

Specifications

VIDEO ANALYZER	
SIGNAL INPUT	
Support system	
HDTV	720p / 1080i / 1080p
SDTV	480i/p / 576i/p / NTSC / NTSC4.43 / PAL / PAL-M / PAL-N / PAL 60
Input signal type	
HDTV	Y/Pb/Pr signal / G/B/R signal
SDTV	VBS signal / Y+S/C signal / Y/Pb/Pr signal / G/B/R signal
Input impedance	
Approx. 75 Ω / 1 MΩ	
Input range	
2 V[p-p] / 1 V[p-p] / 0.5 V[p-p]	
Input amplitude	
1/4 to full scale of each range	
EXT SYNC. INPUT	
SYNC. type	
HDTV	Tri-level sync
SDTV	Bi-level sync
Input impedance	
Approx. 75 Ω / HIGH	
Maximum input level	
2 V[p-p] (75 Ω terminated)	
Sync. level	
HDTV	±0.15 V[p-p] to ±0.6 V[p-p]
SDTV	0.15 V[p-p] to 0.6 V[p-p]
COMMON FOR MEASUREMENT ITEMS	
Measurement items	
Line frequency / Frame frequency / Total lines / Scanning	
Averaging function	
Mode	
Additional average between frames Additional average between lines	
Number of times	
2 / 4 / 8 / 16 / 32	
COLOR BAR MEASUREMENT	
Measurement items	
HDTV	Level of setting point / Pos./Neg. sync level
SDTV	-Y/Pb/Pr -G/B/R
SDTV	-VBS -Y+S/C
Luminance level / Chrominance level / Chrominance phase of setting point / Sync level / Burst level / Sub-carrier frequency	
Level accuracy	
HDTV	±3 % of full scale
SDTV	±2 % of full scale
Phase accuracy	
±2 °	
Color burst amplitude	
0.15 V[p-p] to 0.6 V[p-p]	
Sub-carrier frequency	
3.579 545 MHz ±1 kHz (NTSC) 4.433 619 MHz ±1 kHz (PAL / PAL 60 / NTSC4.43) 3.575 611 MHz ±1 kHz (PAL-M) 3.582 056 MHz ±1 kHz (PAL-N)	

注) HDTV: VP-7671Tシリーズにのみ適用

Note) HDTV : available only with VP-7671T series.

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VIDEO ANALYZER	
PEAK-TO-PEAK MEASUREMENT	
Measurement items	
Maximum amplitude in specified section	
Bandwidth	
HDTV	60 MHz
SDTV	6 MHz
Level accuracy	
HDTV	±10 % of full scale (1 MHz to 10 MHz) ±20 % of full scale (10 MHz to 30 MHz) ±30 % of full scale (30 MHz to 60 MHz)
SDTV	±10 % of full scale
MULTIBURST MEASUREMENT	
Measurement items	
Ratio of packet amplitude to reference amplitude	
Bandwidth	
HDTV	60 MHz
SDTV	6 MHz
Level accuracy	
HDTV	±1 dB of full scale (1 MHz to 10 MHz) ±2 dB of full scale (10 MHz to 30 MHz) ±3 dB of full scale (30 MHz to 60 MHz)
SDTV	±1 dB of full scale
LINEARITY MEASUREMENT	
Measurement items	
Linearity of input signal	
Measurement accuracy	
HDTV	±3 % of full scale
SDTV	±2 % of full scale
DG/DP MEASUREMENT	
Input signal	
SDTV-VBS / SDTV-Y+S/C	
Measurement items	
DG (Differential Gain) / DP (Differential Phase)	
DG accuracy	
±2 % of full scale	
DP accuracy	
±2 °	
S/N MEASUREMENT	
Measurement items	
S/N of input signal	
Measurement accuracy	
HDTV	±2 dB (30 dB to 60 dB, ≤30 MHz) ±3 dB (30 dB to 70 dB, ≤60 MHz)
SDTV	±1.5 dB (30 dB to 60 dB, ≤6 MHz) ±2 dB (30 dB to 70 dB, ≤6 MHz)
Sag compensation	
OFF / ON	
HPF	
OFF / 100 kHz / 200 kHz	
LPF	
HDTV	OFF / 1 MHz / 6 MHz / 15 MHz / 30 MHz / 60 MHz
SDTV	OFF / 500 kHz / 1 MHz / 3 MHz / 4.2 MHz / 5 MHz / 10 MHz / 12 MHz
Weighting filter	
OFF / ON (SDTV system)	
Sub-carrier trap	
OFF / ON (SDTV system)	

