



#927 Unitechvil, 1141-2, Baekseok, Ilsandong, Goyang,
Gyeonggi, Korea [410-722]
TEL : 82-31-920-6601 FAX : 82-31-920-6607
E-MAIL : tescom-sales@tescom.org



Tescom Instruments

Mobile Phone
WLAN
Bluetooth
DMB / DAB
RFID
Wibro





The world's best corporation for 21st century wireless communication measuring equipment

Tescom has been a specialist in wireless telecommunication and mobile broadcast measuring equipments since its establishment in Feb. 1993. We commenced business with our wireless call demonstrator and have continued providing highly economical, quality measuring equipment in the fast-growing wireless telecommunication and broadcasting markets. These products include pagers, CT2, mobile wireless telegraphs, mobile phones, wireless LAN, Bluetooth, RFID and mobile broadcasting etc.

Tescom always provides customer satisfaction and product quality as our top priorities. Also, we aim for user convenience, usefulness and reliability as we continuously strive to develop excellent products. Based on our excellent technology, we help customers become specialists in the wireless telecommunication measuring equipment field, which is important in the telecommunications industry.

The corporation makes a contribution to business and society.

The corporation, whose confidence owes to its respect for the value of business and society, makes a profit and contributes to society through its sound business activity.

The corporation is always with its customers.

The corporation maintains credibility and respect with its customers and builds a strong relationship with them by securing the best quality and providing the best value.

The corporation can achieve its own goals.

The corporation pursues work satisfaction and achievement by sharing its success with all staff and employees, recognizing individual achievement, and respecting each member of the team.





Bluetooth Tester

- ▶ All in one solution
- ▶ Supports Bluetooth 2.0
- ▶ Audio + EDR measuring function
- ▶ Automatic whole measurement function
- ▶ CE certificate

DAB/ DMB Tester

- ▶ All in one solution
- ▶ Consists of simple measurement system
- ▶ Audio Analyzer
- ▶ CE certificate



RFID Tester

- ▶ All in one solution
- ▶ Implemented Reader / Tag Mode
- ▶ Protocol Analysis
- ▶ Measuring RF signal



Shield Box

- ▶ Excellent shield effect
- ▶ Strong durability
- ▶ Automatic lead open & shut method
- ▶ Easy to produce large quantity

TEM Cell

- ▶ Measuring RF radiation
- ▶ Measuring EMI/EMC
- ▶ Strong durability
- ▶ Provide standard electric field environment

Accessories

- ▶ Non-contact measurement coupler
- ▶ Easy to conduct simple test
- ▶ Easy to measure various RF



TEST & MEASUREMENT

TC-3000B Bluetooth Tester

TC-3000B Bluetooth Tester is able to analyze the data of every packet that is transmitted to the upper application protocol layer using the protocol stack, which is developed by our own technology. In addition, it enables the user to examine the transmitting and receiving signal function. Since it has built-in signal waveform analysis functions such as spectrum analysis, modulation analysis and period power analysis, this enables the user to perform various RF tests simply and conveniently. Moreover, since it has important test cases include EDR built-in, it enables the user to check the eligibility of the product standard simply and easily.

- Supports Bluetooth 1.1/1.2/2.0 + EDR
- Integrated measurement (RF, Audio, Protocol)
- Measures the suitability of Bluetooth specifications, overall auto measurement function according to test case
 - Supports 12 RF test cases
 - Supports 13 basic Baseband test cases
 - Supports Dirty Transmitter
- Audio performance (SCO Link) Measurement function (Option 3000-10)
 - Audio quality verification (SINAD, Distortion), Audio spectrum, SCO loopback function
- RF signal analyzer function (Option 3000-20)
 - Spectrum Analyzer, Analyze Modulation wave form, power vs. time, power vs. channel, RX-BER
- Protocol analyzer function (Option 3000-30)
 - Supports Master/Slave mode
 - Baseband, LMP, HCI, L2CAP, RFCOMM, SDP, Profile packet analysis
 - Execute function of HCI command
- EDR Function (Option 3000-40)
 - I-Q Constellation
 - DEVM (Differential Error Vector Magnitude)
 - TX Bit Error Rate (TX-BER)
 - Supports 7 EDR RF test cases
- Digital signal generator and Spectrum analyzer for 2.4GHz
- User definable Baseband IN/OUT ports for real-time signal monitoring, external modulation, audio source and audio analyzer
- HCI interface for DUT connection: USB, RS-232C (UART, BCSP)
- Remote control: TCP/IP (LAN), RS-232C
- Simple upgrade using the Internet or a floppy disk
- CE certificate: EN61010-2001, EN61326, A2:2001, EN61000-3-2, 2000, EN61000-3-3, A1:2001



