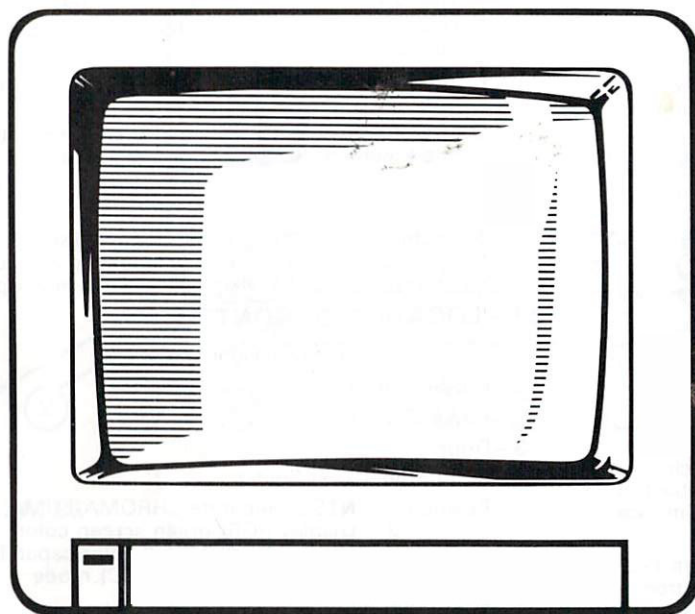


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**OPERATING INSTRUCTIONS**

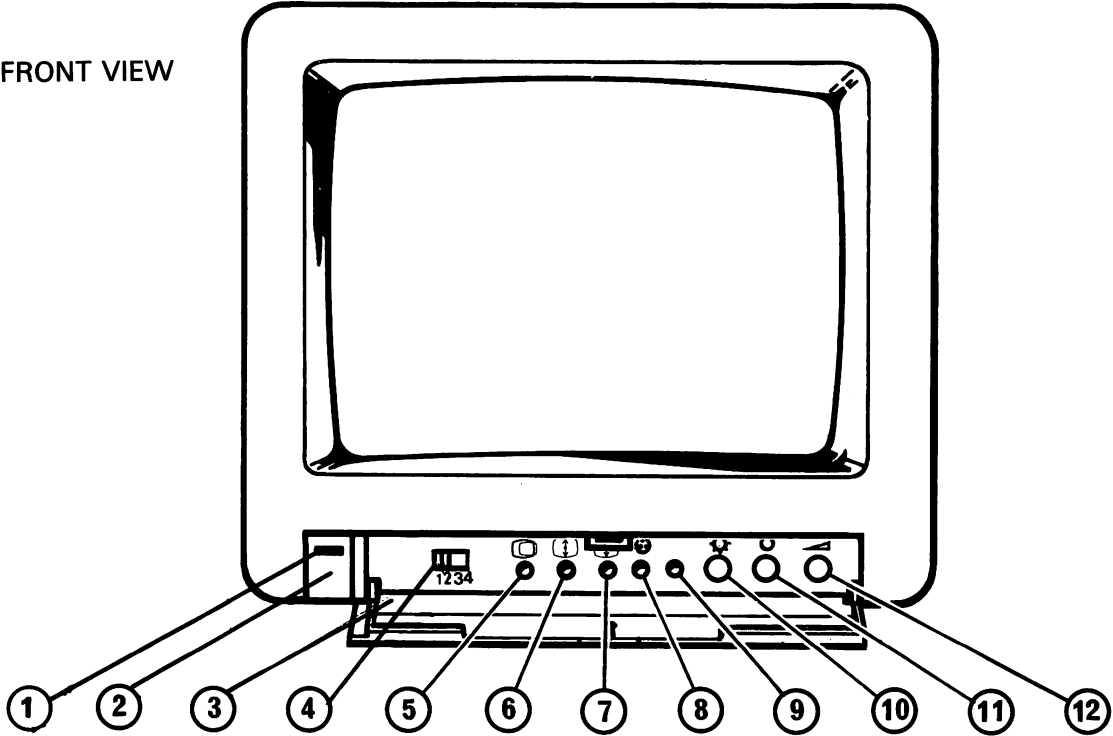
**DATA GRADE RGBI/VIDEO COMPOSITE COLOR MONITOR**  
**CM 36512 V1**

