

Agilent GS-8210 Wireless Handset Test System

Datasheet



Test Software Benefits:

- Easy to set up
- Simple, fast and automated in-store testing of mobile phones
- Ability to generate test reports in html, PDF (acrobat distiller needed) and CSV format

RF Shielded Test Chamber Overview

Agilent also offers RF shield box with good RF isolation for wireless handset testing. The RF shield box offers the environment to stimulate call operation over the air, ensures reliable test results and avoid conflicts with real networks.

Features and Benefits

- **Quad-band test capability**
- **SMS test capability**
- **Six traffic-channel test in automatic mode**
- **Multi-format test capability for GSM/GPRS/EDGE and W-CDMA**
- **Future upgradable format: CDMA2000, 1xEV-DO, HSDPA and TD-SCDMA**

Test System Overview

Agilent GS-8210 Wireless Handset Repair Test System is a cost efficient functional test system designed for cellular phone repair testing. The system comprises a GSM/GPRS/EDGE and W-CDMA mobile station tester, test software and RF shield box with build-in antenna coupler.

Test Software Overview

GS-8210 test software provides simple and yet complete parametrics test for engineering and production usages. User has the flexibility to configure the test software through user-friendly graphical interface.



Ordering Information

GS-8210 Model Number – N9360A

Options

Option 034* – Communication test set to support GSM/GPRS/EDGE/W-CDMA

Option W34 – Test software to support GSM/GPRS/EDGE/W-CDMA

Option S01 – RF shielded test chamber with 2 x N-type connector

Option S02 – RF shielded test chamber with 2 x N-type & USB connector

Option S03 – RF shielded test chamber with 2 x N-type & D-SUB 25 connector

Option S04 – RF shielded test chamber with 2 x N-type, USB & D-SUB 25 connector

Option C01** – RF cable option (1 meter)

Option C02 – GPIB cable option (1 meter)

Option C03 – USB/GPIB interface to control GPIB instruments over USB

Option C04 – RS232 serial cable

Option C05 – LAN crossover cable

Option A01 – Additional test SIM option

Option A02 – Additional antenna coupler option

*Include 1x Test SIM & 1x Antenna Coupler

** Recommended pick with RF Shielded Test Chamber

Technical Specification

Frequency Bands for GSM/GPRS/EDGE

| Band | Frequency (MHz) | |
|---------|-----------------|-------------|
| | Up Link | Down Link |
| GSM850 | 824 ~ 849 | 869 ~ 894 |
| GSM900 | 876 ~ 915 | 921 ~ 960 |
| DCS1800 | 1710 ~ 1785 | 1805 ~ 1880 |
| PCS1900 | 1850 ~ 1910 | 1930 ~ 1990 |

Frequency Bands for W-CDMA

| Band | Frequency (MHz) | |
|----------|-----------------|-------------|
| | Up Link | Down Link |
| Band I | 1920 ~ 1980 | 2110 ~ 2170 |
| Band II | 1850 ~ 1910 | 1930 ~ 1990 |
| Band III | 1710 ~ 1785 | 1805 ~ 1880 |
| Band IV | 1710 ~ 1770 | 2110 ~ 2170 |
| Band V | 824 ~ 849 | 869 ~ 894 |
| Band VI | 830 ~ 840 | 875 ~ 885 |

N9360A-034 for GSM/GPRS/EDGE

Peak TX Power Measurement

| Item | Specification | Unit |
|------------|---|------|
| Range | -20 to +39 | dBm |
| Resolution | 0.1 | dB |
| Accuracy | $\leq \pm 1.0$ (25 \pm 5 deg C) Typical = ± 0.5 $\leq \pm 1.5$ (0 to 50 deg C) | dB |

Power Ramp

| Item | Specification | Unit |
|--------------------------|---|--------------------|
| Range | -20 to +39 | dBm |
| Resolution | 0.1 | dB |
| Accuracy | $\leq \pm 1.0$ (25 \pm 5 deg C) $\leq \pm 1.5$ (0 to 50 deg C) | dB |
| Range for display | | |
| Vertical | 80 | dB |
| Horizontal | Zoom off | -9.25 to +156.25 |
| | Zoom on | -8.00 to +2.00 |
| | | +145.00 to +155.00 |

Frequency Error Measurement

| Item | Specification | Unit |
|-------------|---|------|
| Range | 0 to ± 60 | kHz |
| Resolution | 1 | Hz |
| Accuracy | $\leq \pm (10 + \text{Reference signal})$ | Hz |
| Input level | -5 to +39 | dBm |

