www.gctm.net

GC723A / GC724B

Cable and Antenna Analyzer

innertron

GenComm

GC723A / GC724B

Cable and Antenna Analyzer

Introduction

A large number of abnormal cell site problems are typically caused by the antenna system, cable and connectors, or both. It's important to have the right instrument available when either servicing or certifying cell sites for operation.

The GC723A and GC724B Cable and Antenna Analyzers are the optimal portable diagnostic tool needed to accurately detect operational problems in cell sites.

The GC723A and GC724B have all of the measurement functions necessary to accurately verify the site's antenna system from VSWR to power measurements.

In addition, the GC723A and GC724B make distance-to-fault measurements in order to accurately locate the fault's location.

A touch panel operation with a 7" color display allows measurements to be easily made and displayed.
Its application specific software, GCViewer, allows the user to easily compare and analyze measurements and generate professional reports.

The GC723A and GC724B were designed for field testing operation and are equipped with a rechargeable field replaceable lithium-ion battery, which enables continuous operation for more than three hours.

Key Measurements

- VSWR
- DTF (Distance to Fault)
- Cable Loss
- Power Meter

Features

- Portable and lightweight instrument < 2.0kg (4.4lbs)
- Handheld operation
- Built-in worldwide RF signal standards and frequency bands
- 7 inch TFT color display (viewable in daylight)
- Easy to operate through touch screen
- Superior immunity to RF interferences
- Up to 1001 data points to locate long distance problems
- External USB memory capability
- Up to 6 trace markers
- Saves up to 20 user definable setups
- Interface with application software, GCViewer, for data management
- Saves up to 400 measurement traces
- Saves up to 100 measurement screens
- Alphanumeric labeling of saved measurements
- Automatic time stamps of saved data
- Rechargeable and field replaceable lithium-ion battery

Main Functions*

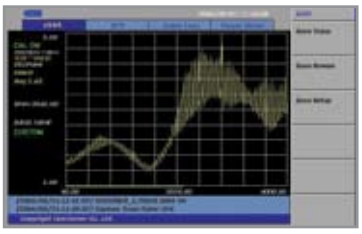
GC723A / GC724B Cable and Antenna Analyzer

* All specifications are common for both GC723A and GC724B, otherwise specified.

VSWR

The GC723A and GC724B make high resolution VSWR measurements

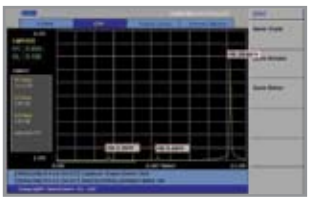
- Frequency Range
  - GC723A: 100 ~ 2700MHz
  - GC724B: 25 ~ 4000MHz
- Dynamic Range: 60dB
- High resolution mode with 1001 ponits
- Built-in over 80 worldwide RF signal standards
- Registers user definable RF bands into a Custom band list
- Provides an alarm limit line

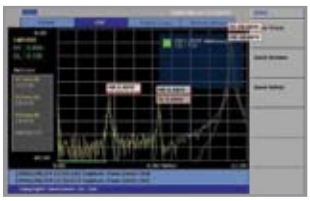


DTF (Distance to Fault)

The DTF measurement function allows users to accurately identify faulty locations

- Frequency Range
  - GC723A: 100 ~ 2700MHz
  - GC724B: 25 ~ 4000MHz
- Distance: Up to 1250m (4125ft)
- Dynamic Range: 60dB
- Built-in over 95 standard cable characteristics
- Registers user definable cables into a Custom cable list

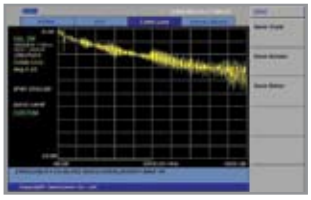


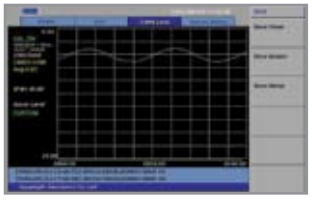


Cable Loss

Cable Loss measures the energy absorbed or lost by the transmission line, it facilitates users to analyze the cable characteristics and the signal loss throughout the transmission line

- Frequency Range
  - GC723A: 100 ~ 2700MHz
  - GC724B: 25 ~ 4000MHz
- Dynamic Range: 0 ~ 30dB
- Provides an alarm limit line