# Contents

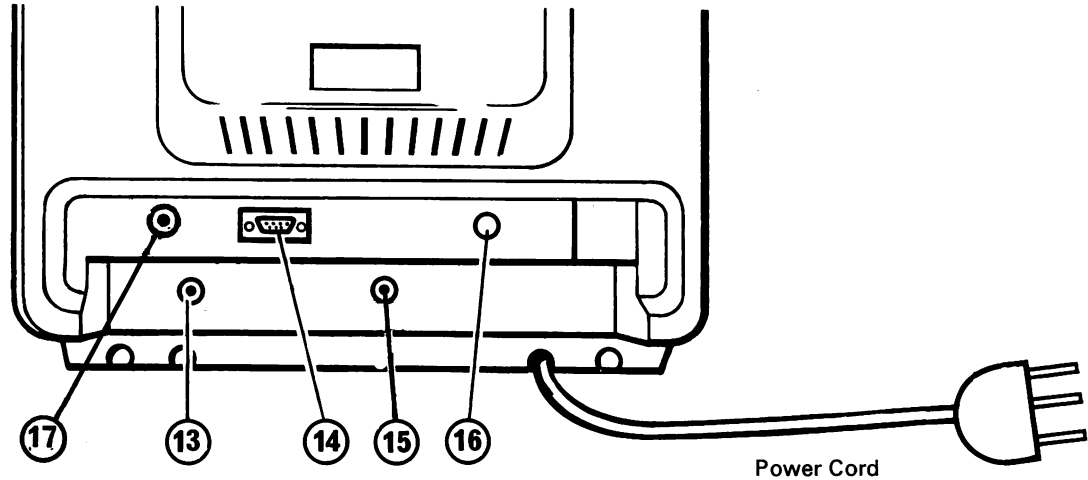
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FIGURE 1

FRONT VIEW



BACK VIEW



## I – INTRODUCTION

Congratulations on your purchase of the **THOMSON CM 36512 VI** color monitor! Your **THOMSON CM 36512 VI** color monitor will provide you with a high quality, reliable display which will add to your computing comfort for years to come. This display monitor is a precision engineered product designed for use with the computer system which delivers a RGB Plus intensity signal in TTL level or a composite video or a separate chroma/Luma video signal.

Like all modern precision instruments, this monitor requires proper installation and care. It has many facilities to offer and for the best understanding of these facilities please read the operating instructions thoroughly before installing or using this monitor.

## II – SAFETY PRECAUTIONS

The following safety instructions have been included in compliance with safety standard regulations. Please read them carefully.








- 1 – **Read instructions** – All the safety and operating instructions should be read before the monitor is operated.
- 2 – **Retain instructions** – The safety and operating instructions should be retained for future reference.
- 3 – **Heed warnings** – All warnings on the monitor and in the operating instructions should be adhered to.
- 4 – **Follow instructions** – All operating and use instructions should be followed.
- 5 – **Water and Moisture** – The monitor should not be used near water or exposed to excessive moisture to reduce the risk of electric shock or fire.
- 6 – **Ventilation** – The monitor should be situated so that its location or position does not interfere with its proper ventilation. Never block or cover ventilation openings with cloth or other material. The monitor should not be placed in a built-in installation, such as a cabinet or bookcase, that may impede the flow of air through the ventilation openings.
- 7 – **Heat** – The monitor should be situated away from heat source such as radiators, heat registers, or other electronic/electrical appliances which produce heat. Avoid exposure to direct sunlight.
- 8 – **Power Sources** – The monitor should be connected to an A/C power supply only. It should never be connected to D/C or power off any other voltage or frequency than 110-120V, 60 Hz.
- 9 – **Grounding** – The monitor should always be plugged into an outlet that provides grounding (that is a 3-prong plug outlet).
- 10 – **Power Cord Protection** – Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to cords at plugs, convenience receptacles, and the point at which it exits from the appliance.
- 11 – **Cleaning** – The monitor cabinet should be cleaned only with a soft dry cloth. The CRT glass can be cleaned by wiping with

a soft dry cloth that has been dampened with water or glass cleaner. Do **NOT** spray water or glass cleaner fluids directly onto the CRT.