levear

Compact

オーディオ・ビデオ測定、AM/FM SGをコンパクトボディに集約

Audio/video measurement and AM/FM SG are combined in one compact body

Flexible

HDビデオ、HiFiオーディオ機器に対応したモジュール選択も可能

Module combinations for HD video and HiFi audio products are also available



3 Modes

単体マニュアル計測、単体自動計測、パソコンによる計測制御の3モード対応

Three way operation offers manual measurement, stand alone or PC-controlled automatic testing

Low Cost

多機能ながらこの価格、品質向上とトータルコスト低減に威力発揮

A powerful feature package for its price contributes to higher quality and total cost reduction

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……

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このカタログの記載内容は2009年12月現在のものです。本カタログ掲載商品の仕様、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.

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●カタログと実際の商品・画面の色は印刷インキの関係で多少異なって見えることがありますのでご了承ください。

新たに、HDビデオ対応、 HiFiタイプを加え 幅広い計測ニーズに応えます。

HD video compatibility and HiFi audio version have newly joined the line up to meet your wide needs.

用途に応じて自由に組み合わせられる各種モジュール

The following modules are available for your most suitable choice.

MODULE 1 VIDEO MODULE

Video モジュール

各種ビデオ測定。新たにS/N計測を追加し、1080i/p・720pに対応したHDタイプも選べるようになりました。

Two types of video modules are available. HD version supports 1080i/p and 720p including S/N measurement as a standard feature.

HD タイプ NEW

対応ビデオフォーマット Video signal formats

1080i / p
720p
480i / p NTSC 4.43
576i / p PAL-M
NTSC PAL-N
PAL PAL 60

ビデオ入力 Video signal inputs

VBS, Y+S/C
Y / Pb / Pr
G / B / R



計測項目 Measurement items

HDタイプ HD version

ビデオS/N Video S/N measurement NEW
コンポジットのクロマAM / PM測定除く Composite chroma AM/PM can not be measured.

共通 Common

カラーバー Colour bar	ピーク to ピーク Peak-to-peak	マルチバースト Multi burst	リニアリティー Y Linearity	DG/DP DG・DP
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標準SDタイプ

対応ビデオフォーマット Video signal formats

480i / p NTSC 4.43
576i / p PAL-M
NTSC PAL-N
PAL PAL 60

ビデオ入力 Video signal inputs

VBS, Y+S/C
Y / Pb / Pr
G / B / R



SDタイプ SD version

ビデオS/N Video S/N measurement NEW OPTION
コンポジットのクロマAM / PM測定除く Composite chroma AM/PM can not be measured.

MODULE 2 AUDIO MODULE

Audio モジュール

各種オーディオ測定。さらに計測帯域を広げたHiFiタイプを追加。幅広いオーディオ・ビデオ機器の計測に対応します。

In addition to the standard module, HiFi version can be selected for wider measurement ranges.

