PHS35C

COMMUNICATION INSTRUMENTS

PHS HANDY ANALYZER

- 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

- 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)

- Electrical characteristics
· Reception frequency range
  1893.65 to 1919.45 MHz
· Reception frequency setting
  Carrier number 251 to 255, 1 to 82
· 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 dBμV (EMF), ± 3 dBμV
  Attenuator ON   35 to 70 dBμV (EMF), ± 3 dBμV
· Selectivity on adjacent channel
  ≥ 50 dBμV
· 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 ± 0.1Vp-p
          (Input level of 50 dBμV with attenuator OFF)
  Output impedance
          1 kΩ
· 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
· 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 μs
Measurement accuracy
±1.0 μs
· 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
251 to 255, 1 to 82
Carrier sensitivity level setting
10 to 80 dBμV
Measurement time setting
0 to 90 sec
Measurement method
Sequential repeated measurement setting
· Designate base station measurement
Carrier number setting
251 to 255, 1 to 82
Carrier sensitivity level setting
10 to 80 dBμV
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
All channels (251 to 255, 1 to 82)
· Measurement method
Sequential
· Measurement slot All slots
· Measurement levels
Attenuator OFF 10 to 45 dBμV (EMF)
Attenuator ON 35 to 70 dBμV (EMF)
· 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)

●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 STN LCD
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
●Dedicated batteryconditions)
Battery type Ni-MH secondary battery (7.2V, 3.5Ah)
Number of recharges
More than 500 times (Depend on the used conditions)
●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℃ to 40℃ (10℃ to 40℃ 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