

levear

信号発生器シリーズ

Signal Generator Series

VP-8195L

VP-8196L

VP-8195L



VP-8196L



SIGNAL GENERATOR SERIES

AM/FM SIGNAL GENERATOR SERIES VP-8195L/VP-8196L

特徴 Main feature

業界のロングセラー、 VP-8193D/VP-8194D 後継モデル。

現行機の操作性・測定性能と互換性を意識したデザイン、基本仕様。

- ▶ 100 kHz ~ 165 MHz AM/FM 信号発生器の最新モデル。
- ▶ レスポンス高速化(当社現行機比2倍)による検査効率アップ※(注)。
- ▶ パソコン用インタフェース多様化、USB、LAN 標準搭載。
- ▶ ワールドワイド入力電源対応、AC 90 ~ 250 V 自動電圧切替。
- ▶ 高純度信号源、長寿命アッテネーター、DDS 標準搭載。

※(注)RF周波数切替時間の比較。右ページの比較表参照。

Designed to replace VP-8193D/VP-8194D, the industry's favourite long-term sellers.

Compatibility-oriented designs and specifications to current models.

- ▶ New AM/FM signal generators for 100 kHz~165 MHz.
- ▶ Higher response speeds (approximately twice as quick as current models) for efficient testing※.
- ▶ More versatile PC interfaces for USB and LAN (Ethernet).
- ▶ Universal automatic voltage for AC 90~250 V.
- ▶ High purity signals, long life attenuator and DDS audio oscillator (standard feature).

※Note: Responding time to change RF frequencies. See the comparison chart in right page.



VP-8195L



VP-8196L (RDS)



VP-8195L / 8196L Rear Panel



Specifications AM/FM SG VP-8195L / 8196L

RF carrier frequency

Frequency range	0.1 MHz to 165 MHz
Resolution	100 Hz
Accuracy	$\pm 5 \times 10^{-6}$
Temperature coefficient	$\pm 5 \times 10^{-6}$ (10 °C to 35 °C)

RF carrier output

Level range	-20 dB μ V to 126 dB μ V[emf] -133 dBm to 13 dBm (50 Ω) -134.8 dBm to 11.2 dBm (75 Ω)
Resolution	0.1 dB
Accuracy	± 1.5 dB (≥ 0 dB μ V[emf], 50 Ω) ± 2 dB (< 0 dB μ V[emf], 50 Ω)
Output impedance	50 Ω / 75 Ω
VSWR	≤ 1.3 (≤ 101 dB μ V[emf], 50 Ω)
Attenuator construction	Semiconductor (Except 109.0 to 109.1 dB points)

RF carrier signal purity

Harmonic spurious	≤ -30 dBc (2nd/3rd)
Non harmonics spurious	≤ -50 dBc ($f_c > 45$ MHz, except 120 MHz element) ≤ -40 dBc ($f_c \leq 45$ MHz, $f_s \leq 45$ MHz) ≤ -30 dBc ($f_c \leq 45$ MHz, $f_s > 45$ MHz)
Residual FM	≥ 76 dB (9.7 to 11.7 MHz / 76 to 108 MHz) ≥ 73 dB (0.3 to 165 MHz) Mod. AF 1 kHz, FM 75 kHz Demod. BW 50 Hz to 15 kHz, De-emphasis 50 μ s Except beat element
Residual AM	≥ 55 dB (0.4 to 1.7 MHz) ≥ 50 dB (0.15 to 165 MHz) Mod. AF 1 kHz, AM 30 % Demod. BW 50 Hz to 15 kHz, Except beat element

現行モデルとの主な相違点

	VP-8195L / 8196L	VP-8193D / 8194D
RF周波数範囲	0.1 ~ 165 MHz(連続)	0.1 ~ 140 / 162 ~ 163 MHz
RF周波数切替時間	約 300 ms	約 700 ms
変調信号用DDS (分解能 1 Hz 単位、オーディオ信号)	標準搭載 (AM、FM用に個別設定可能)	オプション (AM・FM共通設定)
FM偏差分解能	0.1 kHz ステップ	0.5 kHz ステップ
AM変調度分解能	0.1 % ステップ	0.5 % ステップ
RDSパターンプリセット可能数	100 パターン*1	16 パターン*2
リモート制御用I/F(標準搭載)	GP-IB, RS-232C, USB, LAN	GP-IB, RS-232C
出力インピーダンス	50 Ω / 75 Ω 切替スイッチ付	50 Ω 固定(75 Ωは特注改造)
電源電圧(AC)	90 ~ 250 V 自動切替	100 / 120 / 220 / 230 V 手動切替
ARI信号(ラジオデータ伝送)	非対応	対応(VP-8194D)
消費電力	約 30 W / 約 65 VA	約 45 W / 約 60 VA