Phase Error Measurement

| Item | Specification | Unit |
|-------------|--|----------|
| Range | -20 to +20 | deg |
| Resolution | 0.1 | deg |
| Accuracy | GSM850, GSM900: $\leq \pm 1.0$ DCS1800, PCS1900: $\leq \pm 1.5$ | deg RMS |
| | GSM850, GSM900: $\leq \pm 4.0$ DCS1800, PCS1900: $\leq \pm 6.0$ | deg Peak |
| Input level | -5 to +39 | dBm |

Burst Timing

| Item | Specification | Unit |
|-------------|---------------|------|
| Range | -9.9 to +9.9 | Bits |
| Resolution | 0.1 | Bits |
| Input level | -5 to +39 | dBm |

BER, FER

| Item | Specification | Unit |
|-------------|---|------|
| Range | BER (PN9 Fixed) 0.00 to 99.99 BER (PN9) 0.00 to 25.00 BER (PN15) 0.00 to 33.33 FER 0.00 to 99.99 | % |
| Type | BER (Class Ib, Class II) | |
| Input level | -5 to +39 | dBm |

RX Quality

| Item | Specification | Unit |
|------------|---------------|------------|
| Range | 0 to 7 | Range |
| Resolution | 1 | Resolution |

RX Level

| Item | Specification | Unit |
|------------|---------------|------------|
| Range | 0 to 63 | Range |
| Resolution | 1 | Resolution |

Actual Timing Advance

| Item | Specification | Unit |
|------------|---------------|------|
| Range | 0 to 63 | Bits |
| Resolution | 1 | Bit |

EVM Measurement (EDGE 8PSK)

| Item | Specification | Unit |
|--------------|---------------|------|
| Range | 0 to 10 | % |
| Resolution | 0.01 | % |
| Residual EVM | ≤ 3.8 | % |
| Input level | -5 to +39 | dBm |

ORFS Measurement (EDGE 8PSK)

| Item | Specification | Unit |
|--------------------|--------------------|------|
| Range | ≤ -57 @400kHz | dB |
| Resolution | 0.1 | dB |
| Measurement points | Fc-400, fc+400 | KHz |
| Input level | 0 to +39 | dBm |

Spectrum Monitor

| Item | Specification | Unit |
|--------------------------------|---|--------------------------|
| Range | -11 to +39 | dBm |
| Span | fc to fc+400 fc±100 | kHz |
| RBW | 10, 30 | kHz |
| Range for display | Span [kHz] fc to fc+400 fc±100 | Level 80 80 |
| Accuracy | ≤ ±2 | dB |
| Resolution | 0.1 | dB |
| Noise level (Pin = +29 dBm) | ≤ -35 | dB |

N360A-034 for W-CDMA

Modulated Power Measurement

| Item | Specification | Unit | |
|---------------------------|--|---|----|
| Input range | -60 to +36 | dBm | |
| Resolution | 0.01 | dB | |
| Resolution for display | Open Loop 0.1 Inner Loop 0.01 MAX TX Power 0.01 PRACH Power 0.1 | dB | |
| Accuracy | | | |
| MAX TX Power | 0 to +36 [dBm] | ≤ ±0.7 (25 ± 5 deg C) Typical = ±0.4 ≤ ±1.0 (0 to 50 deg C) | dB |
| | -53 to -0.01 [dBm] | ≤ ±1.0 (25 ± 5 deg C) Typical = ±0.5 ≤ ±1.5 (0 to 50 deg C) | |
| | -60 to -53.01 [dBm] | ≤ ±1.5 (25 ± 5 deg C) Typical = ±0.8 ≤ ±2.0 (0 to 50 deg C) | |
| Inner Loop | -20 to +36 [dBm] | ≤ 1 dB ctrl: ± 0.2 ≤ 10 dB ctrl: ± 0.5 | |

Frequency Error Measurement

| Item | Specification | Unit |
|-------------|---------------------------|------|
| Range | 0 to ±500 | Hz |
| Resolution | 0.1 | Hz |
| Accuracy | ≤ ± (10+Reference signal) | Hz |
| Input level | -20 to +36 | dBm |

EVM Measurement

| Item | Specification | Unit |
|--------------|---------------|------|
| Range | 0 to 20 | % |
| Resolution | 0.01 | % |
| Residual EVM | ≤ 3.8 | % |
| Input Level | -20 to +36 | dBm |

ACLR Measurement

| Item | Specification | Unit |
|-------------|---|------|
| Input level | -5 to +36 | dBm |
| Range | 0 to -40 (@5 MHz) 0 to -48 (@10 MHz) | dB |
| Resolution | 0.01 | dB |