計測項目 Measurement function

ACレベル、レシオ、S/N、
ミックスレベル、ひずみ率、
THD、周波数、
DC電圧 / 電流

AC level, Ratio, S/N, Mix level, Distortion, THD, Frequency, DC voltage / current

計測帯域 Measurement range

HiFi タイプ NEW

HiFi version
レベル計測：20 Hz to 60 kHz
ひずみ率 / THD：20 Hz to 20 kHz (基本波)
Level: 20 Hz to 60 kHz
Distortion / THD: 20 Hz to 20 kHz (fundamental frequency)

標準タイプ

Standard version
レベル計測：20 Hz to 30 kHz
ひずみ率 / THD：100 Hz to 10 kHz (基本波)
Level: 20 Hz to 30 kHz
Distortion / THD: 100 Hz to 10 kHz (fundamental frequency)

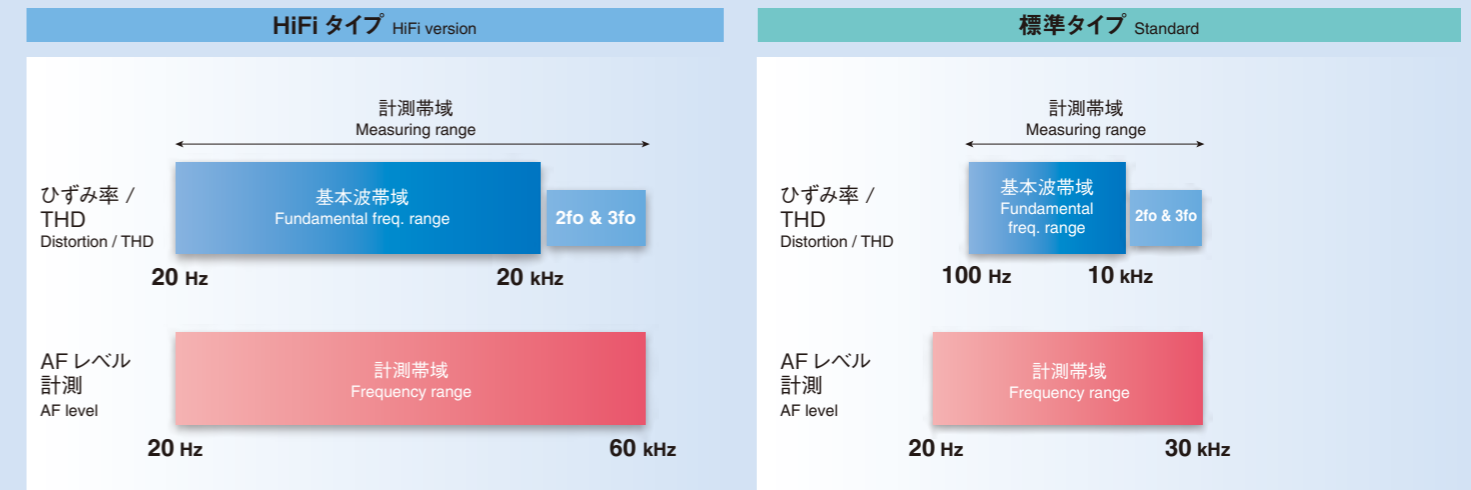
オーディオ信号源 AF Source

帯域 Range
10 Hz to 30 kHz

出力 Output
1 mV[rms] to 3.16 V[rms]
L / R (unbalanced)

ミックス出力 Mixed signal output
3周波数混合出力：100 Hz / 1 kHz / 10 kHz
Mixed signal of 3 frequencies: 100 Hz / 1 kHz / 10 kHz

AV マルチテスタのオーディオ計測帯域 AVMT Audio Frequency Range



MODULE 3 AM/FM SG MODULE

AM/FM SG モジュール

- AM/FM ラジオ用の各種信号発生 Signal generation for AM/FM radio
- RDS オプション搭載可能 RDS function is optional

コンパクトサイズ

Compact sized design
高さ100mm標準ラックサイズ、重さ10Kg。開発・生産現場の省スペース、省エネ化に貢献。(426W x 100H x 400D mm)

Designed in standard rack size of 100mm high and light weight of 10kg, efficiency in setting space and power consumption can be achieved.

