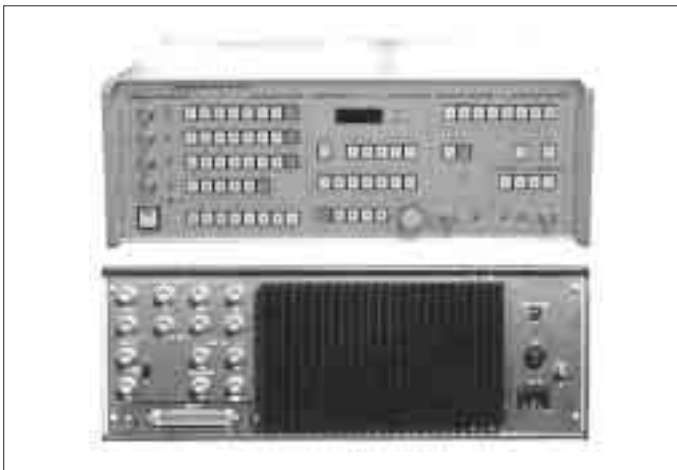


465C-A

TV SOUND MULTIPLEX MODULATOR (USA SYSTEM)



General

This unit is TV sound multiplex modulator to generate TV sound multiplex signal of USA system that is proposal of "ZENITH-dbx" regulated in "OST-60". This unit has all functions of USA system, such as stereo, SAP (Sub-Audio Program) and telemetry (Professional Channel) in one unit. Enhancement of function is made to be able to allow effective measurement in R&D, QC and production factory for TV and VTR with sound multiplex. For automatic measurement, GP-IB control is corresponded (option).

Features

- Correlation is regarded as important by using high performance card of genuine product manufactured by dbx in the U.S.A. Equipping 2 cards, one for stereo and one for SAP.
- By employing IC analog switches for major signal switching circuits, maintenance free is achieved.
- 4 independent audio oscillators of highly stable and low distortion ratio are built-in for MONO/L, R, SAP and telemetry. Monitor terminals for each signal are provided on rear panel.
- As the standard, frequencies of internal oscillator of 100, 300, 1k, 3k, 8k and 10kHz are incorporated.
- Each audio input level can be set digitally in step of 0.5%.
- Each signal output of pilot, SAP and telemetry can be set in step of 1%.
- There are one-touch setting buttons for each audio input level and signal output level, so that setting for voluntary modulation degree can be set by one push. Returning to output of regulated value and changing of setting can be done easily.
- ON/OFF for noise reduction of stereo and SAP channel, pre-emphasis of telemetry, BPF of SAP and telemetry can be made by switch.
- Audio input and composite signal output connectors are provided on both front and rear panels.
- Synchronizing relationship between input video sync. signal and output pilot signal can be set in step of 22.5 degrees on panel, so that combination with RF modulator becomes simple.
- Equipping 99 memories, this unit exhibits power for sequential adjustment.
- All operations on panel can be controlled remotely, and it is possible to be "GP-IB control" or "Sequential control" by request (option).

Composition

Main Unit	1
Dimensions	425(W)×149(H)×380(D) mm (Excluding projections)
Weight	Approx. 17 kg
Accessories	
Power Cable (Including 3pin→2pin converter)	1
Rack Mount Adapter	1 set
Instruction Manual and Test Result Sheet	1
Remote Terminal Plug	1 (Except at the time of GP-IB)
Power Source	
Input Voltage Allowable Range	: AC100V, AC120V, AC220V, AC240V by switch (50Hz/60Hz)
Power Consumption	: Approx. 55VA
Operating Environment	
Temperature	: +5°C ~ +40°C
Humidity	: 45% ~ 85%RH (No dew generation)

Rating

• Signal Input Level and Impedance

MONO/L, R Input

Audio signal of 50Hz~15kHz, 600Ω, 0dBm, BNC-R, Front and rear panels

SAP Input

Audio signal of 50Hz~10kHz, 600Ω, 0dBm, BNC-R

Telemetry Input

Audio signal of 50Hz~3.4kHz, 600Ω, 0dBm, BNC-R

Composite Video Signal Input

VS or Sync. (Using as reference for the horizontal sync. frequency), high input impedance bridging or 75Ω termination, BNC-R

• Composite Output Level and Impedance

Audio multiplex signal of Zenith-dbx proposal system is output.

Each signal can be output alone by switching switch.

Output and modulation degree can be checked with built-in meter simply.

600Ω BNC-R Front and Rear panel, 75Ω BNC-R Rear panel

Monaural

2.0Vp-p (100% value)

Stereo

L+R	2.0Vp-p (Max.)
L-R Carrier suppressed AM Modulation (2fH)	4.0Vp-p (Max.)
Pilot (fH)	0.4Vp-p
	(Stereo Max. level 4.4Vp-p)

SAP

FM (5fH) Max. Frequency Deviation ±10kHz 1.2Vp-p

Telemetry

FM (6.5fH) Max. Frequency Deviation ±3kHz 0.24Vp-p

(In case of output level is 600Ω, in 75Ω monaural 1.0Vp-p)

Composite output can be varied 0~20dB continuously by attenuator on panel.

• Internal Oscillators

Monaural/L, R, SAP

100Hz, 300Hz, 1kHz, 3kHz, 8kHz, 10kHz

Telemetry

100Hz, 300Hz, 1kHz, 3kHz

The above are provided as the standard and is output by switching.

• Pre-emphasis and Noise Reduction

ON/OFF of "75μs pre-emphasis" for monaural/L+R, "dbx-TV NR" for L-R.

