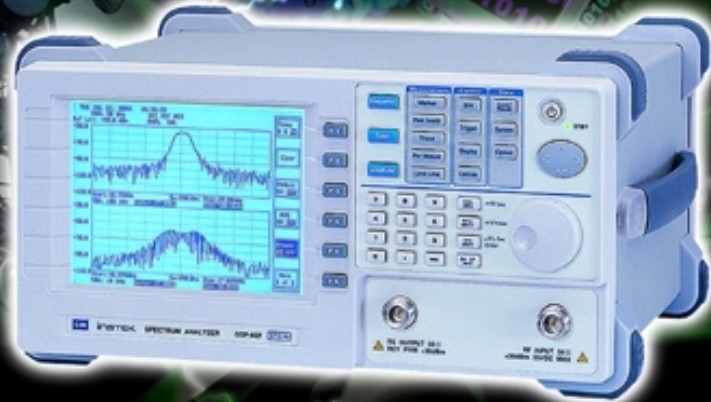


GSP-827

2.7GHz Spectrum Analyzer



- **High Portability**
- **Exceptional Value of Price / Performance**
- **Easy-To-Use**

GW **INSTEK**

GSP-827 Spectrum Analyzer

Portable and Easy-To-Use Spectrum Analyzer with Exceptional Price/Performance

GSP-827 covering 9kHz ~ 2.7GHz frequency range, is designed to meet the demands of production or development tests of RF products, and maintenance or installation of on-site wireless communication systems. The exceptional price/performance, high portability, and easy-to-use design make GSP-827 a very accurate and handy instrument for most of the RF measurement applications.

High Portability and Large Memory Size :

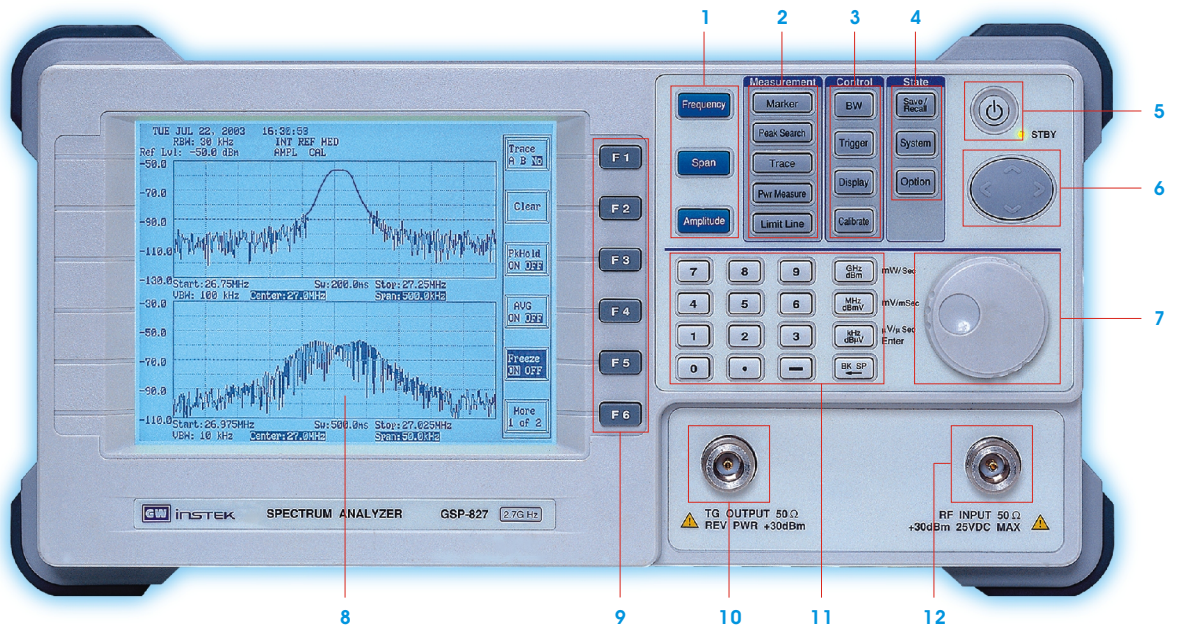
With AC/DC/Battery power operation, 4.5kg light weight, compact size, and 9kHz ~ 2.7GHz frequency coverage, GSP-827 is a very convenient tool for the field service of RF systems. The 100 sets of memory of GSP-827 to save 100 trace/set-up make repetitive measurements with mass storage of test results possible. The large memory size of GSP-827 is also a useful feature for the characteristic verification of products and components. The repetitive measurement results could be saved in GSP-827, and then transferred to the PC for further analysis.