新世代AV計測器

Measurement instrument in new generation
高速CPU搭載により、見やすい表示、快適な操作性、多機能を実現。
User friendly display and comfortable operation, multi-functionality are realized thanks to its high speed CPU.



従来品はIlevar自動計測モデル(VP-7650D)とAM/FM信号発生器(VP-8194D)の容積合計イメージ。
Conventional products show the total volume image of Ilevar automatic measurement model (VP-7650D) and AM/FM signal generator (VP-8194D).

AV機器の開発・生産に必要な計測機能を1台に集約した、オールインワンタイプの小型・高速計測器。

The AV multimeter is all-in-one compact and high speed measurement instrument to meet various requirements in your R&D or production of audio/video products.

使用環境に応じた3つの動作モード

AV multimeter can be used in the following three different modes.

MODE 1 DIRECT MODE Manual operation without any pc

ダイレクトモード 単体マニュアル計測 パソコン不要

本器に外部ディスプレイとUSBマウスを接続して直接操作。各種測定のマニュアル操作が可能です。

No PC is necessary in the direct mode. All you need is an external LCD display monitor and an USB mouse for your manual measurement.



Video Waveform

ビデオ波形の表示。マウスのクリックで、測定ポイントの移動も可能。Displaying video waveforms. Measuring point can be moved as you click your mouse.

注:この画面はVP-7671T09Aの例です
*This screen is an example of VP-7671T09A

外部ディスプレイ
External LCD monitor display



*外部ディスプレイとマウスは本器に付属していません。
An external LCD monitor display and a mouse are not provided.

マウスでパソコン感覚の軽快な操作
(本器にUSBマウス接続)

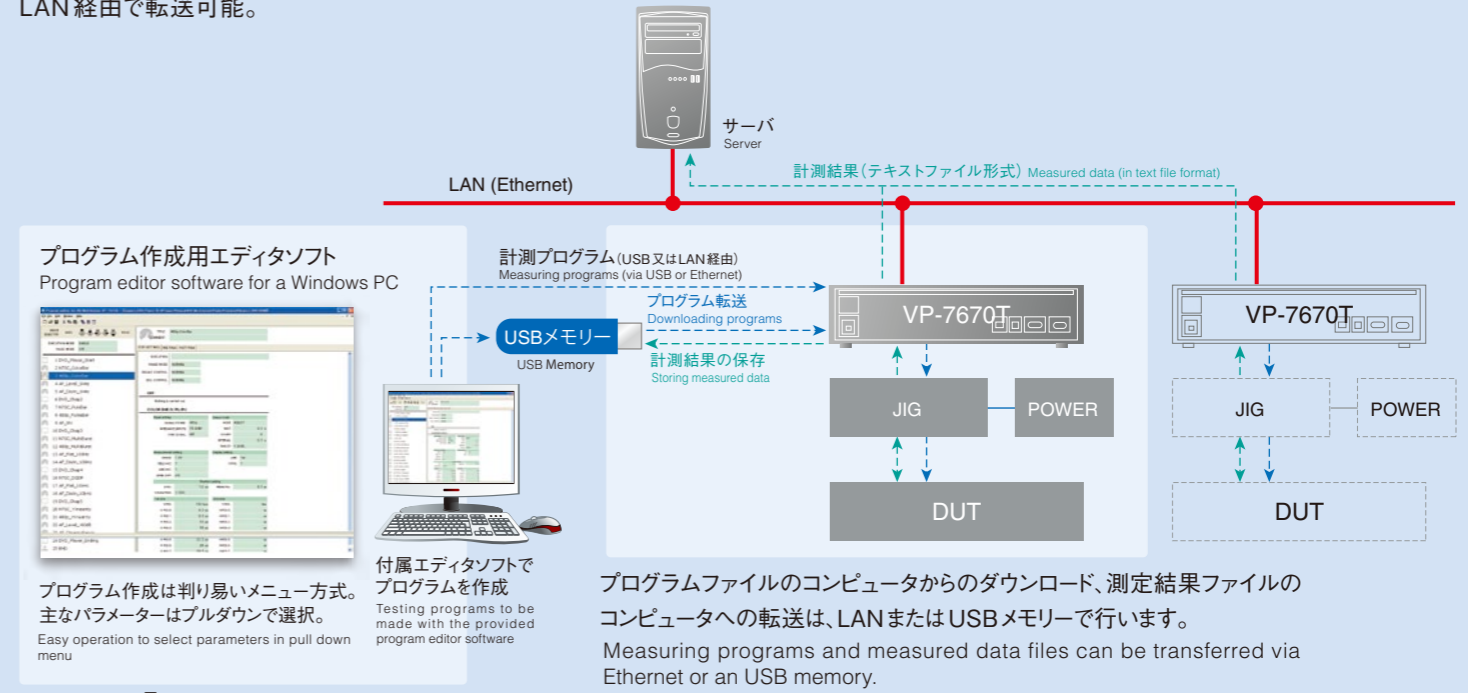
Comfortable operation like a pc with a mouse(an USB mouse is to be connected to AVMT)