- 12 – **Non-Use Periods** – The power cord of the monitor should be unplugged from the outlet when left unused for a long period of time.
- 13 – **Object and Liquid Entry** – Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
- 14 – **Damage Requiring Service** – The monitor should be serviced by qualified personnel when:
  - A. The power supply cord or the plug has been damaged, or,
  - B. Objects have fallen, or liquid has been spilled into the monitor, or,
  - C. The monitor has been exposed to rain or excessive moisture, or
  - D. The monitor does not appear to operate normally or exhibits a marked change in performance, or,
  - E. The monitor has been dropped, or the enclosure damaged.
- 15 – **Servicing** – The user should not attempt to service the monitor beyond that described in the operating instructions. All other service should be referred to qualified service personnel.

## III – LOCATION OF CONTROLS

(refer to Figure 1, page 3)

- 1 – Power Indicator
- 2 – Power Switch
- 3 – Door
- 4 – Input Signal/Text Switch
  - Position 1 – NTSC (Separate CHROMA/LUMA) mode
  - 2 – Display RGBI green screen color
  - 3 – Display RGBI 16 full color capability
  - 4 – Video composite (NTSC) mode
- 5 – Horizontal Picture Shift (  )
- 6 – Vertical Synchronization (  )
- 7 – Vertical Picture Amplitude (  )
- 8 – Intensity/Color Control (  )
- 9 – Tint Control
- 10 – Brightness (  )
- 11 – Contrast (  )
- 12 – Volume (  )
- 13 – “Sound” Input Connector RCA Phonojack
- 14 – 9 pin ‘D’ Sub. Miniature Connector
- 15 – “Video or “Luma” Input Connector RCA Phonojack
- 16 – Focus
- 17 – “CHROMA” input connector RCA Phonojack

## IV – CONNECTING THE MONITOR TO THE COMPUTER

As mentioned earlier your monitor has the capability to be used with personal computers that feature either a video composite or a separate Chroma/Luma output (NTSC) or RGBI TTL output. Before attempting to connect the monitor to your computer consult your computer, user's manual and determine the means of output your computer uses. If you are unable to establish what output your computer uses, contact your computer dealer, computer manufacturer or call **THOMSON** Technical Support at (213) 821-2995.

After you have decided which output your computer features, refer to the appropriate section. Section A covers the connection of a computer using video composite output (NTSC) and section B covers RGBI TTL output and section C covers video separate Chroma/Luma output (NTSC).

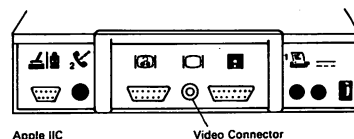
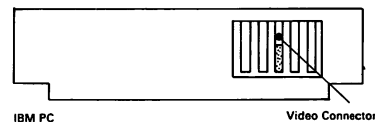
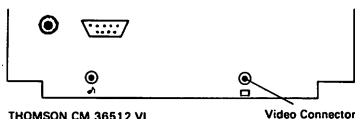
### A – Connecting to a computer using video composite output

- 1 – Before starting to install your computer monitor you will need the following:

- a video cable with RCA phonojack connectors,
- an audio cable with RCA phonojack connectors (optional). The audio cable is necessary only if your computer does not include a speaker but relies on a speaker inside the monitor to generate sound.

**NOTE:** If the necessary cables have not been provided with your computer, they are generally available at computer stores. Be prepared to tell the salesperson the model number of your computer and that your monitor uses and RCA cinch-type phonojack.

