

DOCUMENTATION SUR L'ANALYSEUR DE RÉSEAU EN COORDONNÉES POLAIRES HEWLETT-PACKARD HP 8410B-8414A

FICHE N° 3892

PRÉSERVER
SAUVEGARDER
VALORISER

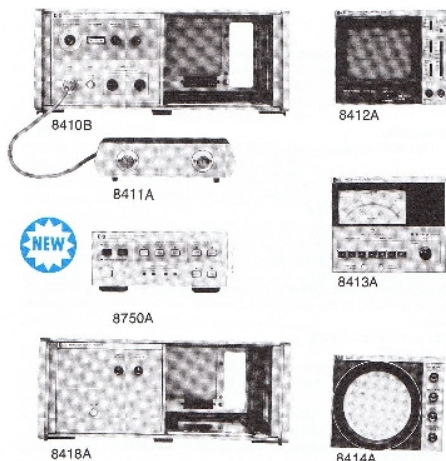
Période de fabrication : 1950-1974
Fabricant : Hewlett-Packard Company
Domaines : Physique
Sous-domaines : Electronique
Organisme : Université de Rennes
Ville : Rennes
Modèle : HP 88410B
Matériaux : Papier

Description

Cette documentation en anglais sur l'analyseur de réseau en coordonnées polaires est extraite du catalogue Hewlett-Packard de 1978 (page 454). elle détaille les caractéristiques et propriétés de l'analyseur de réseau HP 8410B et de l'écran (tube cathodique) gravé en coordonnées polaires HP 8414A.

Utilisation

Cet appareil était utilisé en travaux pratiques d'électronique par les étudiants de licence et de maîtrise. Cet analyseur de réseau en coordonnées polaires servait très probablement à étudier des systèmes de type radar ou en radiofréquences (filtres, câbles, antennes par exemple).



Specifications

8410B/8411A Network Analyzer

Function: 8411A converts RF signals to IF signals for processing in 8410B mainframe. 8410B is the mainframe for display plug-in units. Mainframe includes tuning circuits (octave bands or multioctave bands when used with HP 8620/86290 sweep oscillator), IF amplifiers and precision IF attenuator.

8410B frequency range: 0.11 to 18 GHz.

8411A frequency range: 0.11 to 12.4 GHz.

Opt 018: 0.11 to 18 GHz.

8411A input impedance: 50 ohms nominal. SWR <1.5, 0.11 to 8.0 GHz; <2.0, 8.0 to 12.4 GHz; typically increases to a 10:1 SWR, 12.4 to 18 GHz.

Channel isolation: >65 dB, 0.1 to 6 GHz; >60 dB, 6 to 12.4 GHz; >50 dB, 12.4 to 18 GHz.

Amplitude

Reference channel: -16 to -26 dBm, 0.11 to 18 GHz; -16 to -36 dBm, 0.11 to 12.4 GHz.

Test channel: -10 to -78 dBm from 0.11 to 12.4 GHz; -10 to -68 dBm from 12.4 to 18 GHz.

Maximum RF input to either channel: 50 mW.

IF gain control: 69 dB range in 10 dB and 1 dB steps with a maximum cumulative error of ± 0.2 dB.

Phase

Phase range: 0 to 360°.

Control: vernier control $\approx 90^\circ$.

Connectors (8411A): APC-7.

Power: 115 or 230 V ac $\pm 10\%$, 50-60 Hz, 70 watts (includes 8411A).

Weight

8410B: net, 14.9 kg (33 lb). Shipping, 18.5 kg (41 lb).

8411A: net, 3.2 kg (7 lb). Shipping, 4.5 kg (10 lb).

Size

8410B: 191 H $\times$ 425 W $\times$ 467 mm D ($7\frac{1}{2}'' \times 16\frac{1}{2}'' \times 18\frac{3}{8}''$).

8411A: 67 $\times$ 228 W $\times$ 143 mm D ($2\frac{3}{4}'' \times 9'' \times 5\frac{5}{8}''$) exclusive of connectors and cable.

8412A Phase-Magnitude Display

Function: plug in CRT display unit for 8410B. Displays relative amplitude in dB and/or relative phase in degrees between reference and test channel inputs versus frequency.

Amplitude

Range: 80 dB display range with selectable resolutions of 10, 2.5, 1 and 0.25 dB/division.

Accuracy: 0.08 dB/dB from midscreen.