MODE 2 ACTIVE MODE Stand alone automatic measurement without any PC

アクティブモード 単体自動計測 パソコン不要

本器単体で、自動計測プログラムを実行できます(プログラム作成用ソフト付属)。計測結果は自動でUSBメモリーに保存、またはLAN経由で転送可能。

Without any PC, automatic testing program can be carried out (PC software to make testing programs is provided). There is an useful feature to store the measured data to an USB memory or transfer to a PC.



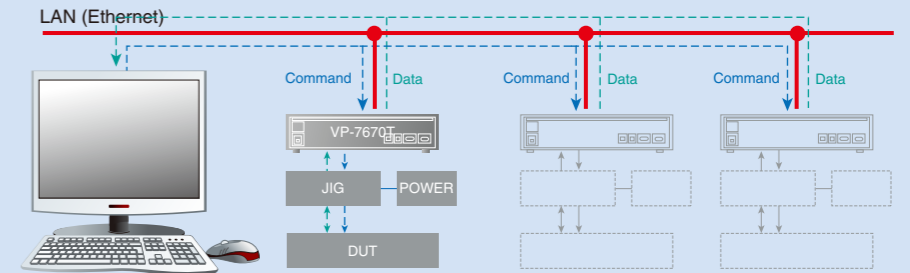
Windows/パソコン用

MODE 3 PASSIVE MODE AV multimeters to be controlled by a PC via Ethernet

パッシブモード パソコンによる集中制御自動計測 LAN経由

豊富な外部機器用インターフェースを搭載、Ethernet (LAN) 経由で外部機器のリモート制御可能。ネットワークシステムへの組み込みも容易です。

Thanks to various types of interfaces equipped on the AV Multimeter, it is possible to control external equipments via Ethernet, enabling to build comprehensive testing system controlled by a host PC.

