m57L Installation & Configuration Guide

PLANAR

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Direct-view LCD One-Year Warranty Planar's m57L is designed to be easily serviceable. It's easier and more cost effective for our customers to replace modules than to send the entire display back to Planar's factory for repair. The majority of the parts in each direct-view LCD display are built as modules that can be replaced quickly. We call these modules Field Replaceable Units (FRUs). All replacement parts are shipped in advance to help minimize downtime of your Planar display. Our three-step warranty RMA (Return Material Authorization) process is designed to minimize downtime by an advance exchange of the defective FRU with an Authorized Planar Reseller.
The Standard Warranty period on new products is one year from the date the product ships from Planar. It covers the cost of the failed parts, factory repair labor, one-way ground shipping and a flat-rate labor reimbursement for repairs made by a Reseller's Qualified Service Technician.

Warranty Coverage Planar warrants its products to be free from defects in material and workmanship during the warranty period. If, in Planar's determination, a Product proves to be defective in material or workmanship during the warranty period, Planar will, at its sole option, replace or repair the Product with a similar new or refurbished Product or refund the lesser of a pro rata share as determined by the remainder of the warranty period of the then current MSRP or the depreciated value of the Product based on the purchase price, if replacement or repair of the Product is not commercially feasible.

Length of Warranty Planar direct-view products are warranted for one year, including the LCD for manufacturing defects[1]. All other accessories, which includes, but is not limited to, cables, remotes, and other peripherals or accessories included with the Product, are warranted for ninety (90) days. Warranty begins upon date of shipment of Product from a Planar warehouse.

Warranty Exclusions The following conditions or circumstances are not covered under the terms of Planar's warranty:

1 Planar is unable to deliver to PO Box and FPO Box addresses.

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[1] Please see Warranty Exclusions for LCD issues that are not considered manufacturing defects, including UD and TIR.

2 Any Product, on which the serial number has been defaced, modified or removed.

3 Travel time or other labor incurred by Customer in the event of Product failure.

4 Damage, deterioration or malfunction resulting from:

- **a** Accident, abuse, misuse, neglect, improper ventilation, fire, water, disaster, lightning, or other acts of nature, smoke exposure (cigarette or otherwise), unauthorized product modification (including use of an unauthorized mount), or failure to follow instructions supplied with the Product.
- **b** Repair or attempted repair by anyone not authorized by Planar.
- **c** Any damage to the Product due to shipment.
- **d** Any damage during the removal or installation of the product.
- **e** Causes external to the product, such as electric power fluctuations or failure.
- **f** Use of supplies or parts not meeting Planar's specifications.
- **g** Normal wear and tear.
- **h** Customer caused defects, including but not limited to: cracked LCD, scratched LCD, blemished LCD (dark spot larger than 1/16 inch), or scratched/defaced/altered plastics.
- **i** Any damage or dissatisfaction associated with latent images, “burn-in,” or any other damage determined by Planar to be the result of Customer use patterns.
- **j** Customer caused defects, including but not limited to, scratches/defacing.
- **k** Failure to follow maintenance procedures as outlined in the Product’s user guide where a schedule is specified for regular maintenance of the Product.
- **l** Any other cause, which does not relate to a Product defect.
- **m** Operating the display outside the suggested normal usage conditions stated in the User Guide.
- **n** Temporary Image Retention as a result of displaying a static image for long periods of time.

5 Removal, installation, and set-up service charges, not authorized by a Planar support representative.

Complete warranty information can be downloaded from Planar’s website: www.planar.com

Part Number: 020-0606-00A
Revision Date: 03/01/07

Table of Contents

Installing an m57L

This chapter explains how to install an m57L. We suggest that you read the entire chapter before you attempt to install the unit.

Before You Begin

Make sure you have all the items in these checklists before you begin unpacking and installing your m57L(s).