Option application guide for each process

Function	Special Feature	De velop ment	Quali ty	Pro duc tion	A/S
RF Test Cases (Basic)	RF Test case	O	O	O	O
	Quick test(Power, MOD, ICFT, CFD)			O	
	Support HCI interface options for DUT	O			
	Baseband Monitoring	O			O
RF Measurement (Option 20)	Spectrum, Modulation, Power vs Time, Power vs Ch, RX-BER	O	O		O
	I-Q Constellation, DEVM, TX BER(with Option 40)	O	O		O
Audio Test (Option 10)	SCO Loopback(Microphone& Speaker test)	O	O	O	O
	Audio Test(Freq., Level, Distortion, SINAD)	O	O	O	O
	Audio Spectrum Analyzer, Sweep test	O	O		
	RF& Audio test(Normal mode test)			O	
Protocol Analysis (Option 30)	Profile, SDP, RFCOMM, L2CAP	O			
	Packet Information, LMP, HCI, Baseband	O			
EDR (Option 40)	BER RF Test case	O	O	O	O

TC-2300B DAB/DMB Tester

TC-2300B DAB/DMB Tester supports the Eureka-147 (ESTI EN 301 500) system, freely changes most parameter related to protocols in a GUI operating system and simultaneously generates almost unlimited pattern signals.

In addition, it includes an RF up-converter, which supports RF output in a range between 0 ~ -120dBm and Band II, III, L frequency ranges, so it can directly generate broadcasting signals to DUTs so that systems can be easily aligned. TC-2300B can be used through its audio analyzing function that analyzes signals from earphones or a receiver speaker in tests of receiver audio quality or reception sensitivity. TC-2300B, developed by our own technology, by various functional aspects such as 1Hz step frequency, 0.1dB step output of stabilized RF performance and many other functions, offers the most ideal solution in DAB/DMB receiver development, production and service.

- Support Eureka-147(ETSI EN 301 400) protocol
- Combination test equipment (OFDM modulator + RF up-converter + Ensemble multiplexer)
- Supports BAND II, III, L (87.5MHz ~ 108MHz, 174MHz ~ 250MHz, 1452MHz ~ 1492MHz)
- 0 ~ -120dBm RF output range
- Support I-Q output port
- Built-in 512Mbyte Flash memory to store Video or Audio stream data(up to 1072Kbps)
- Transmit fixed patterns for BER measurement
- Built-in Audio Analyzer (SINAD, Distortion, Frequency, Level)
- Audio discontinuation test function for measuring digital audio quality
- FM modulation signal generator
- Support Reconfiguration, Announcement, TII
- Easily upgradeable by use of flash memory
- High speed external data port to support external Audio or Video up to 600Kbps
- User definable screen
- GPIB and RS-232C Remote Control port
- CE certification: EN 61010-1:2001, EN 61326:1997+A1:1998+A2:2001+A3:2003, EN 61000-3-2:2000, EN 61000-3-3:1995+A1:2001



