

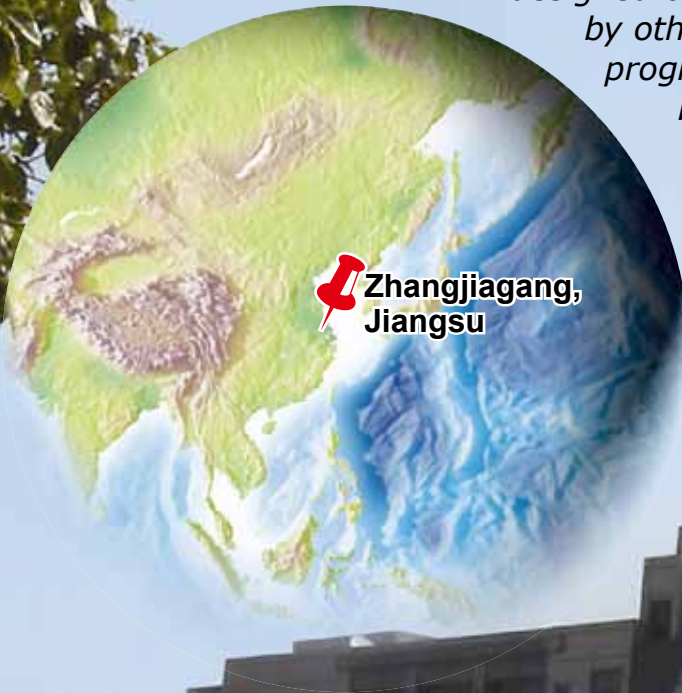
Organized for the Future

Receiver Manufacturer YINHE

Presents Their Factory

Alexander Wiese

Chinese high volume manufacturer YINHE is one of the top five producers in China. Although this company is well known within China, it is only the insiders that recognize the name YINHE outside the country since abroad it is only an ODM. In other words, the YINHE designed boxes (Original Design) are marketed by other companies, primarily dealers and programming operators, under their own brand name. YINHE therefore is just the manufacturer (hence ODM) and for the time being it will stay that way. There are no plans for YINHE to dive into the export market with their own brand name. What does it look like inside one of these high volume manufacturing plants? TELE-satellite wanted to find out.



The enormous 280,000 square-meter production site is located in the city of Zhangjiagang in the Jiangsu province roughly 100 Km north of Shanghai in eastern China. Here, in addition to the four-story administration building, you'll also find multiple fabrication buildings.

During the tour of the facility, Jianbiao Zhu, Overseas Marketing Department Manager, told us there are a total of 1500 employees, 1100 in production and 400 in administration. "Last year we had 1200 employees but in 2010 we added 300 additional employees", he explained to us. Business seems to be booming at YINHE!

YINHE was founded in 1975 and at that time it was a state-run company that had the goal of producing China's first memory chips for use in the large computer systems of that time. "It all started with 50 employees", Jianbiao says as he looks back at the old days.

In 2000 the ownership structure changed and it became a privately run company made up of 40 share-owners. "But all of that could possibly change", reveals Jianbiao Zhu, "We're planning to go public this year on the Shenzhen stock exchange." The goal is to acquire additional capital for expansion.

So, what do YINHE's sales figures look like? "For 2009 our receiver products had

sales of US\$ 80 million while the remaining product groups produced sales of US\$ 30 million", says Jianbiao Zhu. He continues, "In 2010 we are expecting an increase to US\$ 100 million in receiver sales with the remaining product groups increasing to US\$ 35 million."

What are these other product groups? "We are one of the largest PC housing manufacturers; we also produce satellite dishes as well as professional receiver components for cable headends."

But TELE-satellite is primarily interested in receivers, so let's get back to that. "Satellite receiver development started in 1997", remembers Jianbiao Zhu, "and in 1998 we produced 10,000 receivers." This number increased at a tremendous rate: "In 2009 we produced 3.6 million boxes and in 2010 we expect production of four million boxes", he reveals and then adds, "In both years two million receivers were sold domestically in China; the rest were exported."