- 2 – Before starting to connect your monitor to your computer, be sure that both pieces of equipment are turned off. The monitor is off when the push-button on the front panel is flush with the panel vs the recessed position. (Refer to "Location of Controls" and Figure 1.)
- 3 – Refer to "Location of Controls" Figure 1 and identify the Video Input Connector RCA Phonojack (15). Plug one end of the RCA jack on your video cable into this connector (15) on the back of your monitor.
- 4 – Plug the RCA jack on the other end of the video cable into the video connector on the back of your computer. If you are unsure of the connection, refer to your computer user's manual. Do **NOT** force the RCA jack into the connector. If the jack does not seem to fit properly, double check to ensure that you are placing it on the right connector. If you are using the right connector and it still doesn't fit, call **THOMSON**, a **THOMSON** authorized dealer or representative in your area.



- 5 – If your computer generates sound signals and you wish to utilize the **CM 36512 VI**'s speaker, locate the Sound Input Connector RCA Phonojack (13) in Figure 1.

Plug one end of your connector cable into the Sound Input Connector (13) on the back of your monitor and the other end into the Audio Connector on the back of your computer.

- 6 – Now, in order to set your monitor to accept video composite (NTSC) inputs you must locate the Input Signal/Text Switch using the "Location of Controls" and Figure 1. After locating the Text Switch (4), slide the switch to position "4".
- 7 – Plug your power cord into a properly grounded outlet (3 prong outlet).
- 8 – Turn on your computer and monitor. Your **CM 36512 VI** is now ready for operation. When the monitor is turned on, the power indicator (1) should be lit and the button in its recessed position. When it is off, the button will be flush with the panel and the power indicator unlit.

### B – Connecting to a computer using RGBI TTL output

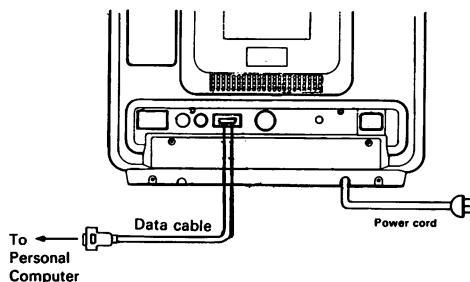
- 1 – Before starting to install your computer monitor you will need the following:

- a screwdriver,
- a shielded data cable with male 9-pin connectors at each end.

**NOTE:** If the data cable is not provided with your computer, one may be purchased from your local **THOMSON** dealer. Request item number DC D9M9M.

- 2 – Before starting to connect your monitor to your computer, be sure that both pieces of equipment are turned off. The monitor is off when the push-button on the front panel is flush with the panel vs the recessed position. (Refer to "Location of Controls" and Figure 1).

- 3 – Refer to “Location of Controls” Figure 1 and identify the 9-pin “D” Subminiature Connector (14).



- 4 – Plug one end of the data cable into the 9-pin Subminiature Connector (14) on the back of your monitor. Take the other end of the data cable and plug it into the 9-pin connector on the back of your computer. Do **not** force the cable into the connector. If it does not seem to fit properly, double check to ensure that you are inserting it in the right connector and right directions. If it still doesn't fit, call **THOMSON**, a **THOMSON** authorized dealer or representative in your area.
- 5 – Tighten the screws on both ends of the 9-pin connector so that your data cable is securely connected to the back of your computer and monitor.
- 6 – When using your monitor in the RGBI TTL mode you are able to select according to your preference, green or 16 full color capability displayed on your screen. Green displays are particularly desirable when text or data applications are being performed. This switch may be moved between any the 2 positions during operation as desired.

By referred to “Location of Controls” identify the Input Signal/Text Switch (4). After locating the Text Switch, slide the switch to one of the following positions for the desired effect:

- Position 2 – Display green color,
- Position 3 – Display 16 full color capability.

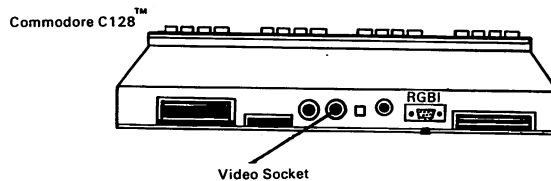
- 7 – Plug your power cord into a properly grounded outlet (3 prong outlet).
- 8 – Turn on your computer and monitor. Your **CM 36512 VI** is ready for operation. When the monitor is on, the power indicator (1) should be lit and the button will be in its recessed position. When off, the button will be flush with the panel and the power indicator unlit.