OBW Measurement

| Item | Specification | Unit |
|-------------|---------------|------|
| Input level | -5 to +36 | dBm |
| Accuracy | < ±100 | kHz |
| Range | 0.00 to 9.99 | MHz |
| Resolution | 0.01 | MHz |

Sensitivity/BER

| Item | Specification | Unit |
|-------------|---|------|
| Input level | -20 to +36 | dBm |
| Range | PN9: 0.00 to 25.00 PN15: 0.00 to 33.33 | % |

RF Signal Generator for GSM/GPRS/EDGE

| Item | Specification | Unit |
|-----------------------------|--|-----------------------|
| Frequency step (MODEM) | 0.1 (Range: carrier \pm 200 kHz) | kHz |
| Modulation | GMSK(B.T=0.3) 8 PSK OFF (CW) | |
| Output power accuracy | @-110.0 to -50.0 dBm $\leq \pm 1$ (25 \pm 5 deg C) Typical = ± 0.5 $\leq \pm 1.5$ (0 to 50 deg C) | dB |
| | @-50.0 to -20.0 dBm $\leq \pm 1.5$ (25 \pm 5 deg C) Typical = ± 0.7 $\leq \pm 2.0$ (0 to 50 deg C) | |
| Phase error (GMSK) | ≤ 5 ≤ 15 | deg. RMS deg. Peak |
| Modulation accuracy (8 PSK) | ≤ 12.5 | %RMS |
| Power level step | 0.1 | dB |
| Power level range | | |
| Auto/Man | -110.0 to -50.0 [dBm] in 0.1 [dB] steps | |
| Tx analyzer | -110.0 to -50.0 [dBm] in 0.1 [dB] steps | |
| SG | -110.0 to -20.0 [dBm] in 0.1 [dB] steps | |
| Off | < -120.0 | |

RF Signal Generator for W-CDMA

| Item | Specification | Unit |
|-----------------------|---|------|
| Modulation | W-CDMA: QPSK Off: CW | |
| Modulation accuracy | QPSK ≤ 12.5 | %RMS |
| Output power Accuracy | @-115.0 to -50.0 dBm $\leq \pm 1$ (25 \pm 5 deg C) $\leq \pm 1.5$ (0 to 50 deg C) | dB |
| | @-50.0 to -18.0 dBm $\leq \pm 1.5$ (25 \pm 5 deg C) $\leq \pm 2.0$ (0 to 50 deg C) | |
| Frequency | Band I 2110 to 2170 Band II 1930 to 1990 (1932.5, 1937.5, 1942.5, 1947.5, 1952.5, 1957.5, 1962.5, 1967.5, 1972.5, 1977.5, 1982.5, 1987.5) Band III 1805 to 1880 Band IV 2110 to 2170 Band V 869 to 894 (871.5, 872.5, 876.5, 877.5, 882.5, 887.5) Band VI 875 to 885 (877.5, 882.5) | MHz |
| Power level step | 0.1 | dB |
| Power level range | Mod -115.0 to -18.0 [dBm] in 0.1 [dB] steps CW -115.0 to -18.0 [dBm] in 0.1 [dB] steps Off ≤ -120.0 | dBm |

Physical Specification

RF Shield Box (N9360A-SOX)

| | |
|---------------------------|---|
| Dimension | H-rear = 180mm; H-front = 100mm W = 300mm D = 350mm |
| Operation method | Manual open/close operation using a single locking at the front. Mounting screw on the base for nest/fixture mounting. |
| Rear panel | 2 x N-type connector USB connector (Options) D-SUB 25 connector (Options) |
| Material | Body – steel with powder coating Lid & Rear panel – Al RF gasket for Lid & Rear panel |
| RF Shielding | 60dB up to 2GHz |
| Build in Flat type | 800 to 2000MHz |
| Antenna Coupler | Insertion loss: 10 to 18 dB VSWR: 1:1.7 or better |
| Accuracy | ± (10Hz + Reference Accuracy) |
| Resolution | 0.01 dB |

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(tel) 800 810 0189
(fax) 800 820 2816

Europe

(tel) (31 20) 547 2111
(fax) (31 20) 547 2390

Japan

(tel) (81) 426 56 7832
(fax) (81) 426 56 7840

Korea

(tel) (82 2) 2004 5004
(fax) (82 2) 2004 5115

Latin America

(tel) (650) 752 5000

Taiwan

(tel) 0800 047 866
(fax) 0800 286 331

Other Asia Pacific Countries

(tel) (65) 6375 8100
(fax) (65) 6836 0252
Email: tm_asia@agilent.com



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