Plan Your Installation

You should have a detailed plan of how the units are to be configured. The plan should include calculations for the following:

- Power (maximum of three units per 20A circuit for 115V operation)
- Cable runs
- Ventilation and cooling requirements
- If hanging display on a wall, location of studs in the wall

Prepare Your Installation Location

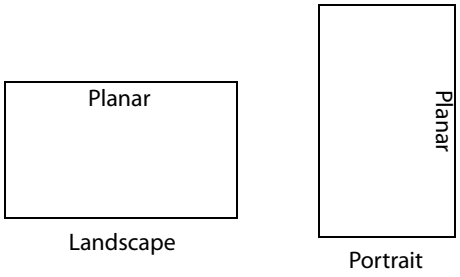
You should have prepared the area where you will install the unit. If custom enclosures are part of the installation they must be fully designed to accommodate the installed unit and its ventilation and cooling requirements.

Tools and Other Things You May Need

- Tools:
  - Level to ensure the display is hung straight or if building a tiled array
  - Stud finder (if hanging display on a wall)
- RJ45 to 9-pin adapter. If you will use RS232 commands to control the display. It adapts the computer's 9-pin serial port to the RJ45 connector used on the display. (See "Connecting RS232 Communication" on page 21.)
- Computer network LAN cables (straight through - no crossover) to interconnect the display for RS232 control
- LCD screen cleaner or LCD wipes, available at most electronics stores
- Service Manual. A service manual is available for downloading from www.planar.com. (For information about downloading manuals, see "Accessing Planar's Technical Support Website" on page 101.)
- Source cables. Component video, S-video, SDI and DVI cables are not included. Although a VGA cable is included with every unit, you may wish to obtain a long-run VGA, SDI or DVI cable if your source is located far away from the display(s).
- At least two people to help lift units into place.

Introduction

The m57L is a 57" diagonal direct-view LCD monitor that can be wall-mounted, ceiling mounted or mounted on a stand. The display can be portrait or landscape. Mounting should be done so the logo is shown as below.



The m57L is only 4.75" deep. It has an aspect ratio of 1.77 (16:9). Its native resolution is HD (1920 × 1080). It accepts a wide range of input pictures from VGA to 1080p.

With the optional Video Input Module, the m57L accepts NTSC and PAL as composite, component, S-Video or SDI. The m57L also accepts composite SECAM and component VGA 1080p video inputs through the Analog connection, as well as HD-SDI input (1080i, 720p).

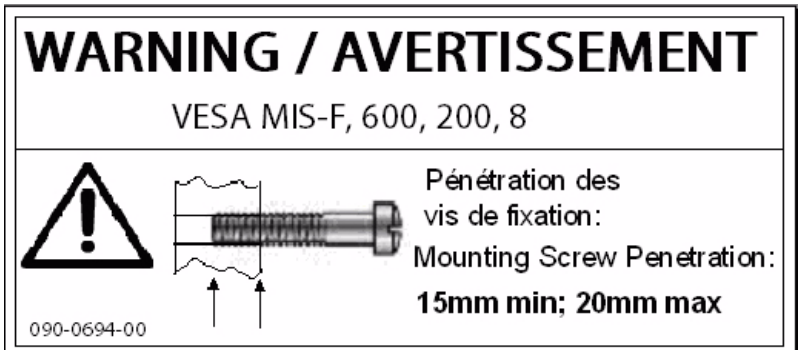
Most importantly, it is easy to set up and adjust.

Caution: This manual is intended for use by qualified service persons and end users with experience installing LCD displays.

Safety for You and the m57L

This display was designed with safety in mind. If you don't heed the safety warning and cautions, you could get hurt. The safety warnings are on stickers in various places in and on the display. They are reproduced on these pages so you can see them all at once.

VESA Mounting



There are some other things you should know related to safety:

WARNING! Wall mounts must be secure.

If the display is hung on a wall, the wall must be strong enough to hold it. The m57L weighs about 105 lbs (48kg). Simply mounting it to wallboard or wall paneling won't be adequate or safe. The mounting method must be capable of holding 5 times this weight, 525 lbs (238 kg).

Caution: The screen could be damaged by heavy pressure.

Slight pressure on the LCD will cause distortion of the image. Heavier pressure will cause permanent damage. m57Ls should be mounted where viewers cannot touch the screen.

Caution: The front polarizer is soft and subject to scratches from sharp objects.

The polarizer is a thin sheet of film laminated to the outside layer of glass on the LCD screen. Take care when handling items nearby the screen.

Caution: This product contains a lithium battery. There is a risk of explosion if the battery is replaced by an incorrect type. Dispose of the battery according to the instructions on the next page.

WARNING! The backlight contains mercury.