RADIO WAVE SHIELDING DEVICE

→ TEM Cell

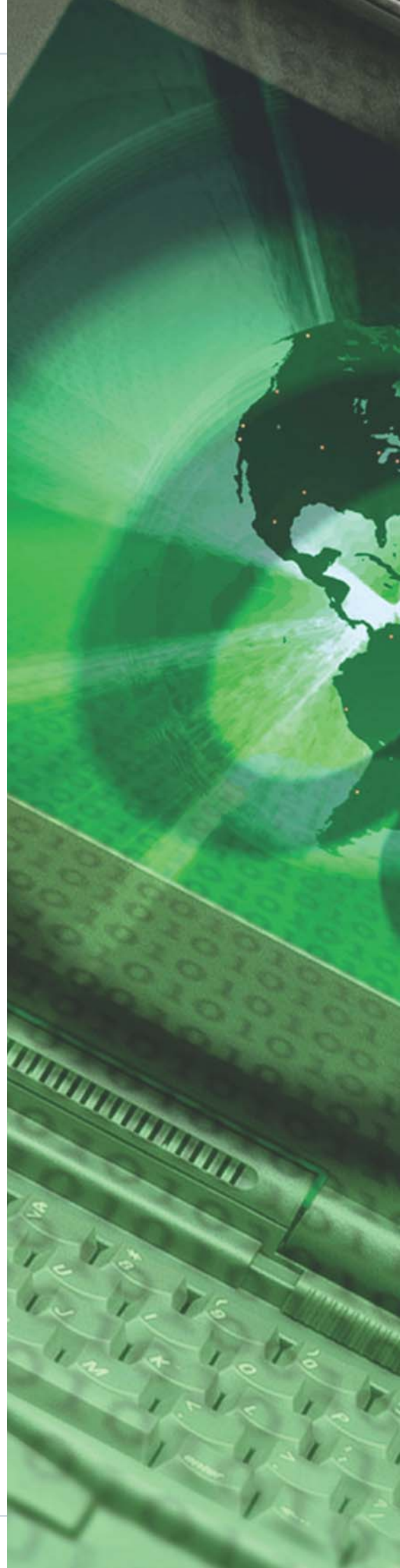
TEM (Transverse Electromagnetic) Cell is a device for generating a broadband standard electric field and measuring radiation power. It was developed in the 1970s by U.S. NBS Lab and is now used widely for EMI/EMS tests and more. When a user applies the RF test signal into the TEM Cell, a plane wave is generated inside. This measures the value of the path loss up to the DUT (Device Under Test) and examines the reaction of the DUT. Even when repeating the measurement, the TEM Cell maintains a constant path loss value with regard to the same test signal and same DUT location. Hence, it can be used for an OTA (Over The Air) measurement of wireless handsets. By contrast, if the user inserts a DUT that emits radiation inside, the abandoned electric power is generated on both the terminals of the TEM Cell by the radiation field and the user may measure it by a spectrum analyzer then calculate the Open Site equivalent radiation strength quantitatively.

A standard TEM Cell has two ports: one impresses the RF voltage and the other is finished by 50ohm that serves as a special impedance of the TEM Cell. Among the RF signals that inputs into the cell, the waveform that is deviated from the limited frequency does not maintain the TEM mode and resonates by sectional alteration of each part of the cell body. Precisely, the G-TEM Cell was made for solving this resonance problem by applying the radio wave absorbent to half of the cell.

However, since the G-TEM Cell was expensive to produce, required wide spaces and was limited in frequency, it was not really viable. Tescom improved this by minimizing its size and allowing the user to operate it without space limitations and over a wide frequency range (100MHz ~3GHz).

Thus, Tescom TEM Cell is now able to measure the absolute receiving sensitivity of small RF devices such as cell phones, WLAN, Bluetooth, DAB/DMB etc, and also test radio wave interference from RF parts easier and more accurately without the high costs of an anechoic chamber. Hence, it is highly appropriate technology for the measurement of radio waves.

- Measuring test of reception sensitivity: Transmitter Radiation Power Test
- EMI and EMS tests for small UHF devices
- Cell phone, WLAN, PDA, Bluetooth, DAB/DMB



Shield Box

The radio wave shield can be defined as the most important factor when measuring wireless telecommunication. When transmitting a test signal to the DUT or measuring the DUT signal, the reliability of the measurement can be guaranteed only if the DUT is fully isolated from the external interferences. To create the radio wave shield environment, a Shield Room to store equipment and conduct the test must normally be set up. Those conducting the tests must enter the room. However, the typical Shield Room requires too much space and lacks usefulness. Thus, a small and convenient Shield Box is more appropriate for the measurement of small wireless telecommunication handsets.

