

## Product Datasheet - Technical Specifications



More information in our Web-Shop at ► [www.meilhaus.com](http://www.meilhaus.com) and in our download section.

### Your contact

**Technical and commercial sales, price information,  
quotations, demo/test equipment, consulting:**

Tel.: **+49 - 81 41 - 52 71-0**

FAX: **+49 - 81 41 - 52 71-129**

E-Mail: [sales@meilhaus.com](mailto:sales@meilhaus.com)

Downloads:

[www.meilhaus.com/en/infos/download.htm](http://www.meilhaus.com/en/infos/download.htm)

**Meilhaus Electronic GmbH** | Tel. **+49 - 81 41 - 52 71-0**  
Am Sonnenlicht 2 | Fax **+49 - 81 41 - 52 71-129**  
82239 Alling/Germany | E-Mail [sales@meilhaus.com](mailto:sales@meilhaus.com)

Mentioned company and product names may be registered trademarks of the respective companies. Prices in Euro plus VAT. Errors and omissions excepted.  
© Meilhaus Electronic.

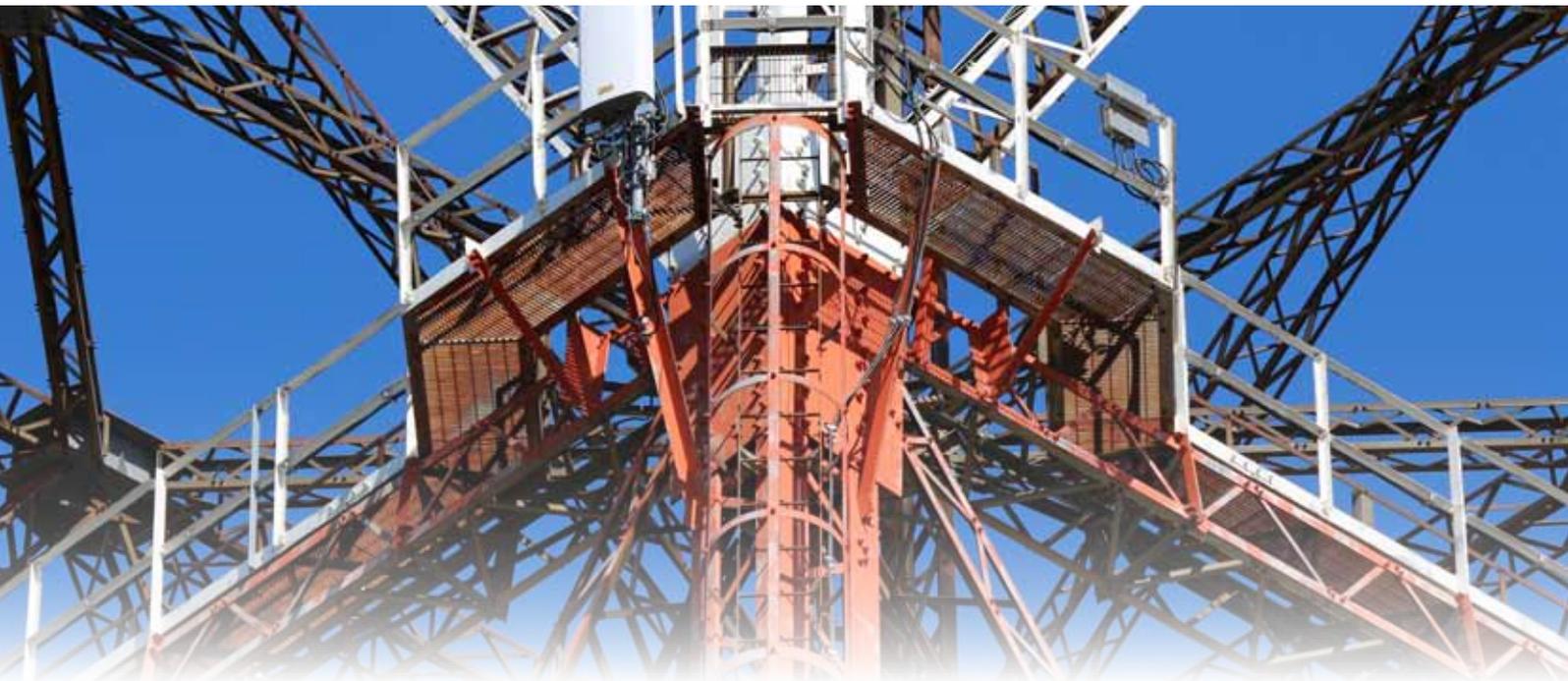
[www.meilhaus.de](http://www.meilhaus.de)