We wanted to know more about the export side of things: where does YINHE export to? Jianbiao Zhu takes a look at his laptop and then says, "30% of our

receivers end up in The Middle East, 20% go to Europe including the CIS countries and Southeast Asia, another 15% go to Australia, 10% to Africa and 5% to South America."

It should come as no surprise that YINHE operates offices in critical regions namely in Dubai since 2003 and in Australia since 2005. "This year 2010 we plan to open two additional offices in Sao Paulo and Moscow. We are also looking to open an office in Chennai in 2011", confirms Jianbiao.

The best export countries are Australia with DVB-T receivers in MPEG-4 and HD as well as India with DVB-C boxes in MPEG-2 and SD. "We want to expand our distribution in Europe including the CIS countries with DVB-T MPEG-4, DVB-T2 MPEG-4 and DVB-S2 receivers", comments Jianbiao Zhu. He adds, "60% of our exports are satellite receivers, 30% are terrestrial receivers and 10% are cable receivers."

Another interesting note: with a market segment of about 10%, YINHE is one of the largest providers of cable receivers domestically in China.

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■ YINHE's Main Entrance. The administration building is to the left behind which are numerous production facilities. 1500 employees work here.



■ Jianbiao Zhu, Overseas Marketing Manager, in YINHE's showroom. Samples from the production line are on display here.

After spending some time on the numbers, now might be a good time to take a closer look at YINHE's receiver division. Hongchun Gu, R&D Department General Manager is the man to talk to. He is in charge of a team of 65 engineers: "In the city of Nanjing there are another 80 engineers that have been working there since 2003 and since 1997 we have had 100 engineers in our design office in Beijing." It turns out that there are a number of universities in both of these cities and that makes it easy to find engineers there.

Hongchun Gu then explains to us what chipsets YINHE uses: "We use chipsets from ST, Fujitsu and NXB for our DVB-S/S2/T/T2/C products. For DVB-C we use NEC chips and for DVB-S/S2 we also use ALI. For the domestic market in China in ABS-S we use Nationalchip."

YINHE also works very closely together with the larger CA module producers such as Irdeto, Conax, NDS, Topreal, Sumavision, Novel and Cryptoworks."

What about any upcoming new products? The head of the R&D department must have known that those questions were coming. We weren't disappointed with the answers. On the contrary, YINHE has quite an array of new products in the works. According to Hongchun Gu: "In the third quarter of 2010 there will be a new DVB-S2 receiver with a built-in media player and also

with CI. In the fourth quarter will follow a DVB-S2 twin tuner PVR with Irdeto as well as a DVB-S2 box with a media player and integrated web browser. For 2011 a DVB-S2 receiver with WiFi and CI+ is planned."

That's quite an impressive list, but there's still more. Up until now we only mentioned satellite receivers; but YINHE also has plans for terrestrial receivers. "We just released a DVB-T MPEG-4 box with HD, twin tuner and PVR", reveals Hongchun Gu, "and we will shortly be coming out with a twin tuner PVR for the Freeview system in Great Britain, Austr-

■ The endless row of production buildings.





■ 11 production lines are in the SMT room. Qian Ming is in charge here and tells us, "We operate with two Yamaha SMT automated machines, six from Juki, two from Panasonic as well as a line for tests and repairs. With these automated machines we can produce seven million pieces a month."



■ An employee in the SMT room; here she's keeping an eye on one of the automated machines.

lia and New Zealand. In the third quarter of 2010 a DVB-T MPEG-4 receiver with USB and iPod connection will make its appearance followed by DVB-T receivers with CI and USB as well as CI and media player in the fourth quarter. On top of that, a DVB-T2 receiver in SD is also being worked on." And as if that weren't enough, Hongchun Gu continues, "For 2011 we are working on a DVB-T2

receiver for Freeview, a DVB-T box with media player and web browser as well as a DVB-T unit with WiFi."