Power Meter

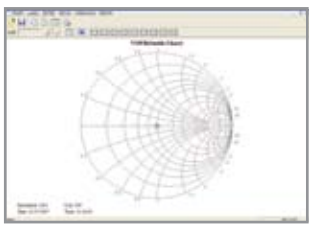
The Power Meter function makes power measurements with optional power sensors displaying the results in dBm or Watts

- Plug and play external power sensors
- Upper limit can be set for Pass/Fail indication
- Power sensor types:
  - Directional Power Sensor
  - Terminating Power Sensor

Application Software

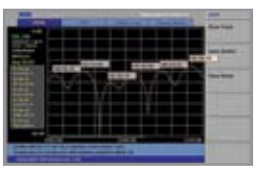
The GC723A and GC724B Application Software, GCViewer, provides all the necessary tools to operate the instrument more conveniently, including:

- Supports Smith Chart
- VSWR-Smith Chart Conversion
- Captures saved plots from the GC723A and GC724B
- Registers or edits user definable RF bands into a Custom bands list
- Registers or edits user definable cables into a Custom cables list
- Edits measurement charts
- Report template available
- Generates and prints reports



Supplementary Functions

- Captures up to 4 traces
- Overlays up to 4 traces in one screen
- Supports up to 6 markers simultaneously



Excellent Performance and Portability, Ideal for Field Testing

DC 15V IN
External DC input port

RF OUT
50ohm N-type RF Connector, Outputs swept signal to DUT

SERIAL
D-sub serial interface port to connect an optional external power sensor

USB
USB Memory Stick port, used for elther saving measurement data or upgrading the instrument's firmware

LAN
Ethernet Communlcation port to connect a PC with the application software

VSWR
Measures impedance matching

DTF
Measures distance to fault location

CABLE LOSS
Measures cable insertion loss

POWER METER
Measures transmission power

SYSTEM
Identifies and/or revises system information or upgrade firmware

CAL
Calibration on selected frequency band in VSWR, DTF and Cable Loss measurements

Power & LED
Power On/Off
Greed LED : Power On Status
Red LED : External power

7"Color LCD
Daylight viewable high resolution LCD display

Screen Menu
Displays selectable menu in connection with function keys or soft keys

Soft Key
Selects menu displayed on the screen

SPEAKER
Sounds intemal beep if it is ON

KNOB & UP/DOWN
Moves marker positions or items on the table list

LOAD
Recalls saved traces to compare with current or other saved traces

MARKER
Supports six markers for each trace

AMP
Sets Y-axis Min/Max, Limit and Limit Level

SAVE
Saves Current, Screen, Trace or Setup

TRACE
Captures up to 4 traces
Assigns saved trace to Trace CH

FREQ / DIST
Sets frequency ranges in VSWR and Cable Loss mode.
Selects standard or custom frequency band. Selects standard cables or register custom cables in DTF mode.

LIGHT
Sets LCD Brightness

PEAK
Searches the highest peak of signal

TRACE POINT
Selects trace points among 126, 251, 501 or 1001

SCALE
Sets Y-axis scale, VSWR & Return Loss

AUTO SCALE
Adjusts Y scale on screen for optimal display of traces

ESC
Cancels inputs or moves to previous menu

HOLD
Pauses current measurement display

ENTER
Inputs numeric values

Specifications / Ordering Information

GC723A / GC724B Cable and Antenna Analyzer

Specifications

General	
Max Input Power	+25dBm
Frequency Accuracy	<±75ppm
Frequency Resolution	100kHz
Test Port Impedance	50Ω
Test Port	Type N, Female
Trace Storage	Up to 400
Screen Storage	Up to 100
Setup Storage	Up to 20

VSWR	
Frequency Range	25 ~ 4000MHz (GC724B)
	100 ~ 2700MHz (GC723A)
Data Points	126, 251, 501, 1001
Return Loss	0 ~ 60dB
VSWR Range	1 ~ 65
Measurement Speed	1, 1.3, 2.5, 5sec for each data points

Cable Loss	
Frequency Range	25 ~ 4000MHz (GC724B)
	100 ~ 2700MHz (GC723A)
Cable Loss Range	0 ~ 30dB
Resolution	0.01dB