Exceptional Price/Performance :

Utilizing advanced synthesizer-based design, GSP-827 delivers accurate and reliable measurements. The remarkable performance of -100dBm average noise floor and -100dBm ~ 20dBm wide input range, greatly extends the application range of the product. The ACPR, OCBW and CH power measurements make the verification of wireless communication characteristics simple and easy. The split window display to simultaneously show the spectrum in two separate frequency spans and set-ups makes the complicated measurements a lot easier. The optional built-in tracking generator with normalized output gives a useful mean for the performance test of RF components and modules. All the GSP-827 innovative features reflect to the price/performance value of the users.

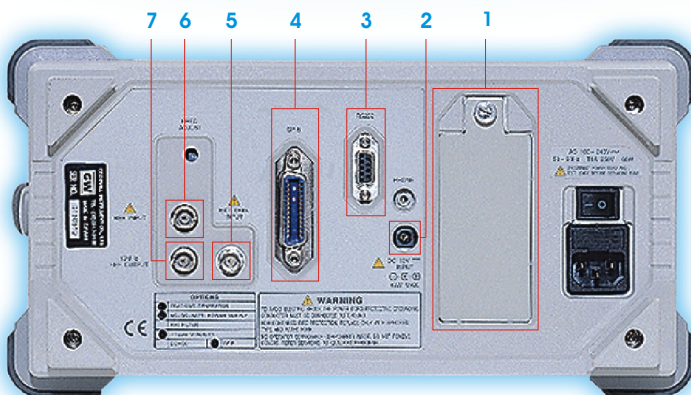
Features

- Frequency Range : 9kHz ~ 2.7GHz
- Input Range : -100dBm ~ +20dBm
- Average Noise Floor : -100dBm
- Power Measurements : ACPR/OCBW/CH Power
- Split Window: Simultaneous Measurements in Two Separate Frequency Spans
- 10 Markers : Delta Mode, Peak Search, Peak Track
- Trace Function : Dual-Trace Display, Peak Hold, Freeze, Average, Trace Math
- Limit Line : Upper/Lower Limit with Pass/Fail Test
- Trigger Function : Video/ External
- Clock/Calendar : Time/Date Stamp in Saved Data
- Wide Range of External Reference Clock : 1MHz~19.2MHz
- 100 Trace/State Memories with Date/Time Stamp and File Name
- TG : 9kHz ~ 2.7GHz, -50dBm ~ 0dBm (Option)
- AC/DC/Battery Operation (Option)
- Compact Size and Light Weight at 4.5kg



Panel Introduction :

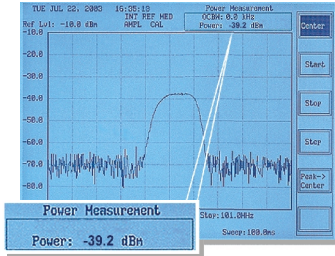
1. Main functions
2. Measurement keys
3. Control keys
4. State keys
5. Power Button
6. Arrow key
7. Fly Wheel
8. 640 x 480 High Resolution LCD Display
9. Function keys
10. TG Output
11. Numeric Keypad
12. RF Input



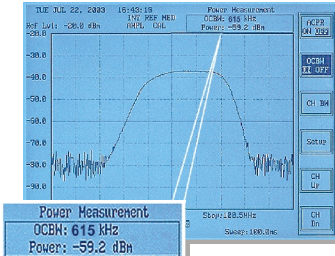
Rear Panel :

1. Battery Pack Slot (Opt.)
2. DC Power Supply (Opt.)
3. RS-232C
4. GPIB (Opt.)
5. External Trigger
6. 10 MHz REF Output
7. REF input

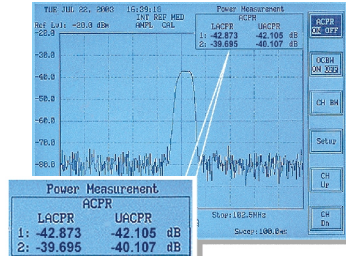
CH Power/OCBW/ACPR



Channel Power Measurement



OCBW Measurement



Adjacent Channel Power Ratio

GSP-827 provides versatile power measurement capabilities including Channel Power(CHP), Occupied Bandwidth(OCBW) and Adjacent Channel Power Ratio(ACPR), which are essential to the transmission characteristics verification of wireless communication systems.

