About Yantel

Yantel Corporation, founded in July 2004, boasts a strong R&D team of Ph.D, professors and overseas-educated RF & Microwave experts. As a national-level High-Tech enterprise, we are in constant pursuit of innovation. By leading edge proprietary technologies in RF microwave active & passive components and IC design techniques in MMIC & RFIC, today’s Yantel holds over forty invention patents granted in China, US, Europe, Korea and Japan, etc.

With an integration of R&D, manufacturing and sales, Yantel has well equipped facilities for chip & components production, assembly, and advanced test equipment including Network Analyzer, Impedance Analyzer, Precision Test Fixture etc. Our advanced manufacturing techniques and complete processes ensure the high quality and excellent repeatability of products.
Honors & Qualifications

◆ Yantel has been Approved Supplier to **Nokia Siemens Networks (NSN)**, **Motorola Mobility**, **Foxconn**. And established stable business relationship with famous companines like **Comba Telecom, Samsung, ACE Technologies, RFHIC, NEC, Axell Wireless, Ericsson** etc.

◆ With the strength of many patented products, Yantel has been approved into governmental-funded Science & Technology programs at national, provincial and municipal levels, including the China Innovation Program for SME by China State Ministry of Science and Technology, Guangdong Province Research-Production Cooperation project, Shenzhen Scientific and technological project. These programs have propelled the industrialization of Yantel patented technologies.

◆ **Yantel was awarded Top 10 Outstanding Enterprise** by the City Intellectual Propriety office and was also Certified as **National High-tech Enterprise** by the State Ministry of Science and Technology.

◆ Yantel **manual variable attenuator (VAS series)**, as a replacement of the 30 year old conventional cavity type, is the world first one of its kind being hot-switchable, **no need to power off in attenuation adjusting**. Yantel has been supplying the above mentioned variable attenuator in volume for wireless coverage in the venues of **London 2012 Summer Olympics**.
Key Patents

Yantel is holding more than 40 international invention patents on RF and microwave communication systems.

- **Miniature Microwave Variable Attenuator**
  (Chinese patent #ZL200410051879.9)
  (Taiwan patent #1252606)

- **Microwave Continuously Variable Inductor**
  (Chinese patent #ZL200410027166.9)

- **Temperature Compensation Attenuator**
  # US7,629,861 B2
  # US7,990,230 B2
  (European Patent #EP1750369)
  (Chinese Invention Patent #ZL200410027307.7)
  (Korean Patent #10-0956103)

- **Efficient and Lossless Temperature Compensation Bias Circuit Built-in GaAs FET Chips**
  (US utility patent #US7,420,420,B2)
  (Chinese patent #ZL200410056160.4)

- **Portable Digital Photographing System Combining Position Navigation Information And Image Information**
  (US patent #US8,810,420,B2)

- **Dispensing Technology of Low Cost, high Efficiency and Reliability for Packaging of Miniature Chips**
  (Taiwan patent #094123551)
Outstanding R&D Team - Technical Background

Dr. Thomas Yan, Chief Designer & Technical Director of Yantel. Obtained doctor degree in Communication and Information Science from Japanese National Ibaraki University.

Used to work in a famous Japanese company as Chief Designer, leading the R&D of HF PA and frequency synthesizer (key parts for the 3rd generation W-CDMA mobile phone in Japan). Dr. Thomas successfully designed the world first smallest but most efficient HF PA for commercial mobile phones.

Mr. Bill Yan, General Manager of Yantel. Obtained Master Degree in Electrical Electronics from Tokyo Institute of Technology.

With over 20 year experience in R&D of RF & microwave semiconductor components and systems, Mr. Yan has over forty international invention patents in microwave components and chips, including Temperature Compensation Attenuator, Variable Attenuator, SMD RF Tunable Inductor, Portable Digital Photographing System Combining Position Navigation Information & Image information etc.
**Key Products and Technologies**

◆ **Feb.2008** Yantel’s world-first technology to realize real time lossless & accurate temperature compensation within the chip of GaAs PA. This patented technology can effectively enhance the repeatability (pass rate) of GaAs chip either in an entire wafer or across various wafer lots, leading to a higher efficiency of wafer usability and lower manufacturing cost. **The technology is ideal for producing GaAs PA chip and PA FET**, which requires high linearity, high gain, low loss, high efficiency and cost competitiveness. These PA chip and FET can be widely used in Multimedia, 3G, Multi-mode mobile phones, RF PA and LNA and other communication fields.

