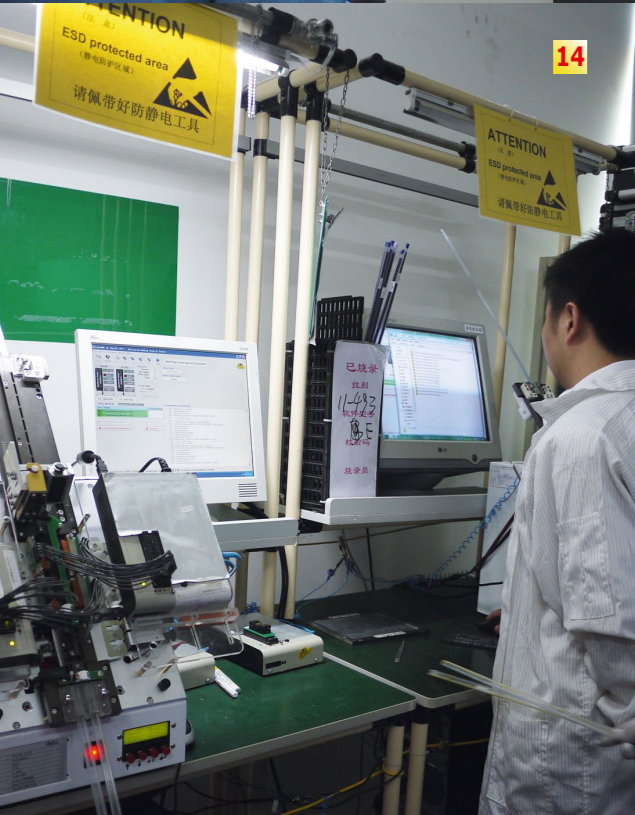
16. At the end you have a complete receiver. 10 of these assembly lines can be found on this floor in the Panodic production facility. 450 employees work here.

17. The first station after a receiver is manufactured and before it leaves the factory is where a receiver is "burned in" for a total of four hours; in other words, the receiver is powered up and put into operation.

18. A look in the storeroom. It's 2200 Sq-meters in size and made up of two levels.



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## Testing Technology at Panodic

19. Only larger manufacturers like Panodic operate their own EMC chamber. The receivers are checked here for any electromagnetic radiation and tolerance. A Panodic employee is seen here placing a receiver in the 2.5 x 4 meter chamber and getting ready to start the test program.

20. 10 inspectors perform production quality checks. Here we can see an engineer checking a receiver taken straight from production.

21. The function of the software is also checked. An employee is seen here verifying that the receiver's menu screen is correctly displayed.

22. Can Panodic's receivers also work in higher outside temperatures? Panodic's quality control department constantly verifies a receiver's technical specifications. Sample units are taken out of production and checked for heat tolerance in this chamber. The receiver has to function correctly for four hours at 50°C. The TV monitors are directly connected to the receivers and show if the receiver in the chamber is working properly. Panodic has two of these ovens.

23. What's true for heat is also true for cold. These refrigeration chambers cool the units to 10°C. And just like before, the receivers have to be able to withstand four hours at this temperature and still work correctly in order to comply with its technical specifications.

24. A saltwater spray is also available to the Quality Control team.

25. What happens if a receiver is dropped? With this drop-testing machine quality control inspectors can check to see if the receivers meet the requirements.

26. Production samples are checked with X-rays.

27. John Dai is happy! He is Panodic's Quality Director. With his 16 inspectors and a supervisor he is responsible for quality control.



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28. This employee packages Panodic receivers that are sold domestically.

29. The receivers function is not the only important aspect; its design must also fit. One of the 10 employees in the Design department is working on making this HDMI stick visually appealing. A test report on this device will appear in an upcoming issue of TELE-satellite.