Adopting advanced techniques such as hybrid integration design of RF circuit and digital circuit, wideband fundamental-wave mixing, digital IF processing, intelligent power management, 3680A/B cable & antenna analyzer has advantages of high-speed, high-accuracy, compact, lightweight, battery-powered, touch screen operation, automatic adjustment of backlight brightness. Besides testing VSWR, return loss, characteristic impedance, and phase, it can precisely locate the fault points as well.

3680A/B cable & antenna analyzer is developed for on-site test, which is mainly used for the test of cable & antenna system in various communication base stations, including trunk-

king, GSM, PCS/DCS, CDMA, GPRS, WCDMA, CDMA2000, TD-SCDMA, LTE and paging system.

During the installation, calibration and routine maintenance of cable & antenna system, the cable & antenna analyser can help users to quickly estimate the status of the transmission and feed line system, improve the maintenance efficiency of the running base stations and speed up the installation and calibration of new base stations. Besides, it can also be used for the reflection parameter test of RF devices and components in scientific research, teaching and manufacturing.



# Main Characteristics

- Supports multiple measurements
- Touch screen operation
- Double window display
- List sweep
- Measurement wizard
- Data save/recall
- Embedded electronic calibration
- Power measurement
- Multiple display modes
- Resistant to wind & sand
- GPS location
- High-capacity battery
- Remote operation & tool software

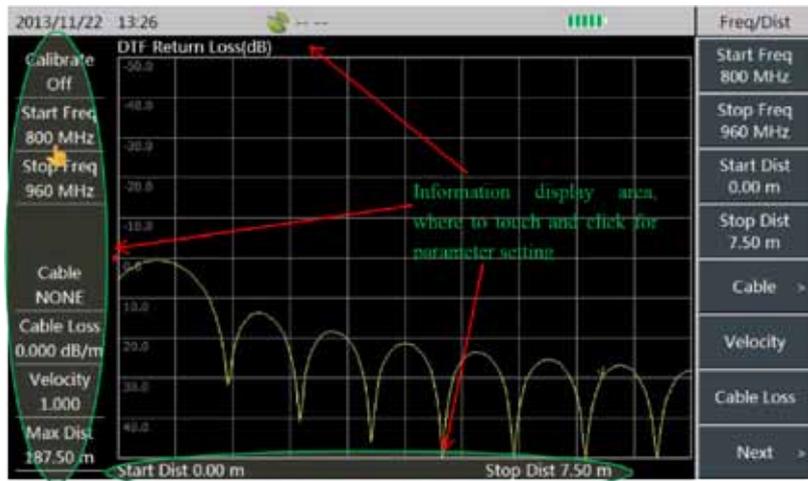
# Main Characteristics

## Supports multiple measurements

It supports 7 measurements: return loss, VSWR, cable loss, DTF return loss, DTF VSWR, Smith chart, phase. And it can conduct comprehensive measurement and fault diagnosis on cable and antenna system.