CH Power :

With the setting of channel center frequency and channel bandwidth , GSP-827 automatically measures the total transmitted power within the set bandwidth of the designated channel.

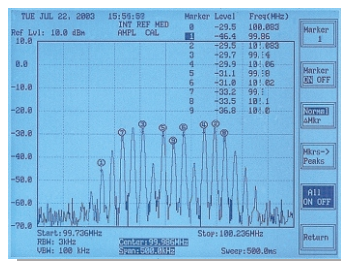
OCBW :

With the setting of channel center frequency and the percentage of total transmitted power, GSP-827 automatically indicates the bandwidth that represents the set percentage of total transmitted power.

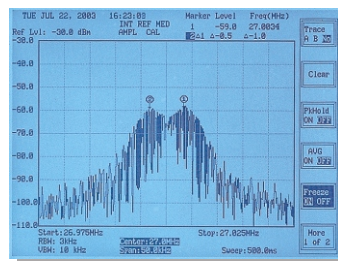
ACPR :

ACPR measurement function allows the user to check the interference or leakage power between the designated channel and its adjacent channels. Due to the sophistication of the modern communication system, GSP-827 has the capabilities to measure the power ratio between the designated channel and its adjacent channels either within the same communication system or that of a different communication system.

10 Markers(Peak Track, Peak Search)



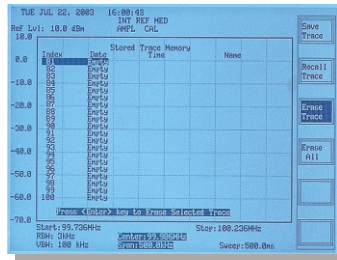
Multi-Markers Mode



Delta Marker Mode

GSP-827 gives the high operation flexibility under both Delta-Marker mode and Multi-Marker mode. Up to 10 markers could be selected to show their absolute values of frequency and level in a table on the screen. The relative values of frequency and level of selected markers-to-reference marker could be shown under an easy operation process. All Markers , each with full marker capabilities including Peak Search, Marker to Center , and Peak Track, provide fast and comprehensive interpretations of measurements.

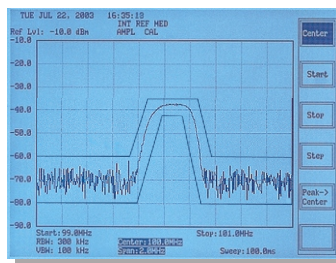
100 Trace/State Memories



100 Sets of Trace/State Memories

GSP-827 provides up to 100 sets of memory to Save and Recall the Waveform and the Set-Up of measurements. The specified file name and the Date/Time stamp could be attached to each saved file for easy recognition and analysis of all the saved information. With large memory size, GSP-827 greatly facilitates the measurements of on site service and the product characteristic verification.

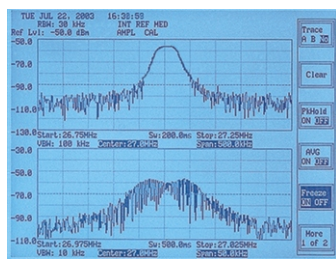
Limit Line



Limit Line for Pass/Fail Testing

The Upper Limit Line and Lower Limit Line could be easily set to monitor the abnormal signals under user's definition. Each Limit Line could be set by linking the points, which are positioned by entering the values of both frequency and level referring to the frequency axis and the level axis.

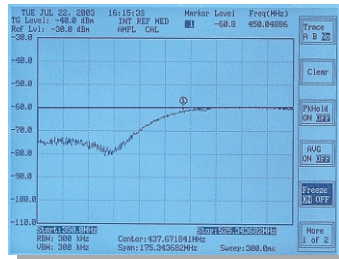
Split Window



Split Window To Observe Two Different Signals

Split Window allows user to view the frequency spectrum of an input signal on two separate screen areas under two different settings of GSP-827. This useful feature of two-measurements-in-one usually means the value of two-instruments-in-one.