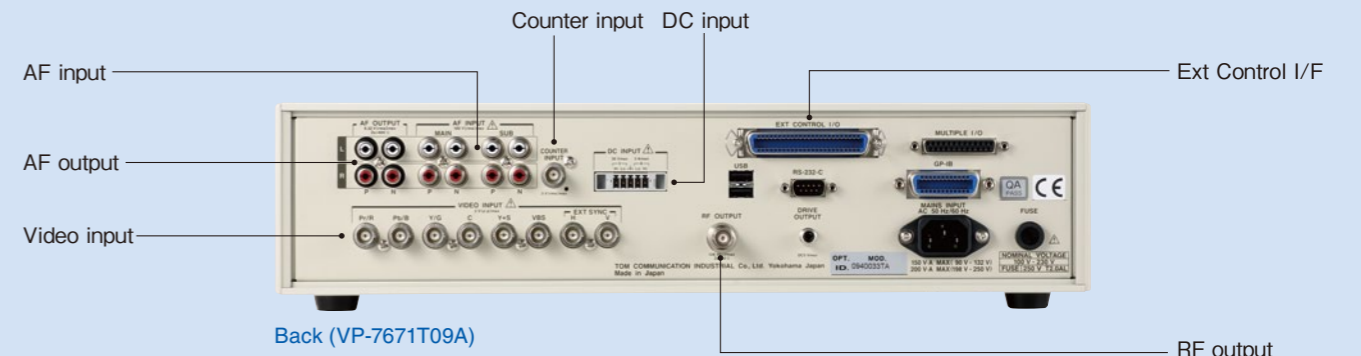


多彩な外部インターフェース

Incorporated types of Interfaces

ディスプレイ出力、USB、Ethernet搭載。外部機器制御インターフェースはRS-232-C、GP-IB、DIO、I²Cバス、Irリモコン出力を搭載。

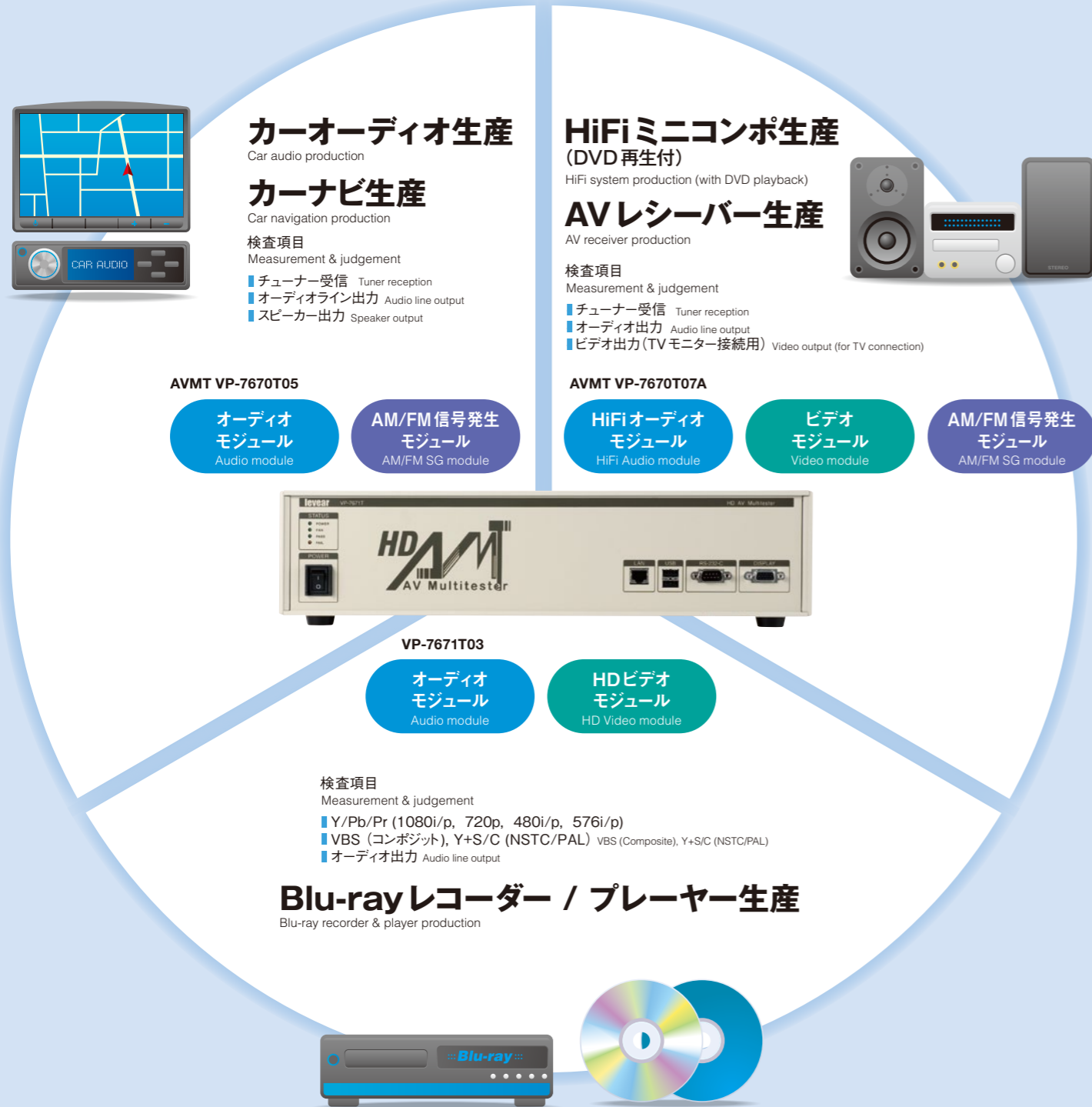
An external LCD monitor output, USB and Ethernet are incorporated. RS-232, GP-IB, DIO, I²C bus and infrared remote control are available to control DUT or jigs.