## Touch screen operations

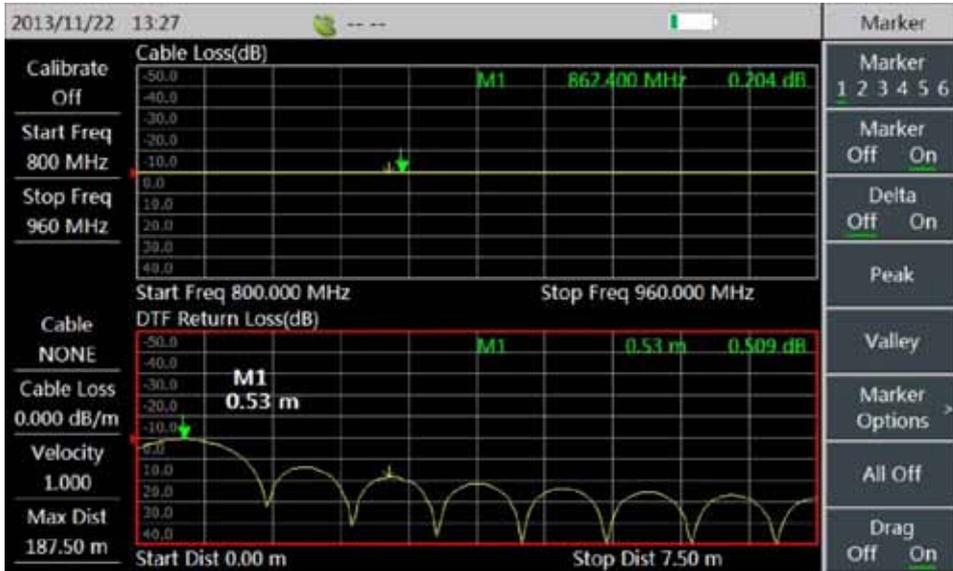
The instrument is designed with 7 inch LCD touch screen. Besides menu operation, users can also set the parameters by clicking all the displayed information on the touch screen.



The 7 measurement types can be switched by finger sliding, no need of menu operation.

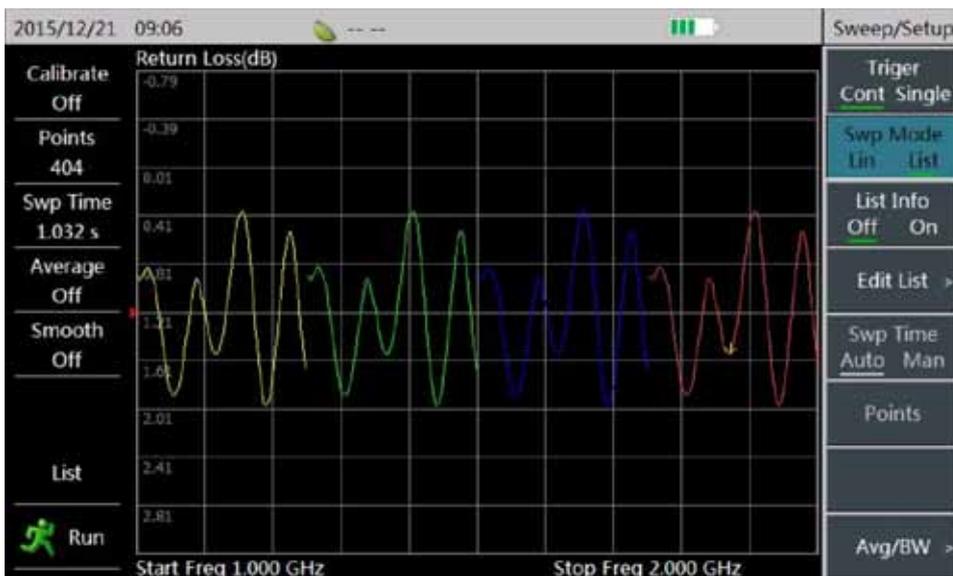
## Double window display

Each window can display different measurement types, with its independent marker function.