Tescom Shield Box is solid and has an excellent shielding function. Since it provides various interfaces, it can be applied to any type of handset. Moreover, automation is made possible by manufacturing a precise exclusive jig that meets customer requirements and operates on compressed air. The various sizes and interfaces, with automatic or manual types of operating methods, provide a wide range of choices and flexibility suitable for any type of user environment. Hence, it is efficient in product manufacturing, service and development and is also able to organize an economical measurement environment.

- Excellent shield effect
- Various interface modules
- Automatic or manual operation by air compression method
- Remote control by RS-232C



W-LAN Shield Box

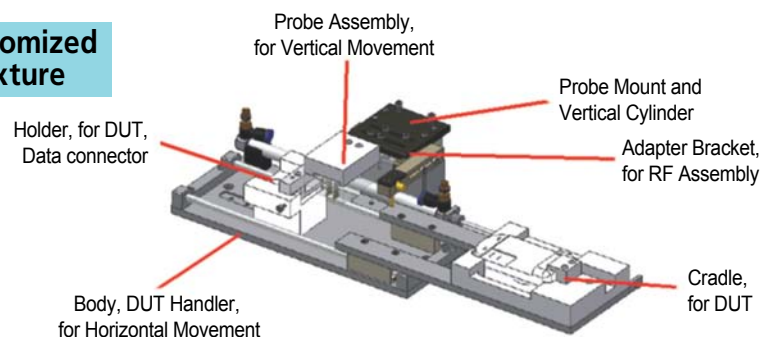
This Shield Box for measuring WLAN products requires a special interface and operates with a PCI, mini PCI, Card Bus, PCMCIA, CF Card, USB, PCI Express and PCI Express mini connector for WLAN handset control. Also, since it has a built-in Hot Swap function, it is not necessary to switch the PC ON/OFF when repeating the measurement.

Moreover, this interface extension technology implements a specially designed extension cable that solves the problem of organizing measurement systems caused by the communication distance limitation of those interfaces related to WLAN. Thus, it provides excellent flexibility for WLAN handset measurement.

Manufacturing customized fixtures

In general, all DUT come in different shapes and sizes and the data for measurement or RF connection are also different. Hence, the exclusive fixture is necessary for the measurement of manufactured products. If the information and sample DUT are provided, Tescom can design the precise fixtures to meet the customer's requirements. Such a customized fixture is equipped at the Shield Box and a fixed DUT, connecting the connector for measurement and moving the DUT before and after measurement. The user is able to automatically set every measurement process but the DUT, whose serial number must be manually entered.

Customized fixture



Shield Box

MAIN PRODUCT OF SHIELD BOX

Shield Box Products	Shielding SPEC.	Size(mm) (exterior / interior)	Application Range	Picture / coupler
	TC-5951A > 80dB at 2.5GHz	342(W) x 239(D) x 262(H) 280(W) x 150(D) x 95(H)	Mobile, Bluetooth	F59422A
	TC-5952B > 80dB at 2.5GHz	342(W) x 239(D) x 262(H) 280(W) x 150(D) x 95(H)	Mobile, Bluetooth	F59421A F59421B
	TC-5953A > 55dB at 2.4GHz	342(W) x 239(D) x 262(H) 280(W) x 150(D) x 95(H)	W-LAN (CardBus, PCMCIA)	F59431A F59531A
	TC-5901B > 70dB at 2.5GHz	459(W) x 300(D) x 302(H) 408(W) x 218(D) x 135(H)	Mobile, Bluetooth	F59014A
	TC-5981A > 65dB at 2.4GHz	194 (W) x 357 (D) x 203 (H) 150 (W) x 270 (D) x 95 (H)	Mobile, Bluetooth	F59813A TC-93023C
	TC-5910C > 70dB at 2.5GHz	205(W) x 418(D) x 158.5(H) 120(W) x 224(D) x 122(H)	Mobile, Bluetooth	TC-93020A TC-93030B TC-93031A
	TC-5912C/D > 55dB at 2.4GHz	205(W) x 418(D) x 152.5(H) 120(W) x 225(D) x 115(H)	W-LAN (CardBus, Mini PCI)	
	TC-5915A > 70dB at 2.5GHz	310(W) x 475(D) x 220(H) 220(W) x 280(D) x 170(H)	Bluetooth DMB W-LAN	TC-93034A
	TC-5920A > 60dB at 2.5GHz	212(W) x 578(D) x 262(H) 182(W) x 380(D) x 210(H)	Mobile, Bluetooth	TC-93034A
	TC-5970B > 60dB at 2.4 GHz	620(W) x 680(D) x 531(H) 540(W) x 550(D) x 430(H)	DMB W-LAN Notebook	TC-93021B