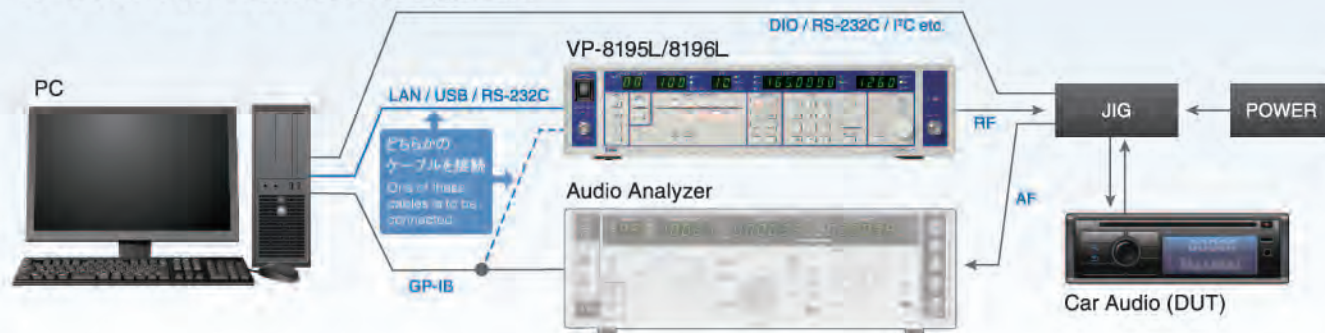
*1. RDS機能はVP-8196Lのみ搭載。*2. RDS機能はVP-8194Dのみ搭載。

Main feature comparison with current models

	VP-8195L / 8196L	VP-8193D / 8194D
RF frequency range	0.1~165 MHz (continuous)	0.1~140 / 162~163 MHz
RF response to frequency changes	Approximately 300 ms	Approximately 700 ms
DDS for audio oscillator (1 Hz step, audio signal source)	Available as standard (individually set for AM/FM)	Optional (commonly set for AM/FM)
FM deviation resolution	0.1 kHz step	0.5 kHz step
AM modulation resolution	0.1 % step	0.5 % step
Preset for RDS patterns	100 patterns*1	16 patterns*2
Remote control I/F (standard)	GP-IB, RS-232C, USB, LAN	GP-IB, RS-232C
Output impedance	50 / 75 ohm switchable	50 ohm (75 ohm available for factory modification)
Power voltage (AC)	90~250 V automatic	100 / 120 / 220 / 230 V manually selectable
ARI signal (for radio data)	Not available	Available (VP-8194D)
Power consumption	Approx. 30 W / Approx. 65 VA	Approx. 45 W / Approx. 60 VA

*1. The RDS function is available with VP-8196L. *2. The RDS function is available with VP-8194D.

VP-8195L/VP-8196L使用例 Application



その他の仕様比較 / Other specification comparison

現行機と同一機能 Same as current models	VP-8195L / 8196L	VP-8193D / 8194D
Dimensions	W426 X H99 X D300 mm	same as VP-8195L, VP-8196L.
Display Design	16 or 18 digits LED	
GP-IB, RS232C I/F Commands	leveal original	
AM/FM Simultaneous Modulation	available	
RF Output Level	-20 ~ +126 dBμV [emf]	
Distortion (AM/FM)	as specified	
Residual Modulation (AM/FM)	as specified	
FM Stereo Separation	as specified	
Input / Output Connectors	composite signal output, pilot signal output, relay drive output, SCA input, external I/O*	
	*. without printer functions	
現行機に追加機能 Additional to current models	VP-8195L / 8196L	VP-8193D / 8194D
USB, LAN Connection for PC	available (standard) using common commands to GP-IB/RS-232C	none
Output Level Setting	dBμV [emf] & dBm	dBμV [emf] only
Preset Memory Setting by PC	available (standard)	none
RDS Data Downloading via USB	available (standard)	none (via RS-232C)
DDS Oscillator Frequency Setting	frequencies individually set for AM and FM	one frequency only

Specifications AM/FM SG VP-8195L / 8196L

AM

Modulation range	0 % to 100 % / 0.1 % step
Accuracy	$\pm(\text{setting} \times 0.1 + 1) \%$ ($\leq 80 \%$, 0.4 to 1.7 MHz) $\pm(\text{setting} \times 0.1 + 2) \%$ ($\leq 80 \%$, 0.15 to 165 MHz)
Distortion	$\leq 0.5 \%$ (AF 1 kHz, AM 30 %, 0.4 to 1.7 MHz) $\leq 1.5 \%$ (AF 1 kHz, AM 60 %, 0.4 to 1.7 MHz) $\leq 3 \%$ (AF 1 kHz, AM 80 %, 0.4 to 1.7 MHz) Demod. BW 50 Hz to 15 kHz, Except beat element
Incidental FM	≤ 150 Hz (AM 30 %, 0.4 to 1.7 MHz) ≤ 300 Hz (AM 30 %, 0.15 to 165 MHz)

AM source

DDS frequency range	20 Hz to 10 kHz / 1 Hz step
External frequency range	20 Hz to 10 kHz