Lamp(s) inside this product contain mercury. This product may contain other electronic waste that can be hazardous if not disposed of properly. Recycle or dispose in accordance with local, state, or federal Laws. For more information, contact the Electronic Industries Alliance at www.eiae.org. For lamp specific disposal information, check www.lamprecycle.org.

English

Disposal of old Electrical & Electronic Equipment (Applicable throughout the European Union and other European countries with separate collection programs)

This symbol found on your product or on its packaging, indicates that this product should not be treated as household waste when you wish to dispose of it. Instead, it should be handed over to an applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences to the environment and human health, which could otherwise be caused by inappropriate disposal of this product. The recycling of materials will help to conserve natural resources.

This symbol is only valid in the European Union.
If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.

Français

Mise au rebut des équipements électriques et électroniques usagés (Valable dans l'ensemble de l'Union Européenne ainsi que dans les pays européens disposant de programmes distincts de collecte des déchets)

Ce symbole appliqué sur votre produit ou sur son emballage indique que ce produit ne doit pas être traité comme un déchet ménager lorsque vous voulez le mettre au rebut. Il doit au contraire être remis à un site de collecte agréé pour le recyclage des équipements électriques et électroniques. En veillant à ce que ce produit soit mis au rebut de façon adéquate, vous contribuerez à prévenir les conséquences potentiellement négatives sur l'environnement et sur la santé humaine qui risqueraient de se produire en cas de mise au rebut inappropriée de ce produit. Le recyclage des matériaux contribuera également à économiser les ressources naturelles.

Ce symbole n'est valable que dans l'Union Européenne.
Si vous souhaitez mettre ce produit au rebut, veuillez prendre contact avec les autorités locales ou avec votre revendeur et renseignez-vous sur la méthode de mise au rebut correcte.

Deutsch

Entsorgung von elektrischen & elektronischen Altgeräten (geltend für die europäische Gemeinschaft und andere europäische Länder mit separaten Sammelprogrammen)

Dieses Symbol, zu finden auf Ihrem Produkt oder dessen Verpackung, macht Sie darauf aufmerksam, dass dieses Produkt bei der Entsorgung nicht als Hausmüll behandelt werden darf. Statt dessen sollte es an eine Sammelstelle zum Recycling von elektrischen und elektronischen Altgeräten gegeben werden. Helfen Sie mit, potenziell schädliche Einflüsse auf Umwelt und Gesundheit, die durch eine unsachgemäße Entsorgung dieses Produktes entstehen können, zu vermeiden und entsorgen Sie dieses Produkt ordnungsgemäß. Recycling hilft, natürliche Rohstoffe einzusparen.

Dieses Symbol ist nur innerhalb der europäischen Gemeinschaft gültig.
Wenn Sie dieses Produkt entsorgen möchten, wenden Sie sich bitte an Ihre örtliche Behörde und fragen Sie nach der ordnungsgemäßen Entsorgungsmethode.

Español

Deshecho de equipos eléctricos y electrónicos (aplicable a la Unión Europea y a otros países europeos con programas de reciclaje independientes)

La presencia de este símbolo en el propio producto o en su material de embalaje, indica que no se debe tratar como residuo doméstico cuando desee deshacerse de él. En su lugar, debe entregarlo en el punto limpio correspondiente de reciclaje de equipos eléctricos y electrónicos. Asegurándose de que este producto se desecha de forma correcta, ayudará a evitar posibles consecuencias negativas para la conservación del medioambiente y la salud humana, consecuencias que podrían darse si se deshace del producto de forma inadecuada. El reciclado de materiales ayuda a conservar los recursos naturales.

Este símbolo solamente es válido en la Unión Europea.
Si desea deshacerse de este producto, póngase en contacto con las autoridades locales o con su distribuidor y pida información sobre el método de disposición adecuado.

Italiano

Smaltimento delle attrezzature elettriche ed elettroniche usate (applicabile in tutta la Comunità Europea ed altri Paesi Europei che applicano programmi di raccolta differenziata)

Il simbolo trovato sul prodotto, o sulla sua confezione, indica che il prodotto non può essere trattato come i domestici quando è il momento di smaltirlo. Al contrario, deve essere consegnato ad un centro di raccolta specializzato nel riciclaggio di attrezzature elettriche ed elettroniche. Assicurando che il corretto smaltimento di questo prodotto, si aiuterà a prevenire potenziali conseguenze negative sull'ambiente e sulla salute umana, che possono essere provocate da uno scorretto smaltimento di questa attrezzatura. I materiali riciclati aiuteranno a conservare le risorse naturali.