本器は各種モジュールの 組み合わせで 幅広いニーズにお応えします。

AV multimeter offers the most suitable module combinations
for your needs with wide range products

代表的な用途 Typical use



詳しいモジュール組み合わせは、6ページのモデル一覧をご参照ください
Please refer to the model list on page 6 for more details of module combinations

注) 上図は実際のご使用現場と直接関係ありません。
The chart above has no direct relation with the actual use in any production facility.

モデル一覧表

Model list and incorporated modules.



HD AV マルチテスタ HD AV Multimeter

ビデオモジュールは、HDおよびSD対応タイプ The video module supports HD and SD formats.

- VP-7671T02 : HD Video
- VP-7671T03 : Audio & HD Video
- VP-7671T07 : Audio & HD Video & SG
- VP-7671T09 : Audio & HD Video & SG & RDS
- VP-7671T03A : HiFi Audio & HD Video
- VP-7671T07A : HiFi Audio & HD Video & SG
- VP-7671T09A : HiFi Audio & HD Video & SG & RDS



AV マルチテスタ AV Multimeter

ビデオモジュールは、SDタイプ The video module supports SD format only.

- VP-7670T01 : Audio
- VP-7670T02 : Video
- VP-7670T03 : Audio & Video
- VP-7670T05 : Audio & SG
- VP-7670T07 : Audio & Video & SG
- VP-7670T08 : Audio & SG & RDS
- VP-7670T09 : Audio & Video & SG & RDS
- VP-7670T01A : HiFi Audio
- VP-7670T03A : HiFi Audio & Video
- VP-7670T05A : HiFi Audio & SG
- VP-7670T07A : HiFi Audio & Video & SG
- VP-7670T08A : HiFi Audio & SG & RDS
- VP-7670T09A : HiFi Audio & Video & SG & RDS

Note) SG : AM/FM Signal Generator

Specifications

AUDIO ANALYZER

AUDIO SOURCE	
Output channels	2 channels (L / R) Unbalance
Frequency range	10 Hz to 30 kHz / 1 Hz step
Output level	1 mV[rms] to 3.16 V[rms]
Level accuracy	± 0.5 dB (≥0.25 V[rms]) ± 1 dB (≤249 mV[rms])
Flatness	± 0.5 dB (2 V[rms], 1 kHz ref.)
Distortion	≤0.003 % (1 kHz, 2 V[rms], 20 kHz BW)
Residual noise	≤10 μV[rms] (20 kHz BW)
DC MEASUREMENT	
DC voltage input range	±30 V / ±300 mV
DC current input range	±3 A / ±30 mA / ±300 μA
Measurement accuracy	± (0.2 % of RD + 0.2 % of Fs)
FREQUENCY MEASUREMENT	
Measurement range	10 Hz to 20 MHz (Frequency counter input) 10 Hz to 30 kHz (Audio input)
HiFi version	10 Hz to 60 kHz (Audio input)
Measurement accuracy	± (1 × 10 ⁻⁵ + 1 digit)
Counter input impedance	50 Ω / 1 MΩ