◆ **April.2008** Yantel **Temperature Compensation Attenuator** was granted patent by USPTO, **as the second one in the world after EMC Technology**, ending the global monopoly by EMC.

◆ **May.2009** Yantel released **manual Variable attenuator (VAS series)** as a replacement of the 30 year old conventional cavity type, VAS is the world first one of its kind being hot-switchable, no need to power off in attenuation adjusting and it has also greatly reduced the product dimension. This variable attenuator VAS has been used in volume in the venues of **London 2012 Summer Olympics for wireless coverage**.
Key Products and Technologies

◆ **May 2010** Yantel released word-first SMD manual variable attenuator (VAD&VAC series) in ultra small size, wideband DC-3GHz. This product features cost effectiveness and high performance, realizing accurate tuning in RF terminal and system like PA, LNA, CATV, Optical Communication, Antenna, RFID etc.

◆ **May 2012** Yantel released manual SMD RF tunable inductor which is the world first one to realize accurate tuning manually and operate to 1GHz and up to 6GHz. The product features low loss, high linearity, high Q value, small size, low cost, resistance to high temperature, high reliability and high power handling capability. It introduces a new approach to tuning resonant circuits at 1GHz or higher frequency for world-wide customers in terms of performance and cost.

◆ **Sept 2012** Yantel released world first electric controlled SMD RF tunable inductor. This product, operating to 1GHz and higher to 3GHz, features low loss, high linearity, high Quality Factor, small size, low cost, capability in handling strong RF signal, high reliability and low energy assumption, realizing self adaptive and dynamic frequency resonance, impedance matching and phase resonance in Mobile Phone Antenna and other communication systems. This electric controlled SMD RF tunable inductor serves as a breakthrough solution to the resonance tuning technical problems at 1GHz or higher in the designing and manufacturing of mobile phone chips.
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Key Products and Technologies

- **April 2014** Yantel ultra-small, high performance broadband tuning devices for Radio Communication Terminal have been successfully approved as Shenzhen Innovative R&D Program of Environmental Construction Plan - Silver Enterprise Cooperation Earnings.

- **Oct. 2014** Yantel core power adjustment component that apply to 3G/LTE POI has been successfully approved as Shenzhen Nanshan District 2014 I Innovative R&D Project.

- **Nov. 2014** Passing the review for National High tech Enterprises.

- **Dec. 2014** Yantel *The Research and Development of Miniature Wideband Variable Attenuator that applied to 4G RF communication terminal* has been successfully approved as Shenzhen Development of Science and Technology Fund Development Project.
Temperature Compensation Attenuator

Internationally

TCA series ..........DC-6GHz,2W,50Ohms
STCA series .........DC-6GHz,100mW,50Ohms, 0805 size
MTCA series ..........DC-12.4GHz,200mW,50Ohms
WTCA series ..........DC-20GHz,200mW,50Ohms
UTCA series ..........DC-20GHz,200mW,50Ohms, UWB, Thin film technology, excellent flatness response
KTCA series ............16-36GHz,200mW,50Ohms
BTCA series .............DC~6GHz, 2W,75 Ohms

ISO9001-2008
Application of Temp. Comp. Attenuator:

Satcom
Wireless, microwave communication
Phased Array Radar
TR component, PA module
RF Passive Module
Aerospace

Application: UWB ECM, SATCOM, Phased Array Radar, PA, LNA, TR Components and RF Module.
RF wideband Variable Attenuator

International Patent

VAS, VAB series
Step, DC-6GHz/3GHz

VAS series
VAB series
Application of VAS and VAB

Wireless Signal Coverage in Offices/Hotels/Stadiums etc.

Testing Systems (Network, mobile and antenna)

P. O. I. Equipment

Application:  DAS、POI、Wireless Network Signal Coverage System; Antenna/network/Mobile etc.
Environmental testing.