That's quite a list of new products; now we understand why YINHE wants to go public with their company. With all the new products coming down the road, investment is necessary. The impression you get that everything seems very

organized when you tour their factory is only confirmed when you look at the list of their upcoming products. YINHE is looking well ahead into the future and every step of the way is being meticulously organized. It's a recipe for success that will lead to more growth.

This is how YINHE is preparing for the future!



■ At the other end are the rolls with the surface mount components. They are continuously fed by an employee into the SMT automatic mounting machines. The SMT automatic machines run 24 hours a day. The Chinese writing on the wall in the background reads: "Work with Your Fellow Employees; Good Management; Customer Orientation; Continuous Improvement".



Receiver Production



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1) Xu Yuezheng is the Factory Manager. She is in charge of all of YINHE's production lines.

2) Receiver components are assembled here. YINHE has 10 of these assembly lines with 25 employees on each line. 2000 receivers are assembled every eight-hour shift. The display board at the head of each line electronically shows the goal and current total.

3) Qian Wei Hong is Assembly Manager and is responsible for dividing the employees within the assembly area. The employees can look at the white board to see what assembly line they're assigned to.

4) The first step on the assembly line is the receiver housing seen here being placed on the conveyor belt by an employee.

5) The Main Board and power supply are installed and secured with screws.

6) Next comes the internal cable assemblies as well as the power supply cable.

7) The first test: is the assembled unit electrically sound?

8) The cover is placed on the housing.

9) Next, basic functions are tested; a sticker is applied if everything tests OK.

10) Now for the detailed testing: video, audio, reception, and much more is individually tested.

11) Every box receives a serial number and user manuals are placed on the conveyor belt.

12) Final step: everything is packed together and prepared for shipping.

13) Huang Jian Feng is in charge of the aging room. He explains what takes place here: "Receivers undergo a long-term test here at 40°C to 45°C. A maximum of 2000 boxes at a time can be 'aged' in our two aging chambers." This guarantees that the receivers will also work later on at higher temperatures. Defective boxes are removed here.



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Chassis Production

- 1) Receiver housing forms are stamped from flat pieces of sheet metal.
- 2) Mounting holes are punched.
- 3) Ventilation and footpad holes are punched.
- 4) Flat pieces of sheet metal are shaped into receiver housings.
- 5) Mounting posts are put in place...
- 6) ...and mechanically secured.
- 7) Finished: an employee gets ready to stamp OK on the housing.
- 8) This is how the housings are stacked until they are brought on a pallet to the assembly line.



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R&D Department

1) Hongchun Gu is the R&D Department's General Manager. From his desk he manages 65 hardware and software development engineers.

2) Software engineers work here on YINHE's new products.

3) An employee works meticulously on a hardware problem.

4) On a properly equipped test station, employees check out prototypes and run a series of tests.

5) An employee shows one of the new products: a DVB-S2 HDTV receiver with CA.

6) Equally new: an MPEG-4 DVB-T receiver with PVR and integrated 500GB hard drive for the Freeview system in Great Britain, Australia and New Zealand.

