Exhibit 4

Brief Description of Circuit Functions

The brief ckt. description of M40 109B4/109S4/107P4" Monitor

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1. GENERAL DESCRIPTION

The M40 platform includes 109B4 using 19" flat shadow mask CRT, 109S4 using 19"convention CRT and 107P4 using 17" flat CRT, they are so-called "Digital Controlled Auto-scan Color Display Monitor" with high resolution which can operate at horizontal scan frequency from 30kHz up to 97KHz, 92KHz and 92KHz for109B4, 109S4 and 107P4 respectively, and vertical scan frequencies can operate from 50 to 160 Hz.

These monitors are equipped with an embedded micro-controller, which can preset the required modes, the M40 also provides many functions, such as digital adjustable picture, DDC2B, sRGB, LF3, low emission TCO99, high immunity, ---- etc.

These monitors comply with TCO99 low emission standard and also fulfill E2000 automatic power saving requirements; to reduce power consumption less than 2 watts in power saving OFF mode, the monitor also can complies with VESA standard and energy star computer program initiated by the EPA.

2. DESCRIPTION OF CIRCUIT DIAGRAM

This description mainly introduces the functions including power supply, horizontal / vertical deflection, video amplifier, micro-controller and H / V convergence control, etc.

A. POWER SUPPLY

The monitor is designed to adopt switching mode power supply which can operate mains input from 90VAC to 264VAC, this switching power supply apply an IC TEA1507 for SOPS controller. The control scheme transforms a switching converter from a voltage source into a multi-output voltage, the control concept is exhibited many desirable properties such as inherent over-load protection, stable and fast system response, the maximum output power capability is up to 110 watts for different models, then a power limiting circuit is added for different power delivery and safety reason, on main power supply circuit, secondary feedback via a photo-coupler is used to obtain a stable output voltage, the secondary outputs supply all necessary voltages for deflection and video and micro-controller.

In order to meet new requirement of E2000 - power consumption less 2 watts @ off mode, The TEA1507 power supply is adopt, the power applies SOPS technology, not only supply the +5V to micro-controller & rest, and to be switched into burst mode via micro-controller for less 2 watts requirement @ off mode (actual measuring data is typical 1 watt)

This monitor can save power consumption while no sync pulses and automatically recover to normal power on when sync signals are detected by micro-controller, the power saving off mode still exist in new designed monitors but suspend / stand-by mode are deleted due to pattern infringement issue, but still reserve them for the option and future implementation required.

B. HORIZONTAL DEFLECTION / VERTICAL DEFLECTION / EHT GENERATOR

HORIZONTAL DEFLECTION:

The heart of horizontal/vertical deflection controller is TDA4841, which can offer a complete and efficient small signal sync processing for auto-sync monitors, all functions are controlled via I2C bus.

This controller provides sync processing, which can accept separate input signals, a very short settling time after mode change for protection of external power components has been taken into account.

The TDA4841 provides extensive functions like a flexible B+ controller block of H-deflection and a geometry control with facilities, leading to excellent picture quality, this device also can directly drive the vertical deflection output stage, the line driver stage, the E/W output stage and all controls are tracked with the incoming frequencies, picture can be adjusted along horizontal direction by OSD H-shift control, the horizontal size, east/west, trapezoid corrections are obtained by varying the supply voltage of H-deflection circuit via buck converter, five capacitors plus power MOSFET switches and DC controlled linearity coil are designed for optimal screen linearity.

VERTICAL DEFLECTION:

The majority of vertical deflection function is integrated by two ICs: TDA4841 and TDA8172.

The TDA4841 takes care of sync polarity correction, automatic catching and holding of the vertical oscillator, generation of saw-tooth drive current for vertical output and vertical s-correction, and generation of a correct V-blanking pulse for video blanking during vertical retrace lines.

The TDA8172 is a DC-coupled vertical deflection booster with differential input signals is suitable for color monitor. The output stage has thermal and soar protection, and high linear saw-tooth signal amplification to obtain the required vertical deflection current.

EHT GENERATOR

The IC UC3843AN is used as a controller to generate required extra high voltage for CRT, the transformer(LOT) transfers the voltage to required anode voltage and rest tertiary output voltage.
The adjustable focus (G3) and screen (G2) voltages are internally derived from the anode voltage, other secondary windings are used to generate the voltages for G1, also provides dynamic focus on G4 to get a good focus performance. (G4 is also adjustable).
For safety reasons, x-ray protection circuit is included, that UC3843AN will feed fold the EHT generator if the anode voltage exceeds a certain value (27—29.5kV), this circuit is also used for over beam current protection, it will feed fold the EHT in case the total beam current can not exceeds a certain value.

C. VIDEO AMPLIFIER

VIDEO AMPLIFIER:

The video circuit mainly consists of Light Frame IC TDA4823, pre-amplifier TDA4886A, post amplifier LM2435T and DC restoration circuit and OSD IC Novatek 68275-00031 the video DC level and gain at cathode are controlled via I2C bus & software.

The red, green and blue video signals are amplified by pre-amplifier and post-amplifier, then AC couple to CRT cathodes via DC restoration circuits, three cut-off adjustments are provided to set the video black level at cathode for all three guns, three individual gain adjustments are also provided to adjust the white balance, both cut-off and gain controls are digital control via micro-controller.

A spot-killer circuit is also added to prevent the CRT damage due to spot burn out when the set is switched off.

D. H / V CONVERGENCE CONTROL (only for 107P4)

The convergence coils are combined with deflection yoke, they are also driven by DC amplifiers. Via OSD menu, two control functions H-convergence and V-convergence can be selected to adjust the convergence of CRT by using digital control.

E. MICRO-CONTROLLER & DDC2B

GENERAL DESCRIPTION:

The Weltrend WT62P2 micro-controller is used to control all required functions of monitors, the preset data are stored in EEPROM M24C16, the most important point is used " interrupt " to do the fast detect of mode change, then the MCU deliver a good protection behavior for horizontal output transistor during mode change. Meanwhile, the DDC2B function is by software control.

HARDWARE DEFINITION:

a) KEY BOARD

There are five keypads at the front of monitor for the OSD control.

- OSD function key:

- Enter
  Push it, to confirm the entrance or exit from the OSD window

- UP
  To select the parameters which are chosen from OSD.

- DOWN
  To select the parameters which are chosen from OSD.

- RIGHT
  To adjust the parameter which are chosen from OSD to right side

- LEFT
  To adjust the parameter which are chosen from OSD to left side

b) OSD will disappear and SAVE AUTOMATICALLY after non-operation.

c) Software will control the DPMS according to the SYNC status.