AUDIO MEASUREMENT	
Measurement function	AC level / Ratio / S/N / Distortion / THD / Mix
Input channels	4 channels / Balance
Input impedance	Approx. 100 kΩ / ≤200 pF
Measurement range	AC level / Ratio / S/N 100 V[rms] to 3 mV[rms] (6 range) Distortion / THD 100 V[rms] to 3 mV[rms] (10 range)
Frequency range	20 Hz to 30 kHz (AC level / Ratio / S/N / Mix) 100 Hz to 10 kHz (Distortion / THD)
HiFi version	20 Hz to 60 kHz (AC level / Ratio / S/N / Mix) 20 Hz to 20 kHz (Distortion / THD)
AC level accuracy	±3 % of Fs (without 3 mV[rms] range) ±5 % of Fs (3 mV[rms] range)
Crosstalk	≤-80 dB (Denominator signal : 1 kHz, ≥1 V[rms])
Residual noise	≤10 μV (20 kHz BW)
Residual distortion	≤0.003 % (20 kHz BW, 1 kHz input) (3 V[rms] Fs input)
Filters	
Pre-LPF	OFF / 20 kHz
HPF	OFF / 200 Hz / 400 Hz
LPF	OFF / 15 kHz / 20 kHz
PSOPHO	OFF / IEC-A / IEC-AUDIO / CCIR-ARM / 1 kHz BPF

SIGNAL GENERATOR

AM/FM SIGNAL GENERATOR	
Frequency range	0.1000 MHz to 140.0000 MHz / 162.0000 MHz to 163.0000 MHz
Frequency accuracy	± (5 × 10 ⁻⁵ + 1 digit)
Output level range	-20.0 dBμV to 126.0 dBμV[emf]
Level accuracy	± 1.5 dB (≥0 dBμV[emf]) ± 2 dB (<0 dBμV[emf])
Output Impedance	50 Ω
VSWR	≤1.3 (≤101 dBμV[emf])
Harmonic spurious	≤-30 dBc (2nd/3rd)
Non harmonics spurious	≤-50 dBc (fc>35 MHz) ≤-40 dBc (fc≤35 MHz, fs≤35 MHz) ≤-30 dBc (fc≤35 MHz, fs>35 MHz)
Residual FM	≥76 dB (76 to 108 MHz)
Residual AM	≥55 dB (0.4 to 1.7 MHz)
Modulation source	Audio source in AUDIO ANALYZER
AM depth range	0 % to 100 % / 0.5 % step
AM distortion	≤0.5 % (0.4 to 1.7 MHz, AM 30 %)
FM deviation range	0 kHz to 100 kHz / 0.5 kHz step
FM distortion	≤0.05 % (76 to 108 MHz, FM 75 kHz)
Pre-emphasis	OFF / 25 μs / 50 μs / 75 μs
FM stereo modulation	0 to 127 % / 1 % step
FM stereo separation	≥55 dB (76 to 108 MHz)
Pilot signal level	0 % to 15 % / 0.1 % step
Relay drive output	Approx. 5 V / Approx. 50 mA
RDS ENCODER	
RDS level range	0 % to 10 % / 0.1 % step
Int. pattern number	Max. 16
Int. pattern length	Max. 2 048 groups

OTHERS

INTERFACE	
User interface	Analog RGB (Display) / USB (4 ports)
Communication	Ethernet (10/100 BASE-T)
External control interfaces	RS-232-C (2 ports) / GP-IB (Controller mode) / TTL DIO (5 ports × 8 bits) / Isolated DO (8 bits) / I ² C bus / Ir remote control output
OTHERS	
Power requirement	AC 90 V to 250 V
Frequency	50 Hz / 60 Hz
Power consumption	≤200 VA
Dimension	426 (W) × 100 (H) × 400 (D) mm
Weight	Approx. 10 kg