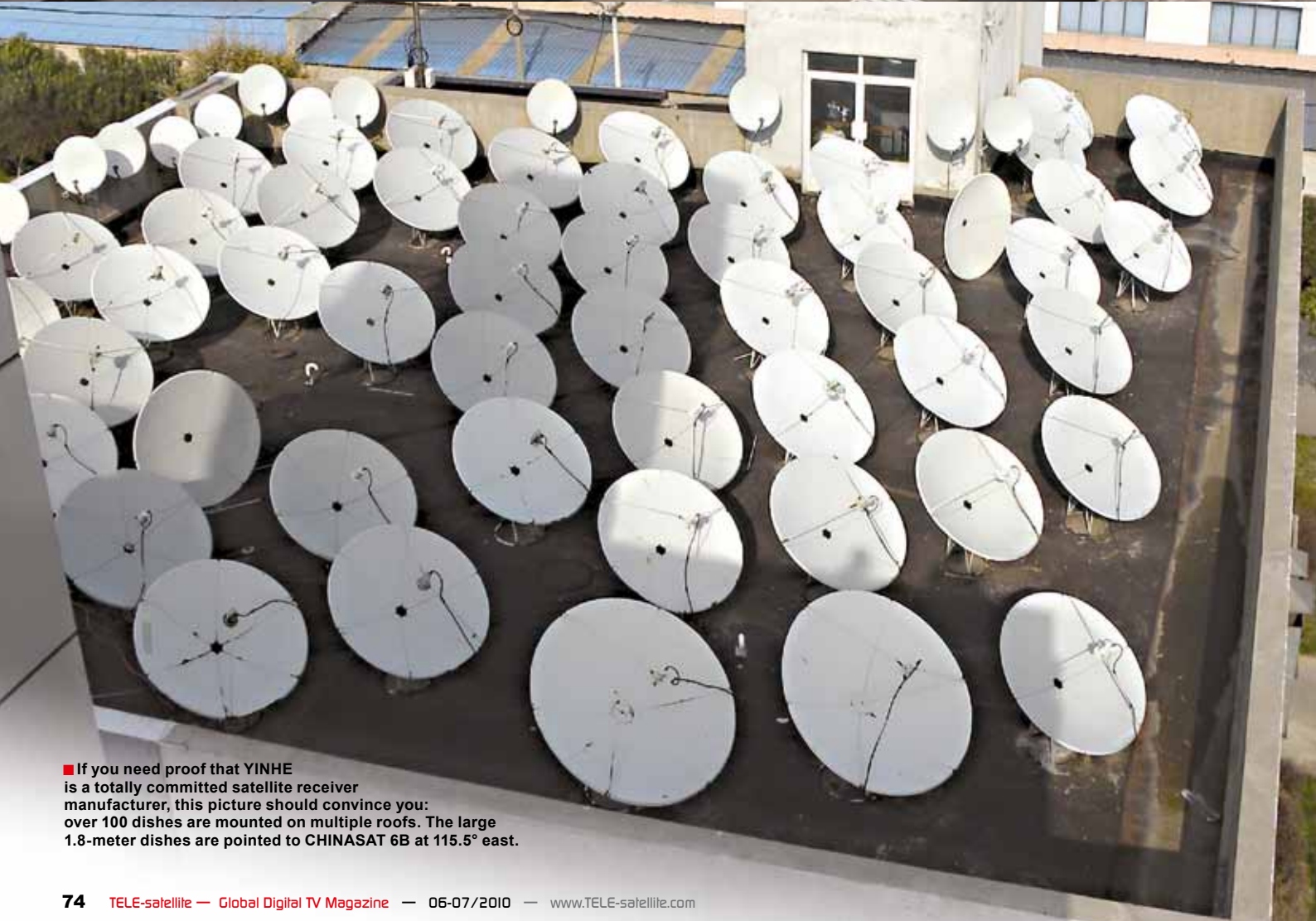


■ YINHE even operates their own TV studio! Actually there's more than one TV channel since with so many tests a proper number of signals is necessary. Here we see the transmitters for DVB-T and DVB-T2, for DVB-S and DVB-S2, for DVB-C as well as for ABS-S (Chinese satellite standard) and DMB-TH (Chinese terrestrial standard). For ISDB-T YINHE uses a software solution.



■ The Sales team is at work here dealing with ODM partners or programming operators from around the world. YINHE has specialized sales teams for South America, CIS, Western Europe, India, Australia, Africa and The Middle East.

■ View of YINHE's immense property with its numerous production halls as seen from the roof of the administration building.



■ If you need proof that YINHE is a totally committed satellite receiver manufacturer, this picture should convince you: over 100 dishes are mounted on multiple roofs. The large 1.8-meter dishes are pointed to CHINASAT 6B at 115.5° east.