Questo simbolo è valido solo nell'Unione Europea.
Per smaltire questo prodotto, mettersi in contatto con le autorità locali – o con il rivenditore – e chiedere informazioni sul corretto metodo di smaltimento.

Nederlands

Verwijderen van oude elektrische en elektronische apparatuur (toepasselijk in de volledige Europese Unie en andere Europese landen met afzonderlijke programma's voor afvalverzameling)

Dit symbool dat op het product of zijn verpakking is aangebracht, geeft aan dat dit product niet mag worden behandeld als huishoudelijk afval als u het wilt wegwerpen. U moet het afgeven bij een specifiek verzamelpunt voor de recyclage van elektrische en elektronische apparatuur. Door te garanderen dat u dit product op de correcte manier wegwerpt, helpt u potentiële negatieve gevolgen voor het milieu en de menselijke gezondheid, die zouden kunnen worden veroorzaakt door een onrechtmatig wegwerpen van het product, te voorkomen. De recyclage van materialen helpt het behoud van natuurlijke bronnen.

Dit symbool is alleen geldig in de Europese Unie.
Als u dit product wenst weg te gooien, dient u contact op te nemen met uw lokale instanties voor details over de gepaste methode voor afvalverwijdering.

Português

- Eliminação de equipamentos eléctricos e electrónicos usados (aplicável na União Europeia e noutros países europeus com programas próprios de recolha destes equipamentos)

  Este símbolo, colocado no produto ou na respectiva embalagem, indica que o produto não deve ser tratado como lixo doméstico aquando da sua eliminação. Em vez disso, deve ser entregue num ponto de recolha de equipamentos eléctricos e electrónicos para posterior reciclagem. Ao garantir a correcta eliminação deste produto, estará a evitar consequências potencialmente negativas tanto para o ambiente como para a saúde humana. A reciclagem de materiais ajuda a preservar os recursos naturais.

Este símbolo apenas é válido na União Europeia.
Se quiser eliminar este produto, contacte as entidades locais ou o seu fornecedor para ficar a saber qual o método de eliminação correcto.

Polski

- Usuwanie zużytego sprzętu elektrycznego i elektronicznego (Dotyczy krajów Unii Europejskiej i innych krajów europejskich z oddzielnymi programami zbiórki odpadów)

  Obecność tego symbolu na produkcie lub na opakowaniu z produktem oznacza, że tego produktu nie można wyrzucać razem z odpadkami domowymi. Należy go przekazać do punktu zbiórki w celu poddania recyklingowi podzespołów elektrycznych i elektronicznych. Usunięcie tego produktu w prawidłowy sposób, pomoże w zabezpieczeniu przed negatywnym wpływem odpadów na środowisko i zdrowie ludzi, powodowanym przez niewłaściwe usuwanie produktu. Przetwarzanie materiałów pomaga w zachowaniu zasobów naturalnych.

Ten symbol obowiązuje wyłącznie w krajach Unii Europejskiej.
Informacje dotyczące prawidłowej metody usunięcia tego produktu, można uzyskać u władz lokalnych lub u dostawcy.

Svenska

- Avfall av förbrukad elektrisk och elektronisk utrustning (Tillämpbart i hela Europeiska unionen och andra europeiska länder med separata samlingsprogram)

  Den här symbolen som finns på din product eller på dess förpackning påvisar att produkten inte ska behandlas som hushållsavfall när du vill slänga bort den. Istället ska den lämnas över till en lämplig uppsamlingspunkt för återvinning av elektriska och elektroniska utrustningar. Genom att tillförsäkra att den här produkten återvinns på ett riktigt sätt hjälper du till med att förhindra möjliga negative konsekvenser för miljön och mänsklig hälsa. Det kan annars orsakas på grund av olämplig sophantering av den här produkten. Återvinning av material kommer att hjälpa till att bevara naturtillgångar.