Phase

Range: $\pm 180^\circ$ display range with selectable resolutions of 90, 45, 10, and 1° /division.

Accuracy: 0.065°/degree from midscreen.

Phase offset: 0.3°/20° step cumulative <3°.

Power: 23 watts supplied by mainframe.

Weight: net, 7.8 kg (17 lb). Shipping, 10 kg (22 lb).

Dimensions: 152 H $\times$ 186 W $\times$ 395 mm D ($6'' \times 7\frac{3}{8}'' \times 15\frac{5}{8}''$) excluding front panel knobs.

New 8750A Storage-Normalizer

General: the 8750A Storage-Normalizer provides digitally stored and normalized CRT displays when used with the 8412A Phase Magnitude Display. Measurements are faster, easier and more accurate when the 8750A is employed because the CRT is flicker-free and frequency response errors are eliminated. The 8750A is not compatible with the 8414A Polar Display.

Power: selection of 100, 120, 220, or 240V $\pm 5\%$ -10%. 48 to 440 Hz and ≤ 20 VA ≈ 20 watts).

Weight: net, 2.72 kg (6 lbs). Shipping, 5.0 kg (11 lbs).

Detailed specifications on page 459.

8413A Phase-Gain Indicator

Function: plug-in meter display unit for 8410B. Displays relative amplitude in dB between reference and test channel inputs or relative phase in degrees. Pushbutton selection of meter function and range.

Amplitude

Range: ± 30 , ± 10 , and ± 3 dB full scale.

Accuracy: $\pm 3\%$ of end scale.

Log output: 50 millivolts per dB up to 60 dB total.

Phase

Range: ± 180 , ± 60 , ± 6 degrees full scale.

Accuracy: $\pm 2\%$ of end scale.

Output: 10 millivolts per degree.

Phase offset: ± 180 degrees in 10-degree steps.

Accuracy: $\pm 0.2^\circ + 0.3^\circ/10^\circ$ step, cumulative <2°.

Power: additional 15 watts supplied by 8410B.

Weight: net, 4.9 kg (11 lb). Shipping, 6.7 kg (15 lb).

Size: 152 H $\times$ 186 W $\times$ 395 mm D ($6'' \times 7\frac{3}{8}'' \times 15\frac{5}{8}''$).

8414A Polar Display

Function: plug-in CRT display unit for 8410B. Displays amplitude and phase data in polar coordinates on 5-in. cathode ray tube.

Range: normalized polar coordinate display; magnitude calibration 20% of full scale per division. Scale factor is a function of IF setting on 8410B. Phase calibrated in 10-degree increments over 360-degree range.

Accuracy: error circle on CRT ± 3 mm.

Power: additional 35 watts supplied by 8410B.

Weight: net, 5.8 kg (13 lb). Shipping, 8.1 kg (18 lb).

Size: 152 H $\times$ 186 W $\times$ 395 mm D ($6'' \times 7\frac{3}{8}'' \times 15\frac{5}{8}''$) excluding front panel knobs.

8418A Auxiliary Power Supply

Function: the 8418A power supply unit provides power for operating of the 8412A, 8413A or the 8414A display units. Used in conjunction with the 8410B Network Analyzer, it provides the capability of viewing amplitude and phase readout in both rectangular and polar coordinates simultaneously. Option H01 adds a remotely programmable 0-70 dB IF attenuator required for autoranging in semi-automatic applications.

Weight: net, 11.2 kg (25 lb). Shipping, 19.7 kg (44 lb).

Size: 177 H $\times$ 483 W $\times$ 450 mm D ($6\frac{3}{4}'' \times 19'' \times 17\frac{1}{8}''$).

Ordering information

8410B mainframe

Opt 908: Rack Flange Kit

8411A Frequency Converter

Opt 018: 0.11 to 18 GHz

8412A Phase-Magnitude Display

8413A Phase-Gain Display

8414A Polar Display

8418A Auxiliary Power Supply

Opt H01: Programmable 0-70 dB IF Attenuator

8750A Storage-Normalizer



Pour nous citer :

Base de la Mission nationale de sauvegarde et de valorisation du patrimoine scientifique et technique contemporain, PATSTEC, Documentation sur l'analyseur de réseau en coordonnées polaires Hewlett-Packard HP 8410B-8414A (Hewlett-Packard Company), <https://www.patstec.fr/ressources/objets/detail?id=15910>, consulté le 2026-07-28