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High Precision Passive Chip

(RFIC package)

RFIC Circuit Configuration, 2*2 and 3*3mm
High Consistency, Low Insertion Loss

- Quadrifilar IC
- 3dB 90º Hybrid Coupler
- 2 way 0º Power Divider/Combiner
- 4 way 0º Power Divider/Combiner
- Directional Coupler
- Balun
Application of high precision passive chip:

Application: repeater, signal booster, GNSS antenna and GNSS receiver board.
SMD 3dB 90° Hybrid Coupler
SMD Directional Coupler

- SMD package
- Up to 5.5GHz
- 20W~500W

- SMD Package
- Up to 3.5GHz
- 20W~355W
Application of 3dB 90° Hybrid coupler and directional coupler

**Yantel SMD 3dB 90° Hybrid Coupler**  
Up to 6GHz, Up to 500Watt, PTFE

**Yantel SMD Directional Coupler**  
Up to 6GHz, Up to 355Watt, PTFE

**3dB 90° Hybrid Coupler applied to 2 way divider and combiner network in power amplifier**

Application: PA, LNA, power detector, phaser and feed network.
SMD Tunable RF Inductor (Electric Control)

SMD, Up to 6GHz, High Q value, 0-20nH, -40°C ~ +125°C

Applications:
- TV via mobile phone
- Internet surfing on mobile phone
- Phased array radar
- Call on mobile phone
Fixed Attenuator

- Frequency range: DC - 18GHz
- Attenuation: 1-90dB
- Input power: 2, 5, 25, 50, 80W
- High attenuation accuracy
- Small VSWR
- Stainless steel
- Ceramic chip
- Low cost-high performance
- Connector Type: SMA, MCX, MMCX, QMA, N etc.
Fixed Attenuator Chip

- Frequency range: DC ~26.5GHz
- Laser trimmed
- Material in Al₂O₃, BeO or AIN
- Attenuation: 1dB to 30dB
- Input power: 100mW~400W
- High attenuation accuracy
- Low VSWR
- Temperature stable -55°C to +150°C

ISO9001-2008
Subminiature Variable Attenuator

International Patent

VAD/VAC series

Step/Continuous, Wideband (DC-3G), SMD, DIP 10x10x5 mm

VAD series

VAC series

RoHS

ISO9001-2008
SMD RF Manual Tunable Inductor

Up to 6GHz, High Q value, 2~680nH (Al core), -40°C ~+125°C
Application

- Power Amplifier
- Low Noise Amplifier
- Gain Blocks
- Optical Transceiver Module
- WLAN (2.4GHz or 5.8GHz)
- Wi-Fi/WiMAX/LTE
- DAS
- Mixers/filters
- Power Dividers/Couplers
- Satellite Communication
- CATV & Broadcast
- GPS location
- GNSS
- Router
- Phased Array Radar
- Optical Repeater
Main Customer

- Motorola Mobility
- Nokia Siemens Networks
- Axell Wireless
- ACE Technologies
- RFHIC
- Ericsson
- Foxconn
- Sunwave Technology
- SUNGSAN Electronics
- Samsung
- NEC
- Panasonic Mobile Communications
- 中兴（ZTE Corporation）
- 凡谷电子（Fingu）
- 国人通信（GrenTech）
- 京信（Comba Telecom）
- 锐德科无线通信（WSC）
- 大唐移动（Datang Mobile）
# International Trade Shows

<table>
<thead>
<tr>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012 International Microwave Technology Symposium (IMS2012)</td>
<td>Montréal, Canada</td>
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<tr>
<td>Time: June 17-22, 2012</td>
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<tr>
<td>2010 IEEE MTT-S International Microwave Symposium &amp; Exhibition</td>
<td>Anaheim, California, USA</td>
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<tr>
<td>2009 Microwave Workshops and Exhibition (MWE 2009)</td>
<td>Yokohama, Japan</td>
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<tr>
<td>2009 IEEE MTTS</td>
<td>USA</td>
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<tr>
<td>2008 IEEE MTT-S International Microwave Symposium &amp; Exhibition</td>
<td>Georgia, USA</td>
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<tr>
<td>European Microwave Week 2008</td>
<td>Amsterdam RAI</td>
</tr>
<tr>
<td>Microwave Workshop and Exhibition 2008</td>
<td>Pacifico Yokohama, Japan</td>
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International Trade shows

2012 IEEE MTTS

2010 IEEE MTT-S

2009 IEEE MTT-S

2008 IEEE MTT-S

European Microwave Week 2008

Microwave Workshop and Exhibition
Contact us

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Thank you for your attention