

PHS35D

COMMUNICATION INSTRUMENTS

PHS HANDY ANALYZER



General

- Compact, light-weight PHS analyzer with large screen and power-saving design, ideal in the field use.
- Data analysis software with wealth of features
- Ideal for checking of service areas and maintenance at PHS public/private system cell stations compliant with ARIB (RCR STD-28) standards
- Ideal for development and checking of link protocol control software at mobile station terminals
- Built-in 2-RF circuits offer 2 slots multi-monitoring on both high-speed handover and 64kbps high-speed data communications.
- Capable of measurement data stored
Standard memory 1MB Max. saved 1,000 data (Depend on data size)
Optional memory Compact flash memory card available
- USB in PC I/F

Features

- Cell station measurement
 - SCAN (non-designate cell station measurement)
 - LCCH (designate cell station measurement)
 - INTERVAL (non-designate cell station time difference measurement)
 - WAVE (Burst wave monitoring)
- Spectrum measurement
 - RES MON (designate cell station resource monitor)
- Link measurement
 - PROTOCOL (Link protocol monitor)
 - PIAFS (32k/64k communication monitor)
 - TCH ERR (Communication channel error measurement)
 - LCC+SCH (Super framed and link monitor)
- Control channel setting
 - Enabling to assign carrier number 1 to 10 ch to control channel.

Specifications

- Electrical characteristics
 - Reception frequency range
1880.15 to 1929.65 MHz
 - Reception frequency setting
Carrier number 206 to 255, 1 to 116
 - Reference frequency accuracy
 $\pm 3 \times 10^{-6}$
 - Wireless access system
TDMA-TDD
 - Modulation system $\pi/4$ sift QPSK
 - Signal transmission rate
384 kbps
 - Signal level measurement range and accuracy
 - Attenuator OFF 10 to 45 dB μ V (EMF), ± 3 dB μ V
(251 to 255, 1 to 82 ch)
13 to 45 dB μ V (EMF), +1 dB μ V/-5 dB μ V
(206 to 250, 83 to 116 ch)
 - Attenuator ON 35 to 70 dB μ V (EMF), ± 3 dB μ V
(251 to 255, 1 to 82 ch)
35 to 70 dB μ V (EMF), +1 dB μ V/-5 dB μ V
(206 to 250, 83 to 116 ch)
 - Selectivity on adjacent channel
 ≥ 50 dB μ V
 - Reception signal input system
 - Antenna input (Antenna gain 2.0 dBi)
 - Connector input (Connector type; SMA-R)
 - Detection outputs
 - Signal level 0.7 Vp-p ± 0.1 Vp-p
(Input level of 50 dB μ V with attenuator OFF)
 - Output impedance
1 k Ω
 - Physical slot for control
 - Measurement channel
BCCH (A), BCCH (B), PCH, SCCH as used in descending
SCCH as used in ascending
 - Data display format
HEX display