## C – CONNECTING TO A COMPUTER USING VIDEO SEPARATE CHROMA/LUMA (NTSC) OUTPUT

- 1 – Before starting to install your computer monitor you need the following:–
- a DIN CABLE with 8-Pin Din connector at one end and three RCA connectors at the other end.

**NOTE:** If the DIN CABLE is not provided with your computer, one may be purchased from your local dealer.

- 2 – Before starting to connect your monitor to your computer, be sure that both pieces of equipment are turned off. The monitor is off when the push-button on the front panel is flush with the panel vs the recessed position. (Refer to “Location of Controls” and Figure 1).
- 3 – Refer to “Location of Controls” Figure 1 and identify the “LUMA” input connector RCA phonojack (15), “CHROMA” input connector RCA (17) and sound input connector RCA (13). Connect RCA Pin Plugs of the DIN cable to the back of the monitor as follows:
- Audio Output Plug (White) to “Sound” input connector RCA Phonojack (13).
  - Chroma Output Plug (red) to “chroma” input connector RCA Phonojack (17).
  - Luminance Output Plug (yellow) to “Luma” or “Video” input connector RCA Phonojack (15).
- 4 – Connect the DIN connector on the other end of the DIN cable into the Video Socket on the back of your computer. Do not force the cable into the connector. If it does not seem to fit properly, double check to ensure that you are inserting it in the right connector and right direction. If it still doesn't fit, call Thomson, a Thomson authorized dealer or representative in your area.



- 5 – Now, in order to set your monitor to accept Video Separate Chroma/Luma (NTSC) inputs you must locate the input signal/Text switch using the “location of Controls” and Figure 1. After locating the Text Switch (4), slide the switch to position “1”.
- 6 – Plug your power cord into a properly grounded outlet (3 prong outlet).
- 7 – Turn on your computer and monitor. Your **CM 36512 VI** is now ready for operation. When the monitor is turned on, the power indicator (1) should be lit and the button in its recessed position. When it is off, the button will be flush with the panel and the power indicator unlit.

## V – RECOMMENDATION

Upon turning on your monitor if it is malfunctioning, check that:

- it is properly connected to the computer and power outlet,
- all controls are in the correct position.

If, you still find for example, no light on the screen, or a horizontal bright line in place of image, switch off immediately and call in a qualified technician to maintain your monitor.

### IMPORTANT RECOMMENDATIONS

Never remove the rear protective panel. Accidental contact with chassis components can be extremely dangerous. As there are no user serviceable parts inside the unit, do not attempt your own repairs. Neither **THOMSON**, nor its subsidiaries nor its agents, can accept responsibility for any damage caused to persons or property that result from unauthorized repairs or attempts to repair. This action will also result in an invalidation of warranty.


**WARNING:** This equipment has been certified to comply with the limits for a class B computing device. Pursuant to subpart J of part 15 of FCC rules. Only peripherals (computer input/output devices, terminals, printers, etc.) certified to comply with the class B limits may be attached to this monitor. Operation with noncertified peripherals is likely to result in interference to radio and TV reception.

This equipment generates and uses radio frequency energy and if not installed and used in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a class B computing device in accordance with the specifications in subpart J of part 15 of FCC rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:


- reorient the receiving antenna,
- relocate the computer with respect to the receiver,
- move the computer away from the receiver,
- plug the computer into a different outlet so that computer and receiver are on different branch circuits.


## VI – ADJUSTMENT OF DISPLAY

To reach the controls in the front control panel, push the center of the door (3) to open and expose the controls. Refer to "Location of Controls" and Figure 1 for the location of individual adjustment controls.

10. –  **Brightness** – To adjust the brightness level of the screen, turn the control clockwise to increase the brightness level. Turn counterclockwise to decrease.