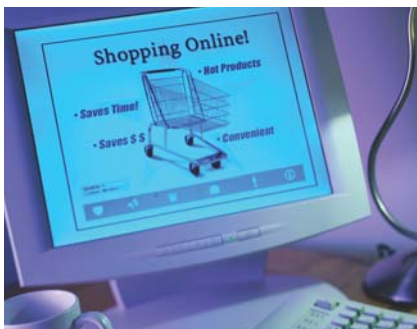
Antenna Coupler

ANTENNA COUPLER

Tescom's Antenna Coupler can be used with mobile phones, W-LAN, Bluetooth and DAB/DMB Bands. It is designed to conduct measurements by connecting the TX and RX signals to the internal or external antennas

of mobile phones and external devices with a non-contact method. It is equipped to the Tescom Shield Box and can be used for radiation measurement through the DUT antenna.

Antenna Coupler Products	Product	Frequency Range	Insertion Loss
	TC-93010C	800~2000MHz	8 ~12 dB
	TC-93013A	800~2000MHz	10 ~ 18 dB
	TC-93020A	80~2650MHz	8 ~ 20 dB
	TC-93030B	80~2650MHz	6 ~ 20 dB
	TC-93031A	80~2650MHz	6 ~ 20 dB
	TC-93034A	80~2650MHz	10 ~ 18dB





RF ENCLOSURES FOR WIRELESS DEVICE TESTING

Application Range

W-LAN



TC-5912C/D
[205(W)x418(D)x152.5(H)mm]



TC-5953A
[342(W)x239(D)x262(H)mm]



TC-5970B
[620(W)x680(D)x531(H)mm]

Small

Large Size

For Radiation Test



TC-5060A/B
[344(W)x380(D)x675(H)mm]



TC-5062A
[344(W)x403(D)x675(H)mm]

Mobile Phone - PDA - Bluetooth - DMB/DAB

Manual Operation



TC-5910C
[205(W)x418(D)x158.5(H)mm]



TC-5915A
[310(W)x475(D)x220(H)mm]



TC-5920A
[212(W)x478(D)x262(H)mm]



TC-5970B
[620(W)x680(D)x531(H)mm]

Pneumatic Operation



TC-5951A/5952B
[342(W)x239(D)x262(H)mm]



TC-5981A
[194(W)x357(D)x203(H)mm]