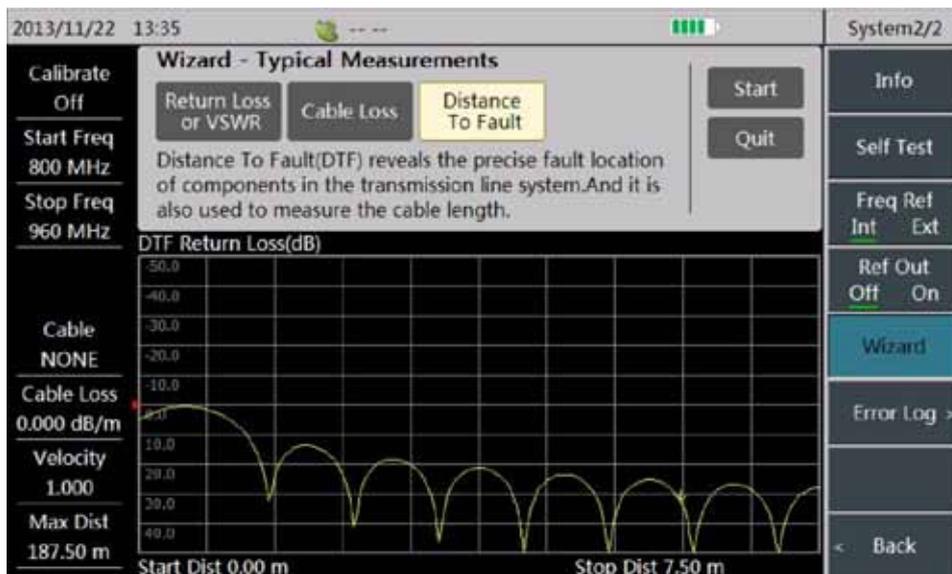
## List sweep

The instrument supports list sweep function. Multiple frequency segments can be simultaneously measured, and each sweep segment can be set with different points and frequency rang. The list edit is convenient: directly click the parameters to be edited. Each segment can be opened or closed through “on/off” setting.



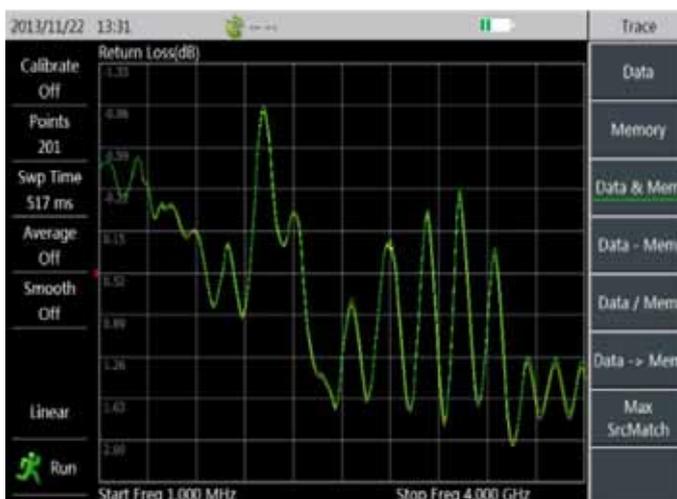
## Measurement wizard

The measurement wizard illustrates the operation steps of typical measurements to guide users to finish the measurement and helps them to rapidly get familiar with the instrument operation.



## Data save/recall

To save measurement traces or state, FLASH memory inside the instrument, SD card, and USB device are all available to choose.



## Embedded electronic calibration

3680A has embedded electronic calibration kit to realize “one-click” operation, without any external connection.