Tracking Generator



Tracking Generator To Observe Characteristic of Filter

With optional Tracking Generator, GSP-827 becomes a handy tool to do the characteristic verification of dual-port components such as filters and amplifiers etc. The normalization process of output signal compensates the uneven signal loss caused by the effect of measurement cables and connectors, and therefore ensures an accurate measurement.

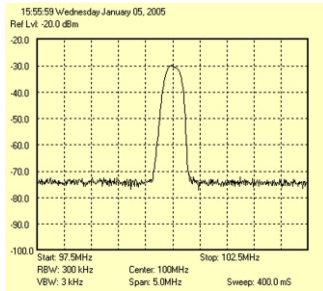
AC/DC/Battery Power Operation



AC/DC Battery Pack

In the field service environment or the places without AC power, GSP-827 with optional AC/DC/Battery operation gives the convenience to use a lab instrument without AC power, and maintains the lab measurement accuracy at the same time. A soft carrying case and the DC power cable with car lighter plug for GSP-827 are also available to facilitate the outdoor applications.

PC Software



Free Charge of PC Software

GSP-827 offers a PC software free of charge that customers can easily send the acquired trace and the associated parameters from GSP-827 to PC through RS-232C.

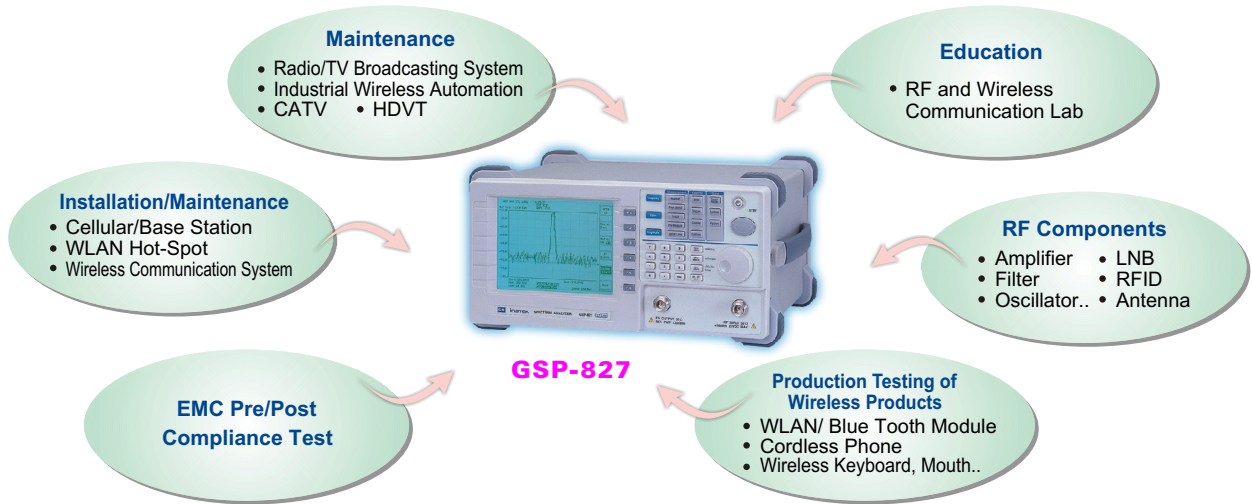
Carrying Case



Carrying Case with GSP-827 and Accessories

With the carrying case, GSP-827 makes the on-site RF measurements more convenient. The carrying case not only provides the protection and portability of GSP-827 but also carries the test accessories, such as RF cable, antenna, and battery to facilitate the measurements.

Application



Instrument Test Lead & Option

| | | | | | |
|--|--|---|---|---|--|
| ADP-001 Adaptor BNC(J/F) ~ N(P/M) | | GAK-001 Termination 50 Ω N (P) | | GTL-302 RF Cable Assembly (RG223, N(P), 300mm) | |
| ADP-002 Adaptor SMA(J/F) ~ N (P/M) | | GAK-002 Cap with Chain N (P) | | GTL-303 RF Cable Assembly (SMA(P), RD316, 600mm) | |
| ADP-101 BNC(J/F) 75 Ω ~ BNC(P/M) 50 Ω | | ATA-001 BNC Antenna | | GTL-304 RF Cable Assembly (RG223, N(P) ~ N(J), 300mm) | |
| ATN-100 10dB Attenuator N(J) ~ N(P) | | GTL-301 RF Cable (RG 223 N(P) , 1000mm) | | GTL-401 DC Power Cord with DC Jack and Lighter Plug, Current 5A Opt.11 | |
| General Kit set ADP-002 x 2 ATN-100 x 1 GTL-303 x 2 GSC-002 x 1 Opt.08 | | CATV Kit set ADP-001 x 2 ADP-101 x 2 GTL-304 x 2 GSC-003 x 1 Opt.09 | | RLB Kit set GAK-001 x 1 GAK-002 x 1 GTL-302 x 2 GSC-004 x 1 Opt.10 | |
| GRA-404 Rack Adapter Panel Rack Mounting (19", 4U) | | | GSC-001 Soft Carrying Case Opt.07 | | |
| | | | | | |