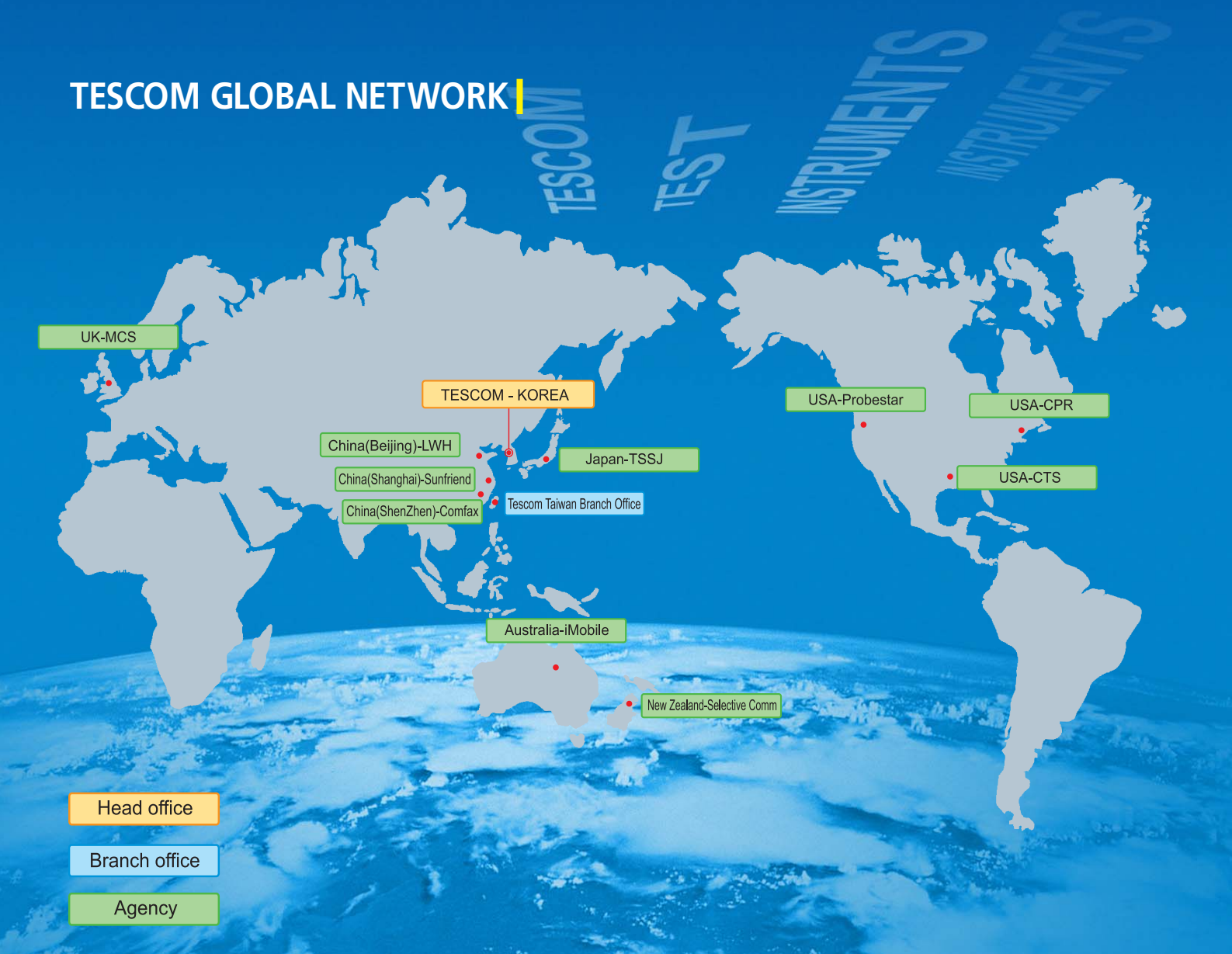


TC-5901B
[459(W)x300(D)x302(H)mm]

Small

Large Size

TESCOM GLOBAL NETWORK



MAIN CLIENTS

•Asustek Computer Inc.	•KTF Co., Ltd.	•Qualcomm Incorporated
•Atmel Corporation	•KT Corporation	•Quanta Computer Inc.
•BenQ Corporation	•KETI	•Samsung Electronics Co., Ltd.
•Bird	•Lenovo	•Samsung Electro-mechanics Co., Ltd.
•Flextronics Corporation	•LG Electronics Inc.	•Siano
•Foxconn	•LG Innotek Co., Ltd.	•Siemens AG
•Frontier Silicon Ltd.	•LG Telecom Co., Ltd.	•SK Telecom Co., Ltd.
•GN Netcom Inc.	•LS Industrial System Co., Ltd.	•SKC Co., Ltd.
•Haier Co., Ltd.	•Motorola, Inc.	•SonyEricsson
•Huawei Technologies Co., Ltd.	•Nokia Corporation	•TTA
•High Tech Computer Corp.	•Palm. Inc.	•VK Corporation
•Intel Corporation	•Panasonic	•Wavecom
•Kejian	•Pantech & Curitel Communication, Inc.	
•KTF Technologies Co., Ltd.	•Perstel Inc.	