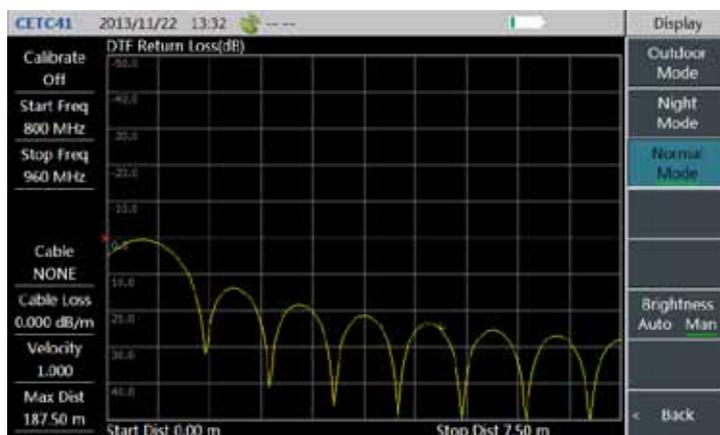
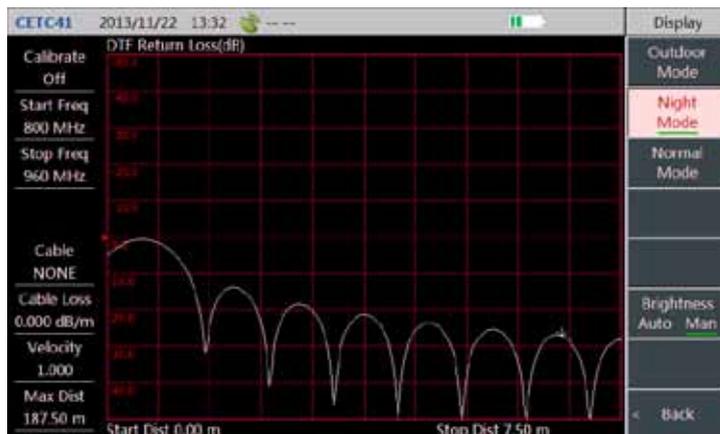
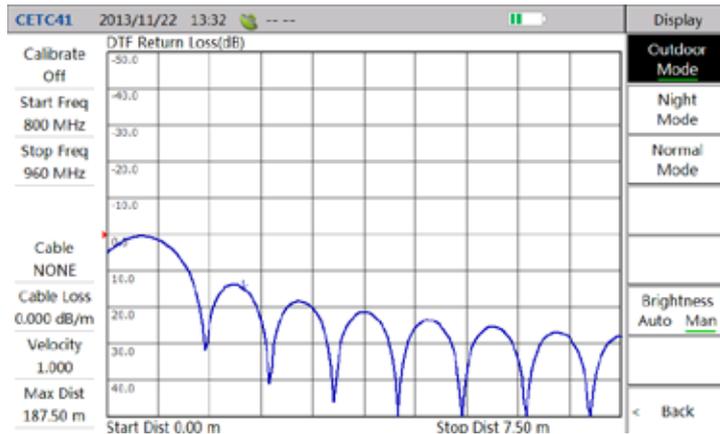
## Power measurement

Power measurement option is provided, which can realize accurate power measurement along with external power sensor options.



## Multiple display modes

The instrument has multiple display modes and function of screen brightness adjustment, which can offer the best display result in different environments.



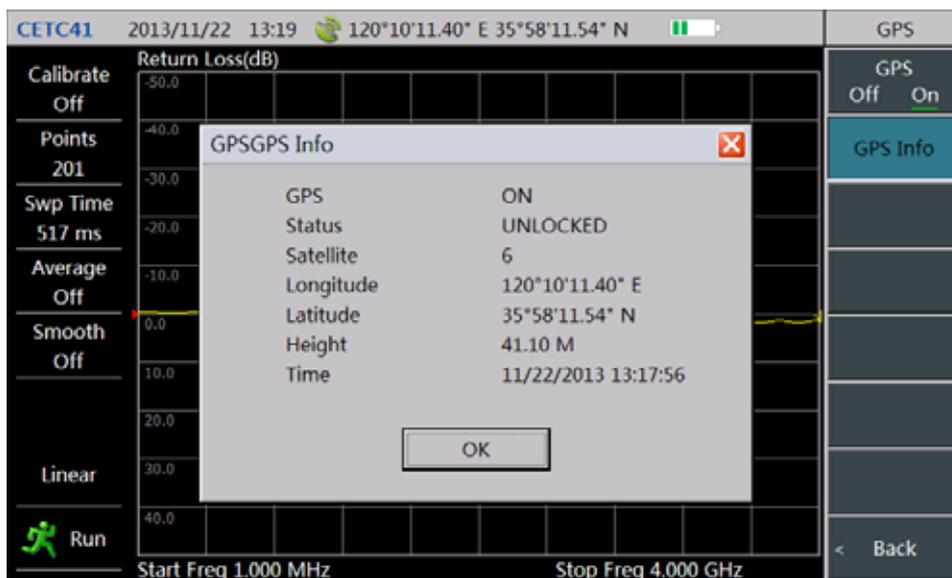
## Resistant to wind & sand

The instrument is suitable for field operation with its resistance to sand, dust, impact and vibration.