SAP and "150μs pre-emphasis" for telemetry can be made.

• Carrier Synchronization

The stereo pilot signal, L-R carrier, SAP carrier and telemetry carrier are synchronized with the horizontal sync. frequency of the composite video signal applied or, when there is no input, automatically synchronized with the internal reference oscillator.

• Digital Setting Function

The audio input level can be set 0~127% in step of 0.5% and pilot signal, SAP carrier and telemetry carrier can be set 0~127% in step of 1%.

• Memory Function

Switch settings on front panel, audio input level and each carrier output level can be memorized by means of 99 patterns and are possible to call up voluntarily.

• Remote Control

① "Bit-to-bit Interface" is provided as the standard function, but, ② "GP-IB Interface" or ③ "Sequential Controller" can be equipped instead of ①.

① Bit-to-bit Interface

Push button switches on the front panel can be controlled by "TTL level" or "negative logic" in nearly bit-to-bit correspondence (In binary system). This is used by connecting with switches controllable at hand.

② GP-IB Interface (Option)

Push button operation and data setting on front panel are controlled remotely by "GP-IB". Indicating in accordance with GP-IB regulation, function is to be following one having basic listener function.

SH1, AH1, T6, L4, SR1, RL0, PP0, DC1, DT1, C0

③ Sequential controller (Option)

Time allocation of 0.0~9.9 sec. is made for each memory of memory number 1~99 and function to execute sequentially according to memory numbers or function of step progress by foot switch can be selected.

Performance

• Total Frequency Response

Monaural (Common for flat and pre-emphasis) 50% modulation, 300Hz reference

50Hz~13kHz Within ±0.3dB

13kHz~15kHz Within ±0.5dB

Stereo L, R (Flat) L-R signal 50% modulation, 300Hz reference

50Hz~13kHz Within ±0.3dB

13kHz~15kHz Within ±0.5dB

Stereo L, R (Noise Reduction) L-R Signal 10% equivalent input modulation

At 300Hz reference

50Hz~13kHz Within ±0.5dB

13kHz~15kHz Within ±1dB

SAP (Flat) 50% modulation, 300Hz reference, BPF OFF

50Hz~8kHz Within ±0.3dB

8kHz~10kHz Within ±0.5dB

SAP (Noise Reduction) L-R Signal 10% equivalent input modulation

At 300Hz reference, BPF ON

50Hz~8kHz Within ±0.75dB

8kHz~10kHz Within ±1.5dB

Telemetry (Common for flat and pre-emphasis) 50% modulation,

300Hz reference, BPF OFF

50Hz~3.4kHz Within ±0.5dB

• Total Distortion Ratio

Monaural (Common for flat and pre-emphasis) 100% modulation

50Hz~15kHz Less than 0.1%

Stereo L, R (Flat) L or R 100% modulation

50Hz~15kHz Less than 0.15%

Stereo L, R (Noise Reduction) L-R Signal 10% equivalent input modulation.

At 300Hz reference

50Hz ~ 300Hz	Less than 0.15%
300Hz ~ 3kHz	Less than 0.2%
3kHz ~ 10kHz	Less than 0.4%
10kHz ~ 15kHz	Less than 0.75%

SAP (Flat) 100% modulation, 300Hz reference, BPF OFF

50Hz ~ 10kHz	Less than 0.2%
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SAP (Noise Reduction) 10% equivalent input modulation 300Hz reference, BPF ON

50Hz ~ 300Hz	Less than 0.5%
300Hz ~ 1kHz	Less than 1.0%
1kHz ~ 10kHz	Less than 1.5%

Telemetry (Common for flat and pre-emphasis) 100% modulation, 300Hz reference, BPF OFF

50Hz ~ 3.4kHz	Less than 0.3%
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• **Signal to Noise Ratio**

Monaural (Common for flat and pre-emphasis) 100% modulation, 300Hz reference, demodulator de-emphasis ON

Less than 75dB

Stereo L, R (Flat) 100% modulation, 300Hz reference, demodulator de-emphasis ON

Less than 75dB

Stereo L, R (Noise Reduction) 100% modulation, 300Hz reference, demodulator noise reduction ON

Less than 75dB

SAP (Flat) 100% modulation, 300Hz reference, BPF ON, demodulator de-emphasis ON

Less than 70dB

SAP (Noise Reduction) 100% modulation, 300Hz reference, BPF ON, demodulator noise reduction ON

Less than 75dB

Telemetry (Common for flat and pre-emphasis) 100% modulation, 300Hz reference, BPF ON, demodulator de-emphasis ON

Less than 60dB

• **Stereo Separation Characteristic**

Flat

100% modulation, 300Hz reference	
50Hz ~ 100Hz	More than 43dB
100Hz ~ 8kHz	More than 48dB
8kHz ~ 13kHz	More than 43dB
13kHz ~ 15kHz	More than 38dB

Noise Reduction

L-R Signal 10% equivalent input modulation, 300Hz reference	
50Hz ~ 100Hz	More than 26dB
100Hz ~ 8kHz	More than 30dB
8kHz ~ 13kHz	More than 26dB
13kHz ~ 15kHz	More than 20dB

• **Dual Audio Leak Characteristic**

Noise reduction ON, BPF ON, 300Hz 100% equivalent input modulation

Stereo (L, R) → SAP	More than 70dB
SAP → Stereo (L, R)	More than 70dB
Telemetry → SAP	More than 70dB
SAP → Telemetry	More than 45dB

Attention : For above measurements, Eiden's Model 466 Sound Multiplex Demodulator is to be used.