


# 1155 • 1156

VHF/UHF TELEVISION MODULATOR


Analog TV development & production facilities

1155□



Type Name	TV System
1155M	CCIR-M
1155G	CCIR-B/G
1155 I	CCIR-I
1155D	CCIR-D/K
1155L	CCIR-L

1156□



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## General

This unit is TV Modulator to be used at TV or VTR production factories for adjustment or receiving tests. This unit is suited as signal source of central concentrated system because RF signal equivalent to TV broadcasting is got by applying video and sound signals to modulation input terminals. Generation of stable signal for a long term is possible having superior performance of IF modulator part with module. Also, sections following to converter are separate system for both VHF/UHF, so that it can be used without any inconvenience for cross-modulation distortion.

## Features

High performance and high output can be obtained, even if small size, with rationalized design for each part by using SAW - VSBF having standard frequency response and group delay characteristic, and modulator part of module. Monitoring of video and sound modulation degree and RF output level can be made by meter on panel and correspondence to sound-multiplex for system of each country is possible. Channel No. indicator is equipped.

## Composition

<b>&lt;0.1W output&gt; 1155</b>	
Main Unit	..... 1
Dimensions	425(W)×99(H)×380(D) mm (Excluding projections)
Weight	Approx. 13 kg
<b>Accessories</b>	
Power Cable (Including 3pin→2pin converter)	..... 1
Plugs corresponding to each Output Connector	..... 1set
Instruction Manual and Test Result Sheet	..... 1
<b>Power Source</b>	
Input Voltage Allowable Range	: AC90V~AC132V (50Hz/60Hz) AC180V~AC250V (50Hz/60Hz)
Power Consumption	: Approx. 100VA
<b>&lt;1W output&gt; 1156</b>	
Main Unit	..... 1
Dimensions	425(W)×149(H)×380(D) mm (Excluding projections)
Weight	Approx. 17 kg
<b>Output Filter</b>	
Dimensions	VHF 425(W)× 99(H)×350(D) mm UHF 425(W)×149(H)×350(D) mm (Excluding projections)
Weight	Approx. 17 kg
<b>Accessories</b>	
Power Cable (Including 3pin→2pin converter)	..... 1
Plugs corresponding to each Output Connector	..... 1set
Instruction Manual and Test Result Sheet	..... 1
<b>Power Source</b>	
Input Voltage Allowable Range	: AC90V~AC132V (50Hz/60Hz) AC180V~AC250V (50Hz/60Hz)
Power Consumption	: Approx. 180VA

## Rating

- **Type of Signal**  
One designated TV channel based on CCIR
- **Output Impedance**  
50Ω (N-R), unbalanced
- **Output Level**  
Video Designated power of either 0.1W or 1W (Peak to peak value) (Negative modulation)  
Audio To set at rated P/S ratio
- **Input Impedance**  
Video 75Ω (BNC-R), unbalanced  
Audio 600Ω (BNC-R), unbalanced

- **Input Level**  
Video VS 1.0V (p-p)±2dB, picture positive  
Audio Narrow band 0dBm~+6dBm  
Wide band Main signal 2.0V (p-p), reference, positive polarity
- **Modulation System**  
Video IF-AM balanced modulation system by DC clamp  
Audio IF-FM modulation system by varicap (PLL)  
But, CCIR-L system is IF-AM balanced modulation system
- **Modulation Frequency**  
Video IF<sub>v</sub> 38.9MHz  
Audio IF<sub>A</sub> 34.4MHz(M, N), 33.4MHz (B/G), 32.9MHz(I), 32.4MHz (D/K, L)
- **Modulation Degree**  
Video Rated 87.5%, Max. possible more than 95%  
Audio ±25kHz (M, N), ±50kHz (B/G, I, D/K), possible Max. more than 150% (FM),  
But, possible Max. more than 90% for CCIR (L) based on AM 30%
- **Audio Pre-emphasis (at Narrow)**  
75 μs (M, N) or 50 μs (B/G, I, D/K)
- **Carrier Frequency Accuracy**  
Within ±5×10<sup>-6</sup>, F<sub>A</sub>-F<sub>v</sub> is within 10Hz
- **Frequency Conversion**  
Heterodyne method by upper side local

## Performance

- **Frequency Response**  
Video According to the transmission characteristic of CCIR within output channel band (±0.5dB in band)  
Audio Narrow band Within ±1dB for 50Hz~15kHz against standard pre-emphasis characteristic  
Wide band Within ±0.5dB for 50Hz~60kHz  
Within ±1dB for 50Hz~120kHz
- **Linear Distortion**  
Video For square wave input  
Sag Less than 2%  
Overshoot Less than 8%  
Kp Less than 3 (Measured by SIN<sup>2</sup> pulse)  
(Note) Measured by standard demodulator
- **Non-linear Distortion**  
Video Against the variation of APL 10~90% under rated modulation with DC clamp  
Picture component distortion Within 2%  
Sync. component distortion Within 5%  
Audio Within 0.5% for 50Hz~60kHz  
Within 1% for 50Hz~120kHz
- **DG & DP**  
Video Against the variation of APL 10~90% under rated modulation  
0.1W DG Within ±2%  
DP Within ±2°  
1W DG Within ±3%  
DP Within ±2°  
But, for CCIR-L system(1W), DG : Within ±3%  
and DP : Within ±3°
- **Noise**  
Video For rated modulation Less than -55dB (p-p/rms)  
(Value without filter compensation)  
Hum noise Less than -60dB (p-p/p-p)  
Sync. noise Less than -26dB (p-p/p-p)  
(Buzz noise is less than -46dB against the variation of APL 10~90% under rated video modulation and rated sound modulation (Note) Measured at inter-carrier system.)  
ICPM Within 2°  
Audio As the reference of 400Hz rated modulation  
At de-emphasis ON Less than -60dB
- **Output Variation**  
Video Within 2% against the variation of APL 10~90% under rated modulation
- **Group Delay**  
According to receiving delay characteristic of standard characteristic for each system
- **Cross Modulation**  
Less than -60dB at F<sub>v</sub> level reference
- **Spurious**  
Less than -60dB at F<sub>v</sub> level reference
- **Monitor Accuracy**  
Within ±5% for each monitor
- **Monitor Function**  
Following items can be monitored on meter in panel

## Measuring Item

1. Modulation degree of video & audio
2. RF output level of video & audio

## Please specify followings when ordering is made.

1. RF output power, 0.1W or 1W.
2. System, country name and output channel frequency.
3. Power source voltage.