## GPS location

The instrument has built-in GPS receiver, with which users can get the current location information through externally added GPS antenna.



## High-capacity battery

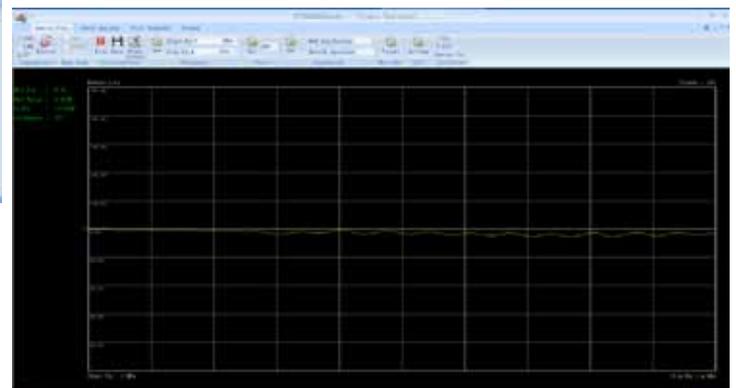
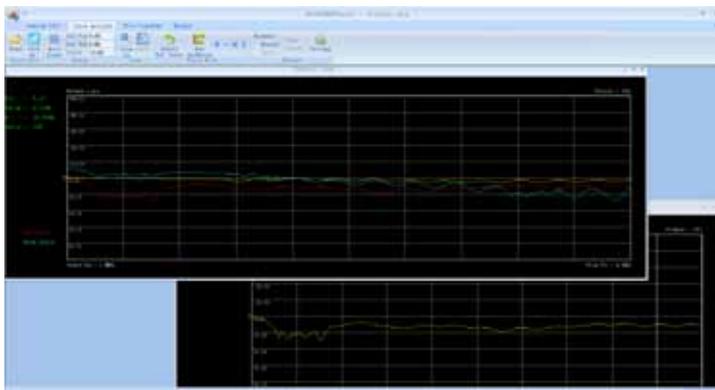
The built-in high-capacity lithium-ion rechargeable battery can support 3680A to operate 8 hours and 3680B to operate 4 hours. The battery replacement is easy and convenient.



## Remote operation & tool software

The instrument can be connected to PC via USB or Ethernet to realize remote operation. Tool software is also provided for data analysis, real-time data acquisition, and curve save & recall.

By trace dragging and comparison, traces from different windows can be moved to the same window for math operations.



- Performance measurement and maintenance of cable & antenna system

3680A/B cable & antenna analyzer is developed for the daily measurement & maintenance of cable & antenna system, which can realize the measurement of VSWR, return loss, cable loss etc. It has unique FDR technique, and with functions of Distance-to-Fault (DTF) VSWR and Distance-to-Fault (DTF) return loss, it can precisely locate even tiny problems, and thus eliminate potential risks. During the installation, calibration and routine maintenance of the cable & antenna system, 3680A/B cable & antenna analyzer can help users to quickly estimate the status of the transmission and feed line system, which can improve the maintenance efficiency of the running base station and speed up the installation and calibration of new base stations.

- Cable & antenna performance measurement

3680A/B cable & antenna analyzer offers multiple measurement modes to measure the cable loss, return loss, and VSWR of the cables.