Den här symbolen är endast giltig inom den Europeiska unionen.
Om du vill slänga bort den här produkten ska du kontakta lokala myndigheter eller återförsäljar, och fråga efter lämplig avfallsmetod.

Suomi

- Vanhojen sähkö- ja elektroniikkalaitteiden hävittäminen (Soveltuva kaikkialla Euroopan unionin alueella, sekä muissa Euroopan maissa, joilla on erilliset keräysohjelmat)

  Jos tuotteessa tai sen pakkauksessa on tämä symboli, sitä ei pidä hävitettäessä käsitellä tavallisena kotitalousjätteenä, vaan se kuuluu toimittaa sähkö- ja elektroniikkalaitteiden kierrätyspisteeseen. Varmistamalla, että tämä tuote hävitetään asiaankuuluvalla tavalla autat estämään mahdollisia ympäristölle ja ihmisille koituvia negatiivisia seuraamuksia, joita sen vääränlainen hävittäminen voi aiheuttaa. Materiaalien kierrättäminen auttaa säilyttämään luonnonvaroja.

Tämä symboli on voimassa ainoastaan Euroopan unionin alueella.
Jos haluat hävittää tämän tuotteen, ota yhteyttä paikallisiin viranomaisiin tai jälleenmyyjään ja tiedustele asiaankuuluvia hävittämistoimenpiteitä.

Recommended Usage

In order to get the most out of your m57L, use the following recommended guidelines to optimize the display.

Burn-In Versus Temporary Image Retention

Burn-in causes the screen to retain an image essentially forever, with little or no way to correct the problem. Under normal use, an m57L will not experience burn-in, as plasma displays do, nor will it retain images in any way.

Note: Normal use of an m57L is defined as displaying continuously changing video patterns or images. However, m57Ls can experience *temporary* image retention when recommended usage guidelines are not followed.

What is Temporary Image Retention?

Temporary image retention (TIR) can occur when a static image is displayed continuously for extended periods of time (12 hours or longer). An electrical charge differential may build up between the electrodes of the liquid crystal, which causes a negative-color video image (color-inverted and brightness-inverted version of the previous image) to be retained when a new image is displayed. This behavior is true for any LCD device from any LCD manufacturer.

To minimize the impact of TIR, turn the display off six hours per day. To schedule an automatic shut off time, see “Scheduling an Event” on page 79.

Note: Normal use of any LCD device does not cause TIR.

Static Image Applications

Typical static image applications include airports, transit stations, stock markets, banks, and command/control installations, or anywhere a fixed image is displayed continuously for 12 or more hours.

Static Image Display Guidelines

Here are some guidelines to help you avoid TIR:

- Use the m57L to show moving images or still pictures that change regularly.
- Turn the display off when it is not in use. To automatically turn on/off the display, see “Setting the Clock” on page 78.

Caution: Turn off the power for 6 hours per day. For computer sources, use the PC Power Management Properties to power off the monitor when it is not in use.

- Use a screen saver, a moving image, or random images.
- When using high-contrast images, reposition the images frequently.

Normal Use Thermal Guidelines

Normal use of an m57L is defined as operating in the open air to prevent heat buildup, and without direct or indirect heat sources such as adjacent displays, lighting fixtures, heating ducts, or direct sunlight that can cause the display to experience high operating temperatures. At sea level, the operating temperature cannot be above the maximum ambient operating specification of 32°C, nor below the minimum ambient operating specification of 0°C. At 2000 meters, the operating temperature cannot be above the maximum ambient operating specification of 28°C, nor below the minimum ambient operating specification of 0°C. If one of these conditions exist, it is up to the installer to ensure that display placement is changed, thermal shielding is provided and/or additional ventilation is provided to keep the display within its nominal operating parameters.

VESA Mounts, General Description

VESA mounts are used to secure the m57L for display. The m57L can be installed using a variety of VESA mounts available through your Planar reseller. If you do not have a VESA mount and would like to purchase one, contact your Planar reseller.

If you purchased a VESA mount, you should have a received a separate box with mounting supplies and an Installation manual. Follow these instructions carefully.