FM

Deviation range	0 kHz to 100 kHz / 0.1 kHz step (Max. ≤ 0.25 fc)
Accuracy	$\pm(\text{setting} \times 0.1 + 0.5)$ kHz (9.7 to 11.7 MHz / 76 to 108 MHz) $\pm(\text{setting} \times 0.1 + 1)$ kHz (0.3 to 165 MHz)
Distortion	$\leq 0.05 \%$ (AF 1 kHz, FM 75 kHz, 9.7 to 11.7 MHz / 76 to 108 MHz) $\leq 0.1 \%$ (AF 1 kHz, FM 75 kHz, 0.3 to 165 MHz) Demod. BW 50 Hz to 15 kHz, De-emphasis 50 μ s
Incidental AM	$\leq 0.5 \%$ (AF 1 kHz, FM 75 kHz, 9.7 to 11.7 MHz / 76 to 108 MHz)
Pre-emphasis	OFF / 25 μ s / 50 μ s / 75 μ s

FM source

DDS frequency range	20 Hz to 100 kHz / 1 Hz step
External frequency range	20 Hz to 100 kHz

FM stereo

Modulation mode	L=R / L only / R only / L=-R
Modulation range	0 to 127 % / 1 % step
Accuracy	$\pm(\text{setting} \times 0.1 + 1) \%$ (9.7 to 11.7 MHz / 76 to 108 MHz) $\pm(\text{setting} \times 0.1 + 1.5) \%$ (0.3 to 165 MHz)
Stereo separation	≥ 55 dB (AF 1 kHz, Mod. 90 %, 76 to 108 MHz)
Pre-emphasis	OFF / 25 μ s / 50 μ s / 75 μ s
Pilot frequency / accuracy	19 kHz / ± 1 Hz
Pilot level range	0 % to 15 % / 0.1 % step
Pilot level accuracy	$\pm(\text{setting} \times 0.1 + 1) \%$ (9.7 to 11.7 MHz / 76 to 108 MHz)

FM stereo source

DDS frequency range	20 Hz to 15 kHz / 1 Hz step
External frequency range	20 Hz to 15 kHz

FM-AM simultaneous modulation

Modulation mode	FM-AM / FM stereo-AM
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RDS signal (VP-8196L only)

RDS level range	0 to 10 % / 0.1 % step
Accuracy	$\pm(\text{setting} \times 0.1 + 0.5) \%$ (9.7 to 11.7 MHz / 76 to 108 MHz)
Spurious	≤ -50 dB (≤ 53 kHz, Level 10 %) ≤ -40 dB (≥ 61 kHz, Level 10 %)
SC frequency / accuracy	57 kHz / ± 6 Hz
SC phase	0 ° or 90 ° ± 10 ° (to the Pilot)
SC leakage	≤ -50 dB
Output mode	SC / Null / Int. Data
Number of pattern	Max. 100
Pattern length	Max. 2,048 groups

IN / OUT connectors

RF output	BNC
Ext. modulation input	BNC
Ext. input level	Approx. 1 V[peak]
Ext. input impedance	Approx. 10 k Ω
Composite output	BNC
Comp. output level	5 V[p-p] $\pm 10 \%$
Comp. output impedance	Approx. 600 Ω
Pilot output	BNC
Pilot output level	1 V[rms] $\pm 10 \%$
Pilot output impedance	Approx. 1 k Ω
SCA input	BNC
SCA input level	Approx. 0.56 V[p-p] (Equivalent to 10 % of modulation level)
SCA frequency range	20 kHz to 99 kHz
SCA input impedance	Approx. 10 k Ω

External equipment control interface

Relay drive output	RCA type (phono plug)
Relay drive voltage	Approx. 5V
Relay drive current	Max. 50 mA
External control I/O	36 pin connector
External control port	2 ports \times 8 bits
External control level	TTL
External key input	\uparrow / \downarrow / CLR / Rotary switch

Remote communication interface

USB	Version 2.0 / Type B connector
Ethernet (LAN)	10/100 BASE-T
RS-232-C	38,400 bps
GP-IB	Device mode

OTHERS

Power requirement	AC 90 V to 250 V
Frequency	50 Hz / 60 Hz
Power consumption	Max. 35 W / Max. 70 VA
Dimension	426(W) \times 99(H) \times 300(D) mm
Weight	Approx. 6.5 kg

●本カタログの掲載の仕様、デザイン等は性能改善のため予告なく変更させていただくことがあります。
Specifications are subject to change without notice for product improvement.



安全に関するご注意

●ご使用の際は、「取扱説明書」よくお読みの上 正しくお使いください。

●お問い合わせは……

ETIMS

ELECTRONIC TEST INSTRUMENTS
MARKETING & SERVICES

71 Ubi Crescent #04-03
Excalibur Centre Singapore 408571
Tel: (65) 6282 1522 Fax: (65) 6282 0100
Email: etims@singnet.com.sg

Dalian Itevar electric Co.,Ltd.

No.300 Honggang Road, Ganjingzi District, Dalian, China

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