DTF (Distance to Fault)	
Frequency Range	25 ~ 4000MHz (GC724B)
	100 ~ 2700MHz (GC723A)
Distance	0 ~ 1250m (4125ft)
Horizontal Range	0 to (# of data points-1) x (resolution-1)/2
Resolution	$(1.5x10^8)(V_P)/(Delta)(ZF)$ V_P : cable's relative propagation velocity Delta[Hz] = Stop Freq - Start Freq ZF(Zoom Factor) = Setup Dist./Max Dist.
Return Loss	0 ~ 60dB
VSWR	1 ~ 65

Immunity to Interfering Signals	
On Frequency	+ 5dBm
On Channel	+ 17dBm

RF Power Meter (Requires GC731A or GC732A)	
Display Range	-80 ~ +80dBm
Offset Range	0 ~ 60dB
Resolution	0.01dB or 0.1xW
Directional Power Sensor (GC731A)	
Sensor Type	Average and Peak Power Sensors
Frequency Range	300 ~ 3800MHz
Measurement Range	Average : +21.76 ~ +51.76dBm (0.15 ~ 150W) Peak : +36.02 ~ +56.02dBm (4 ~ 400W)
Measurement Uncertainty	± 4% of reading above 35°C or below 15°C adds 3%
Input VSWR	300 ~ 3000MHz < 1.07 3000 ~ 3800MHz < 1.10
Connector Type	N, Female
Terminating Power Sensor (GC732A)	
Sensor Type	Average
Frequency Range	20 ~ 3800MHz
Measurement Range	-30 ~ +20dBm (1uW ~ 100mW)
Measurement Uncertainty	± 7%
Input VSWR	20 ~ 2500MHz < 1.12 2500 ~ 3800MHz < 1.25
Connector Type	N, Female

Miscellaneous	
Dimension	260 x 190 x 60mm (10.2" x 7.5" x 2.4")
Weight	< 2.0kg (4.4lbs) includes battery
Battery	Li-ion (>3hrs continuous operating)

Environmental Condition	
Operating Temperature	0 ~ 50 °C (32 ~ 122 °F)
Storage Temperature	-40 ~ 80 °C (-40 ~ 176 °F)
Humidity	95% No Condensation

Specifications and product description subject to change without notice

Ordering Information

Basic Models

- GC723A Cable and Antenna Analyzer (100 ~ 2700MHz)
- GC724B Cable and Antenna Analyzer (25 ~ 4000MHz)

Standard Accessories

- GC723-50541 : Soft Carrying Case
- GC724-50522 : AC-DC Adapter
- G7105-50335 : Cross LAN Cable (1.5m)
- GC723-50513 : 256MByte USB Memory
- GC724-50523 : Automotive Cigarette Lighter/ 12V DC Adapter
- GC724-50321 : Lithium-Ion Battery
- G7105-50316 : Stylus Pen
- GC723-50561 : User's Manual and Application Software CD

Optional Accessories

- GC724-50509 : Calibration Kit, 40dB, 4GHz
- GC724-50531 : RF Cable, 1.5m, N(m)-N(f)
- GC724-50532 : RF Cable, 3.0m, N(m)-N(f)
- GC724-50542 : Hard Case
- GC723-50562 : GC723A/GC724B User's Manual- Printed Version
- G7000-50571 : Adapter N(m) to DIN(f), DC to 7.5GHz, 50Ω
- G7000-50572 : Adapter DIN(m) to DIN(m), DC to 7.5GHz, 50Ω
- G7000-50573 : Adapter N(m) to SMA(f), DC to 18GHz, 50Ω
- G7000-50574 : Adapter N(m) to BNC(f), DC to 2GHz, 50Ω

High Accuracy Power Meter Accessories

- GC731A : Directional Power Sensor (300 ~ 3800MHz, Average Power +21.76 ~ +51.76dBm, Peak Power +36.02 ~ +56.02dBm)
- GC732A : Terminating Average Power Sensor (20 ~ 3800MHz, -30 ~ +20dBm)

GC723A
GC724B

Cable and Antenna Analyzer

innertron

GenComm

Corporate Office
14 Floor E&C Dream Tower VII,
60-44 Gasan-Dong, Kumchun-Gu,
Seoul 153-801, Korea
Tel +82-2-6676-7070
Fax +82-2-6676-7040
Web www.gencomm.co.kr

Customer Support
Tel +82-2-6676-7090
Email support@gencomm.co.kr

Sales (Korea)
Tel +82-2-6676-7080
Email sales@gencomm.co.kr

International Sales & Marketing Office
1159 Sonora Court
Sunnyvale, CA 94086, USA
Tel +1-408-694-3900
Email sales@gctm.net
Web www.gctm.net