**NOTE :** Too much brightness may be straining to the eyes and decrease the life span of the picture tube screen. When switching on the monitor, you will need a few seconds to get the best quality picture


11. –  **Contrast** – Turn to adjust to obtain the proper contrast between the dark and bright portions of the data display. This control is used to change the darkness of the background color as opposed to the data being displayed on the screen.


12. –  **Volume** – To adjust the volume level, turn the control clockwise for increased volume and counterclockwise for a decrease in volume.

The following list of controls have been set by the manufacturer. These controls should not need to be adjusted but if there is a noticeable problem the adjustment should be made with a small plastic screwdriver.

5. –  **Horizontal Picture Shift** – Turn control either clockwise or counterclockwise to center the image in the display area.

6. –  **Vertical Synchronization** – Turn the control either clockwise or counterclockwise to stop the display from jumping. This control is used only when the display is consistently jumping or jittery, not when there is an occasional jump.

7. –  **Vertical Picture Amplitude** – Turn the control either clockwise or counterclockwise to cause the display to appear taller or shorter. Unlike Horizontal Picture Shift, this control does not move the display but stretches or shrinks the display.

8. –  **Intensity/Color Control** – Turn the control either clockwise or counterclockwise to improve intensity and color of the display. Unlike the brightness control this control is used when the intensity and color are noticeably different in different areas of the display (i.e. the left of the screen is brighter than the right).

9. – **Tint Control** – Turn the control either clockwise or counterclockwise to adjust the tint of the screen.

**NOTE:** Only used when in video composite and separate (Chroma/Luma) modes.

16. – **Focus Control** – The focus control is set by the manufacturer. It is suggested that this control only be adjusted by a qualified technician.

## VII – TECHNICAL SPECIFICATIONS

Picture Tube : 14" (36cm). Tinted black stripe 0.51 mm  
 Video Bandwidth : 4.5 MHz (NTSC); 12 MHz (RGBI TTL)  
 Input Signals : RGB direct drive system  
                   Intensity           TTL level, positive  
                   Video Signal       TTL level, positive  
                   Vertical Sync       TTL level, positive  
                   Horizontal Sync    TTL level, positive  
 NOTE: All TTL level inputs are separate.

### Video input

Input type : Composite video signal (CVBS)  
 Input level : 1.0 Vp-p (sync negative 0.3 V)  
 Input impedance : 75  $\Omega$   
 Connector type : RCA pin jack

### 1) Luminance signal input

Input type : Composite video signal (VS)  
 Input level : 1.0 Vp-p (sync negative 0.3 V)  
 Input impedance : 75  $\Omega$   
 Connector type : RCA pin jack

### 2) Chrominance signal input

Input type : NTSC chroma signal  
 Input level : 1.0 Vp-p  
 Input impedance : 75  $\Omega$   
 Connector type : RCA pin jack

### Audio input

Input level : 1.0 Vp-p  
 Input impedance : 10 k $\Omega$   
 Connector type : RCA pin jack

### Characters

: RGBI TTL – 80 characters x 25 lines  
                   (2000 characters)  
                   NTSC – 40 characters x 25 lines  
                   (1000 characters)

### Resolutions

: 560 x 240 pixels

### Line Frequency

: 15.7 KHz

### Raster Frequency

: 50/60 Hz

### Sound Output

: 0.85W (max.)

### Input Power

: 90 V – 140 V A/C, 50/60 Hz

### Power Consumption

: 60W

### Unit Net Weight

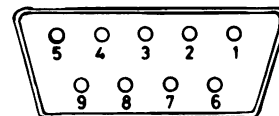
: 22 lbs. (10 kgs)

**NOTE:** IBM is a registered trademark of International Business Machines Corporation.

Apple is the registered trademark of Apple Computer, Inc.

Commodore is a registered trademark and C128 is a trademark of Commodore Electronics Limited.

## VIII – 9-PIN SUBMINIATURE CONNECTOR



Pin Number	Pin Designation
1	Chassis Ground
2	Chassis Ground
3	Red In
4	Green In
5	Blue In
6	Intensity In
7	Reserved
8	Horizontal Sync.
9	Vertical Sync.

*\*Technical specifications subject to change without notice.*





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