# Technical Specifications

Model	3680A	3680B
Frequency range	1MHz~4GHz	1MHz~8GHz
Initial frequency error	$\pm 2 \times 10^{-6}$ (23°C)	$\pm 2.5 \times 10^{-6}$ (23°C)
Frequency temperature stability	$\pm 1 \times 10^{-6} / 10^\circ\text{C}$ (23°C)	$\pm 1 \times 10^{-6} / 10^\circ\text{C}$ (23°C)
Frequency resolution	1kHz	1kHz
Directivity	$\geq 42\text{dB}$ (mechanical calibration) $\geq 35\text{dB}$ (embedded electronic calibration)	$\geq 42\text{dB}$ (1MHz~6GHz) $\geq 36\text{dB}$ (6GHz~8GHz)
Source match	$\geq 31\text{dB}$ (mechanical calibration)	$\geq 31\text{dB}$
Reflection track	$\pm 0.08\text{dB}$ (mechanical calibration)	$\pm 0.08\text{dB}$
Battery capacity	8h (without embedded calibration option, 70% brightness) 6h (with embedded calibration option)	4h
Power consumption	$\leq 15\text{W}$ (no battery charging) $\leq 54\text{W}$ (battery charging)	$\leq 18\text{W}$ (no battery charging) $\leq 54\text{W}$ (battery charging)
Sweep time	1ms/frequency point (10kHz IF band- width)	
Power adapter	AC power: 110V (1±10%) or 220V (1±10%), 50Hz (1±5%)	
Dimensions	295mm (W)×205mm (H)×70mm (D)	
Weight	2.5kg (with battery)	
Operation temperature	-10°C~+50°C	
Storage temperature	-40°C~+70°C	
Electromagnetic compatibility	Conforms to requirements of GJ- B3947A-2009 3.9.1	
Test port	Type N, female	
10MHz input/output port	BNC	
GPS antenna interface	BNC	

Main unit: 3680A cable & antenna analyzer (1MHz~4GHz)

Main unit: 3680B cable & antenna analyzer (1MHz~8GHz)

### Standard Accessories

No.	Description	Remarks
1	Power cord	Standard 3-core power cord
2	Power adapter	
3	Quick start guide	1 pc
4	PC tool software CD	
5	USB cable	
6	Built-in rechargeable lithium-ion battery	
7	Charger on vehicle	
8	Certificate of conformity	

## Options

No.	Description	Function
3680A-001	English options	
3680A-002	User manual (in English)	
3680A-003	User manual (in Chinese)	
3680A-004	Programming manual (in Chinese)	
3680A-005	Programming manual (in English)	
3680A-006	USB power measurement	Power measurement
3680A-007	AV87230 USB CW power sensor	9kHz~6GHz power sensor
3680A-008	AV87231 USB CW power sensor	10MHz~18GHz power sensor
3680A-009	AV87232 USB CW power sensor	50MHz~26.5GHz power sensor
3680A-010	AV87233 USB CW power sensor	50MHz~40GHz power sensor
3680A-011	Rechargeable lithium-ion battery	Spare battery
3680A-012	N-type male calibration kit AV31101A	DC~18GHz calibration kit
3680A-013	N-type female calibration kit AV31101B	DC~18GHz calibration kit
3680A-014	N-type male calibration kit AV20201A	DC~9GHz calibration kit
3680A-015	N-type female calibration kit AV20201B	DC~9GHz calibration kit
3680A-016	Functional bag	
3680A-017	Carrying backpack	
3680A-018	Transportation case	
3680A-019	N-DIN adapter L29/N-KJ-T	N-DIN adapter
3680A-020	N-DIN adapter L29/N-JJ-T	N-DIN adapter
3680A-021	GPS antenna	GPS external antenna
3680A-022	Low-loss cable N-JK (80cm)	test port extending cable
3680A-023	Low-loss cable N-JJ (80cm)	test port extending cable
3680A-024	purple cat5e cable (2m)	Point-to-point cable
3680A-025	MicroSD Class4	8G
3680A-026	Power adapter	Power adapter
3680A-027	Embedded electronic calibration kit	Built-in
3680A-028	Economical calibration kits (male)	
AV20201AE	DC~9GHz calibration kit	
3680A-029	Economical calibration kits (female)	
AV20201BE	DC~9GHz calibration kit	