Specifications

- Physical slot for communications
 - Measurement channel
 - Synchronous burst as used in descending/ascending, FACCH, SACCH
 - Handover tracing FACCH/SACCH analyzed
 - TCH switching type, recall-type handover trace
 - Frame error measurements
 - Displays number of errors for every 240 slots.
 - Display unique word errors and CRC errors.
- Time difference measurement
 - Measurement resolution
 - 0.42 μ s
 - Measurement accuracy
 - $\pm 1.0 \mu$ s
- CS-ID input method
 - CS-ID copy from non-designate cell station measurement or key input.
- PS-ID input method
 - Auto input or key input
- Cell station measurement
- Non-designate cell station measurement
 - Carrier number setting
 - 206 to 255, 1 to 116
 - Carrier sensitivity level setting
 - 10 to 80 dB μ V
 - Measurement time setting
 - 0 to 90 sec
 - Measurement method
 - Sequential repeated measurement setting
- Designate base station measurement
 - Carrier number setting
 - 206 to 255, 1 to 116
 - Carrier sensitivity level setting
 - 10 to 80 dB μ V
 - Measurement method
 - Sequential repeated (real time) or 1 super frame received
 - CS-ID designate system
 - CS-ID copy from non-designate cell station measurement or key input
- Spectrum measurement
- Measurement channel range
 - 206 to 255, 1 to 116 (Channel display Max. 87 ch)
- Measurement method
 - Sequential
- Measurement slot All slots
- Measurement levels
 - Attenuator OFF
 - 10 to 45 dB μ V (EMF)
 - (251 to 255, 1 to 82 ch)
 - 13 to 45 dB μ V (EMF)
 - (206 to 250, 83 to 116 ch)
 - Attenuator ON
 - 35 to 70 dB μ V (EMF)
 - (251 to 255, 1 to 82 ch)
 - 35 to 70 dB μ V (EMF)
 - (206 to 250, 83 to 116 ch)
- Displays
 - Control carrier Time constant attenuation
 - Call carrier Updated every 3 sec
- Link measurement
- Protocol measurement
 - Display details
 - PS-ID, reception level, octet information elements, protocol identification, message category, information element identification
- PIAFS measurement
 - Display details
 - Ascending/descending PIAFS communications frame header, frame No., CRC error, throughput out of synchronous.
- TCH ERR measurement
 - Display details
 - Ascending/descending call channel signal level, unique word error, CRC error.
 - Displayed each in 1.2 sec intervals (240 slots)
- Note: Transceiver mode measurement is available. The mode is enabled with control software.
- Serial data input/output (For connecting to the external PC)
 - USB interface (series B connector)
 - RS-232C interface
 - Note: Connecting to an external PC
- Displays
 - Dot configurations
 - 320 (H) x 240(V)
 - Dot size
 - 0.27 (H) x 0.27 (V) mm
- External file memory
 - Compact flash memory
- Number of storable data parameter
 - Approx. 1,000 data (Depend on file size)
- Measurement conditions storage memory
 - Approx. 96 parameters
- Measurement conditions storage time
 - Approx. 3 years
 - (back-up by lithium primary battery)
- Calendar display
 - Y/M/D; H/M/S
- Power supply
 - Dedicated battery or dedicated AC adapter
- Power saving management
 - Automatic power off system when no key operation occurs dulling 10/20/30 min. (selectable)
- Battery management
 - Enforced power off system with warning display in case battery charge near end then voltage fall down.
- Battery voltage display
 - Remaining battery power displayed on graph, warning flashes when battery charge near end and recharge warning LED (red) illuminates.
- Battery continuous operation time
 - Standby (power on)
 - Approx. 10 hours (Depend on charge conditions)
 - Measurement (sequential)
 - Approx. 8 hours (Depend on charge conditions)
- Dedicated battery
 - Battery type
 - Ni-MH secondary battery (7.2V, 3.5Ah)
 - Number of recharges
 - More than 500 times (Depend on the used conditions)

Specifications

- Dedicated battery charger
 - Used for charging dedicated battery.
 - Usable as AC adapter.
 - Input power AC 90 to 240V
 - Output power charging DC 9 V, 1000mA
 - Output power operation DC 9 V, 500 mA
 - Charge time Approx. 5 hours (Depend on the battery discharge level)
- General specifications
 - Operating temperature range 0°C to 40°C (10°C to 40°C for charger)
 - Relative humidity ≤90%RH (non-dewing)
 - Power consumption
 - During standby (power on) Approx. 350 mA
 - During measurement (sequential) Approx. 420 mA (average)
 - Dimensions 215 (W) x 140 (H) x 50 (D) mm (without antenna extended)
 - Weight Approx. 1 kg (including battery)
 - Accessories
 - Dedicated battery (Ni-MH)
 - Dedicated battery charger (usable as AC adapter)
 - Shoulder belt
 - Hand strap
 - User's manual
 - Analysis software application (Including software for capturing file in the unit)
 - RS-232C serial connection cable
- Options
 - Compact flash memory card