Keep in mind the following general installation guidelines:

- Screw length is crucial and will vary depending on the type of mount you use. The screw needs to be installed in the unit at least 15mm, no longer than 20mm. Shorter screws will result in insufficient mounting strength and longer screws could puncture parts inside the display.
- Prior to installation, make sure you know where all of the mounting points are located.
- Follow all safety precautions outlined in the VESA Installation manual.
- Verify the parts received with the list shown in the VESA Installation manual.

Installation Checklist

Use this quick checklist to ensure you have performed the installation steps in the correct order.

1. Unpack the display and check the contents (See "Unpacking and Checking Accessories on page 12").

2. For each unit, install the Video Input Module. This is a field-installed option. See “Installing the Video Input Module (VIM)” on page 13.

3. Install power and source cables:
   - See “Connecting Power” on page 19.
   - See “Connecting Source Cables” on page 17.

Unpacking and Checking Accessories

Accessories With Each m57L Display

End-User Guide

The End-User Guide is the manual to be left with the customer when you have completed the installation and configuration. Part of the configuration process includes writing down the names of the configurations you create. See the note on page 95.

Note: The manual you are reading is the Installation & Configuration Guide.

Remote Control

The batteries are already installed.

Power Cord

For use in North America.

VGA Cable

15-pin cable for Analog computer pictures. Although this is called a VGA cable, it carries anything up to UXGA.

Optional Accessories

VIM, Video Input Module inputs for one or two composite and S-Video sources. This can ship separately and is installed on site.

Customer-Supplied Accessories

- RJ45 to 9-pin adapter
- RJ45 cable, computer network type
- Component video cables
- S-video cables
- DVI cables
- SDI cables

Installing the Video Input Module (VIM)

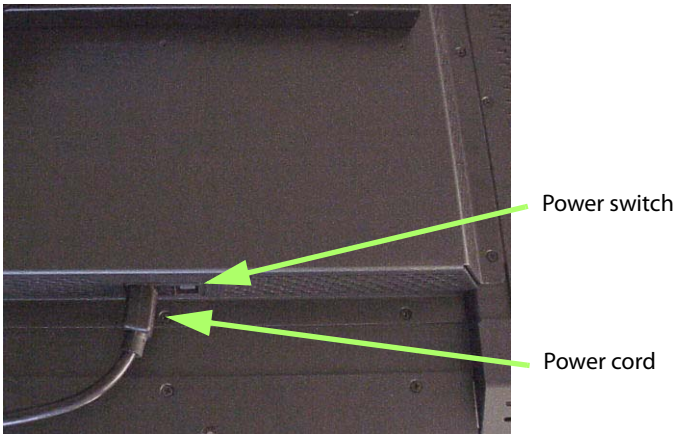
If you receive the optional Video Input Module (VIM) separately, use the following instructions to install it.

Your VIM shipment should include the following items:

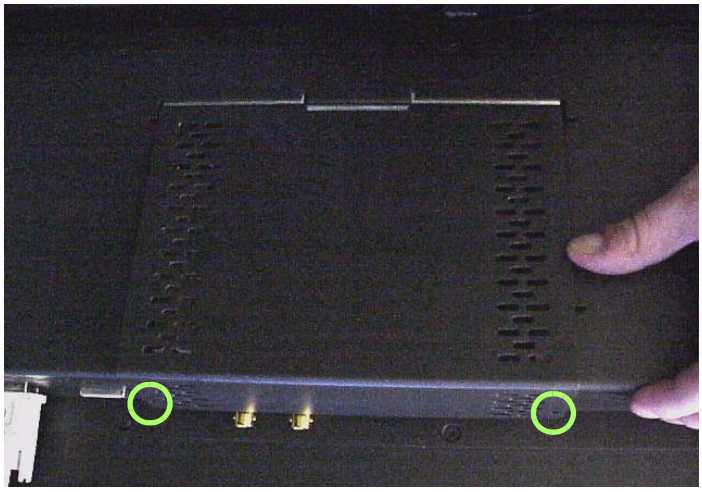
- VIM board
- New VIM cover
- Mounting screws
- Washers/nuts
- Ground strap

1 Turn off the AC power and unplug all cables.

WARNING! Always turn off power and remove the power cord when adding or removing an electronic part.