Specifications

| | | |
|--------------------------------|---|--|
| FREQUENCY | Frequency Range Aging Rate Span Range Phase Noise Sweep Time Range | 9kHz~2.7GHz ± 10ppm, 0~50 °C, 5ppm/yr 2kHz~ 2.5GHz in 1-2-5 sequence, full span, zero span -85dBc/Hz @1GHz 20kHz offset typical 50ms~25.6s |
| RESOLUTION BANDWIDTH | RBW Range RBW Accuracy Video Bandwidth Range | 3kHz, 30kHz, 300kHz, 4MHz 15% 10Hz~1MHz in 1-3 steps |
| AMPLITUDE | Measurement Range Overload Protection Reference Level Range Amplitude Display Range Amplitude Accuracy Frequency Flatness Amplitude Level Linearity | -100dBm~+20dBm : 1MHz~2.5GHz @3k RBW ; -95dBm~+20dBm : 2.5GHz~2.7GHz @3k RBW -75dBm~+20dBm : 150kHz~1MHz @3k RBW; -65dBm~+20dBm : 50kHz~150kHz @3k RBW +30dBm, ±25VDC -30dBm~+20dBm 75dB ± 1.5dB @100MHz ± 1.5dB ± 1.5dB over 70dB |
| DYNAMIC RANGE | Average Noise Floor Third Inter-Modulation Harmonic Distortion Non-Harmonic Spurious | -100dBm: 1MHz~2.5GHz; -95dBm: 2.5GHz~2.7GHz; -75dBm: 150kHz~1MHz; -65dBm: 50kHz~150kHz <-70dBc @-40dBm Input, 2MHz apart <-60dBc @-40dBm Input <-60dBc @typical down from Reference Level 150k~2.7GHz |
| DISPLAY SYSTEM | Display Device Display Function | 640 x 480 high resolution graphical LCD, B&W Contrast, backlight ON/OFF, Invert screen; split window: upper and lower |
| FUNCTIONS | Marker Mode Internal Memory Peak Search Trace Number Power Measurement Trigger Limit Line Calibrate Signal Interface | Normal and delta mode; Number: Up to 10 in multi marker mode 100 traces and setup for Save/Recall To peak, to center, next peak, peak right, peak left and peak track Number: 2, tr A and B for display memory; Functions: peak hold, average, freeze, math; Detect: sample, peak+, AVG 1/2/3, quasi-peak ACPR x 2, OCBW, Channel Power Functions: Video, External; Mode: continuous, single; Source: video, external (0~5V rising edge); Setting: Trigger delay, Trigger frequency Number: 2, high and low; Functions: Edit: Insert, Delect, Undo Pass/Fail 100MHz, -30dBm RS-232C standard |
| CONNECTORS | RF Input External Reference Clock Input Reference Clock Output DC Input RS-232C | Type : N female, 50Ω nominal ; RF input VSWR : <1.5:1, @0dBm Reference Level Type: BNC female 1M, 1.544M, 2.048M, 5M, 10M, 10.24M, 13M, 15.36M, 15.4M, 19.2M Type: BNC female, 10MHz Jack: 5.5mm, 12V Sub-D 9 pins female |
| POWER SOURCE | | AC 100 ~ 240V, 48 ~ 63Hz |
| ACCESSORIES | | Instruction manual x 1, Power cord x 1 |
| DIMENSIONS & WEIGHT | | 330(W) x 170(H) x 340(D) mm, Approx. 4.5kg |

