Technical Specification

EXHIBIT # : 4-1
FCC ID : ACJ927122AH
OUR REF. : MKS98-F016
MODEL NO. : PV 9450

Power Source	:AC 120 V, 60 Hz
Power Consumption	:Approx. 23W
Television System	:EIA Standard (525 lines, 60 fields) NTSC Luminance : Frequency modulation Color Signal : converted sub carrier direct recording
Audio Track	:1 track (Normal) 2 Channels (Hi-Fi Sound)
Tape Format	:Tape width 1/2″ (12.7 mm), high density tape
Tape Speed	:33.35 mm/sec. at SP mode 16.67 mm/sec. at LP mode 11.12 mm/sec. at SLP mode
Record/Playback Time	:480 min. (max.)
FF/REW Time	:Less than 5 min.(T-120)
Heads	:Video : 4 rotary heads Audio : 1 stationary head (Normal) 2 rotary heads (Hi-Fi Sound) Control : 1 stationary head Erase : 1 full track
Input Level	:Video : Video Input Connector 1.0 V p-p, 75 ohms Audio : Audio Input Connector -10 dBV, 47k ohms
Output Level	:Video : Video Output Connector 1.0 V p-p, 75 ohms Audio : Audio Output Connector 8 dBV, 600 ohms
RF Modulated Output	:Channel 3 and 4 (selective)
RF Input	:Same as conventional TV receiver
Video Horizontal Resolution (on mono scope test pattern)	:Color & B/W : More than 230 lines (VHS mode)
Audio Frequency Response	:100 Hz 8 kHz at SP mode (Normal Audio Sound) 20 Hz 20 kHz (Hi Fi Audio Sound)
Signal to Noise Ratio	:Video : More than 43 dB at SP mode (VHS) Audio : More than 42 dB at SP mode (Normal) More than 60 dB (Hi Fi)
Operating Humidity	:10 % 75 %
Operating Temperature	:41°F 104°F (5℃ - 40℃)

EXHIBIT # : 4-2
FCC ID : ACJ927122AH
OUR REF. : MKS98-F016
MODEL NO. : PV-9450

1) Type(s) of emission

Not applicable

2) Frequency range

USA standard broadcasting signal CHANNEL 3 & 4

3) Range of operating power and description of means provided for Variation of operating power

Not applicable

4) Maximum power rating as defined in the applicable rules

Not applicable

5) Tune up procedure over the power range or at specific operating power levels

Not applicable

6) A description of all circuitry and devices provided for determining and stabilizing frequency

Video Carrier Frequency
Frequency of video carrier output is determined by output of PLL 1.
Consequently, the frequency stability is determined by PLL 1 which is nominally ±0.2 %.

Audio Carrier Frequency
Audio Carrier Frequency is generated by mixing of video carrier and output signal of the FM-OSC in the RF-MIXER of IC201.
The output signal of the FM-OSC is generated by modulating of audio input signal and output signal of PLL 2(4.5MHz)
Frequency of audio carrier output is determined by output of PLL 2.
The frequency stability is determined by PLL 2 and maintained within ±0.2%.

7) A description of any circuits or devices employed for suppression of spurious radiation, for limiting modulation, and for limiting the operating power.

a. Suppression of Spurious Radiation
Low Pass Filter consisted of L1 and C1

b. Limit of Modulation
Modulations for video carrier and audio carrier are limited, because both inputs supplied from VCR are maintained constant.

c. Limit of Operating Power
Not applicable

8) Function of each electron tube, semiconductor or other active circuit device

RF oscillator (IC201)
The video carrier frequency is generated by the RF Oscillator and controlled by the PLL 1.
Generated video carrier frequency is supplied to the RF MIXER through the Buffer Amplifier.

RF MIXER (IC201)
The output of the RF oscillator and video signal from the White Clip are supplied to the RF MIXER.
Amplitude modulated video carrier is obtained as the RF Output through the Buffer Amplifier.
FM modulated audio signal is supplied to the RF MIXER from the FM Oscillator.
The output of the RF Oscillator is made both side-band modulation by FM modulated audio signal, as result, audio carrier is obtained as the RF Output through the Buffer Amplifier

Clamp and White Clip (IC201)
The video input is clamped by this circuit. It prevents from over-modulation.

FM Oscillator (IC201)
The oscillated frequency is adjusted to 4.5MHz by the PLL 2.
Audio signal is supplied to the FM Oscillator.
FM modulated audio carrier is obtained as an output.

Low Pass Filter (L1, C1)
The low pass filter is provided for minimize the spurious radiation in RF signal.

REF oscillator (IC201)
Each reference frequency that generated in the REF Oscillator is supplied to the PLL 1 and the PLL 2 for control of the RF oscillator and the FM Oscillator.

Carrier OFF SW
When TV side is selected by the TV/VCR SW, the Carrier OFF SW shut off power of the RF Oscillator and the RF MIXER.

Description of Application Model

FCC ID : ACJ927122AH
OUR REF : MKS98-F016
MODEL NO. : PV-9450

Application model is as below.

FCC ID:	ACJ927122AH
Appliance name:	Video Cassette Recorder
Grantee Name:	Matsushita Electric Industrial Co., Ltd.
Model No.:	PV 9450
Brand Name:	Panasonic
Chassis No.:	KG 19HG
Cabinet Material:	Top, Side: Steel Bottom: Steel & Plastics Rear, Front: Plastics
RF Converter:	VEQS0611 (RF Converter circuit is included in RF Demodulator)
Output Channel:	CH 3 & 4
Broadcast Channels	VHF 2-13, UHF 14-69
CATV Channels:	Mid band A through I (14-22) Super band J through W (23 36) Hyper band AA - EEE (37-64) Low band A-5 - A-1 (95-99) Special CATV channel 5A (01) Ultra band 65-94, 100 125
Antenna Terminal:	One VHF/UHF Input Antenna Terminal and One VHF/UHF Output Terminal are provided.
Impedance:	75 ohms Transfer SW is provided in RF Demodulator circuit. Power splitter is provided in RF Demodulator circuit.
Highest frequency-generated or used:	847 MHz (Local oscillator frequency of UHF Ch69) 71.75 MHz (Aural carrier frequency of Converter Ch4)
Input Terminal:	Video and Audio Input Terminals are provided.
Remote Controller:	Wireless