2 Remove the screws that secure the old VIM cover. Place the screws aside.



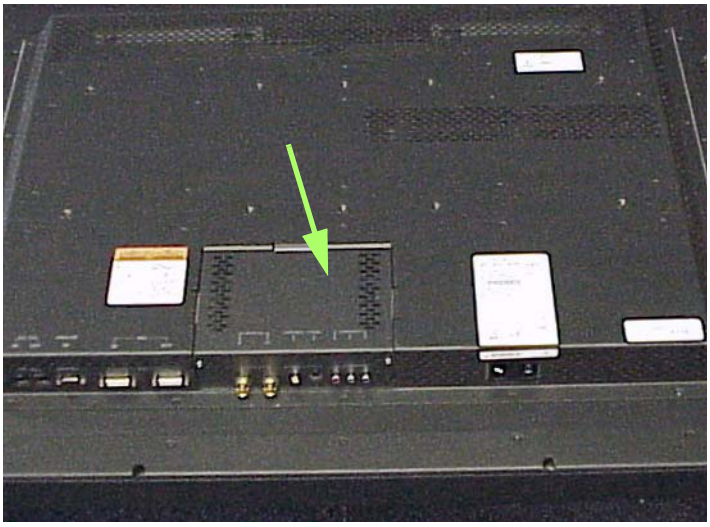
3 Remove the old VIM cover.

4 Attach the ground strap to your wrist and the chassis.

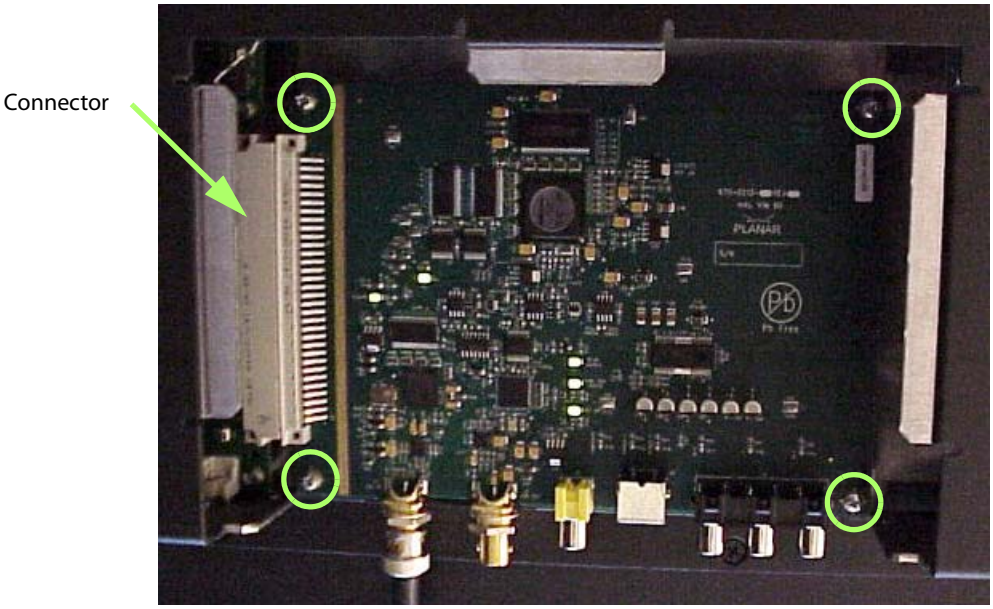
WARNING! Failure to properly use a grounding strap can destroy sensitive electronic components in the VIM board.

5 Remove the VIM board from its shipping pouch and anti-static bag.

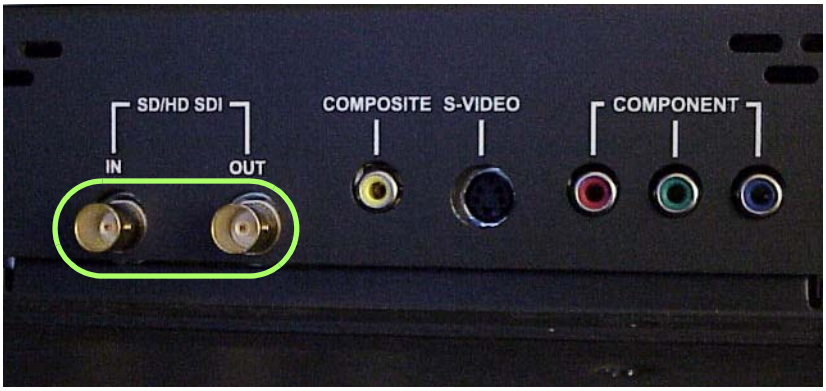
6 Install the VIM board in its place, pressing the VIM board connector into the Control board connector; it is a snug fit.