ORDERING INFORMATION - OPTION

| | | |
|---------|--|--|
| Opt. 01 | Tracking Generator | Frequency Range 9kHz ~ 2.7GHz Amplitude Range -50dBm ~ 0dBm Amplitude Accuracy ± 1dB@100MHz, 0dBm Amplitude Flatness ± 1.5dB@0dBm Harmonics <-30dBc typical Reverse Power +30dBm Impedance Type: N female, 50Ω nominal RF Output VSWR < 1.5 : 1 |
| Opt. 02 | AC/DC/Battery Operation with Battery pack | AC 100V ~ 240V, DC 12V and 10.8V Li-Ion battery pack x 2) |
| Opt. 03 | ± 1ppm Stability | ± 1ppm, 0 ~ 50°C, ± 1ppm/yr |
| Opt. 06 | GPIB Interface | IEEE 488 bus |
| Opt. 07 | Soft Carrying Case | GSC-001 |
| Opt. 08 | General Kit set | ADP-002: adaptor, SMA(J/F) ~ N(P/M) x 2 ATN-100: 10dB attenuator, N(J) ~ N(P) x 1 GTL-303: RF cable assembly(SMA(P), RD316, 600mm)x2 GSC-002: Kit box x 1 |
| Opt. 09 | CATV Kit set | ADP-001: adaptor, BNC(J/F) ~ N(P/M) x 2 ADP-101: adaptor, BNC(J/F) 75Ω ~ BNC(P/M) 50Ω x 2 GTL-304: RF cable assembly(RG223, N(P)-N(J), 300mm)x2 GSC-003: Kit box x 1 |
| Opt. 10 | RLB Kit set | GAK-001: termination 50Ω, N(P) x 1 GAK-002: Cap with chain, N(P) x 1 GTL-302: RF cable assembly(RG223, N(P), 300mm)x2 GSC-004: Kit box x 1 |
| Opt. 11 | DC Power Line | GTL-401: DC power cord with DC Jack and lighter plug, Current 5A |
| Opt. 12 | EMI Filters (*) | RBW Selections: 9kHz and 120kHz, 6dB bandwidth; RBW Accuracy: 15% |
| Opt. 13 | Demodulator (*) | Demodulation: AM, FM ; Output: Internal speaker, 3.5mm stereo jack wired for mono operation |
| Opt. 14 | EMI filters and 300Hz RBW (*) | RBW Selections: 9kHz and 120kHz, 6dB bandwidth 300Hz, 3dB bandwidth; RBW Accuracy: 15% |
| Opt. 15 | EMI filters and Demodulator (*) | RBW Selections: 9kHz and 120kHz, 6dB bandwidth RBW Accuracy: 15% Demodulation: AM, FM Output: Internal speaker, 3.5mm stereo jack wired for mono operation |
| Opt. 16 | EMI filters, 300Hz RBW and Demodulator (*) | RBW Selections: 9kHz and 120kHz, 6dB bandwidth 300Hz, 3dB bandwidth RBW Accuracy: 15% Demodulation: AM, FM Output: Internal speaker, 3.5mm stereo jack wired for mono operation |

Note : 1. (*)Only one option could be selected among option 12 to 16 for any given GSP-827 unit.
2. It is necessary to be installed by factory (ordering: Opt. 01, 02, 03, 06, 12, 13, 14, 15, 16)

Specifications subject to change without notice.

ISO-9001 & ISO-14001 CERTIFIED MANUFACTURER



GOOD WILL INSTRUMENT CO., LTD.

No. 95-11, Pao-Chung Road, Hsin-Tien City,
Taipei Hsien, Taiwan, R.O.C.
TEL: 886-2-29179188 FAX: 886-2-29179189
http://www.goodwill.com.tw
E-mail: marketing@goodwill.com.tw

U.S.A.

INSTEK CORP.

3661 Walnut Avenue
Chino, CA 91710, U.S.A.
Tel : +1-909-5918358
Fax : +1-909-5912280
http://www.instek.com

MALAYSIA

GOOD WILL Southeast Asia Sdn. Bhd.

Plot 522, Lorong Perusahaan Baru 3,
Prai Industrial Estate, 13600 Perai,
Penang, Malaysia.
Tel : +60-4-3981988
Fax : +60-4-3981989

CHINA

GOOD WILL Instrument(Shanghai)Co.,Ltd.

8F, of NO.2 Building, No.889 Yishan Road,
Shanghai, China.
TEL: +86-21-64853399
FAX: +86-21-54500789

SP-8270GD2BH