7 Install the four screws that secure the VIM board.



8 Slide the new VIM board cover in place, making sure the connectors are aligned over the holes in the cover.



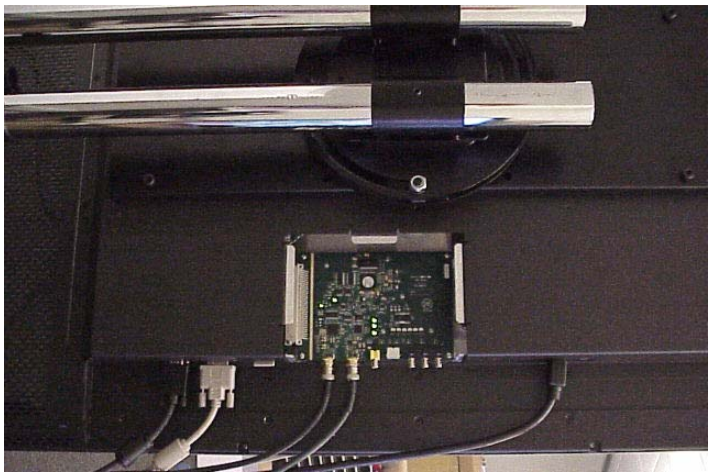
9 Secure the washers and nuts on the SD/HD SDI connectors.

10 Install the screws that secure the new VIM cover.

11 Reconnect all cables, including the power cord. It is now safe to turn on the AC power.

Connecting Source Cables

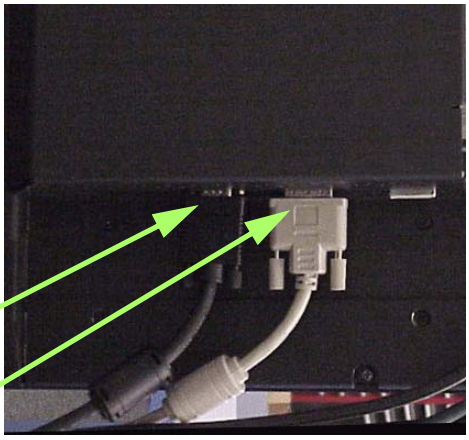
All cabling for the m57L must be run through the rear. You may run cables as the rows go up or when the installation is complete.



Connecting Picture Sources

The three main types of inputs are:

- Analog computer (from UXGA down to VGA)
- Digital computer
- Video (optional with VIM)
  - S-Video, composite or component video in NTSC or PAL
  - Composite SECAM
  - Component VGA 1080p
  - SD/HD SDI



Video Inputs

The m57L has these connectors for picture sources:

DVI, or Digital Video Interface, is a standard for digitally connecting computers to their monitors or for interconnecting any displays.

The m57L converts the Analog inputs to the DVI standard and makes this available at the Digital Out connector. This means you can bring in a picture source—UXGA, SXGA, VGA 1080p - to the first display and connect the rest of the displays in the loop with DVI. The **advantages** of DVI are:

- DVI is less subject to picture degradation than analog methods of loop-through. (However, even with DVI, loop-through is not infinite.)
- DVI inputs require much less setup and adjustment. You adjust the picture in the first unit only, the unit with the Analog input. Setup time is reduced.

Depending on which input is selected, the Digital Out connector will show the picture from the Analog input or the Digital input.

Using RGB Sources

RGB sources can have composite sync or sync on green. These sources can connect to the Analog connector, but they are handled differently in the m57L. RGB (or RGBS) signals can have one of the following:

- Composite sync
- Separate H & V sync
- Sync on green (SOG)

RGB pictures go into the Analog input. If the RGB comes to the first display on three or four BNC connectors, you will need to provide an adapter to 15-pin.

Using Composite and S-Video Sources

Video sources are either C-Video (composite video) or S-Video. Each connector has a separate output. Both C-Video and S-Video accept NTSC and PAL. C-Video also accepts SECAM pictures.

Video Formats Supported in Composite and S-Video Connectors

Name	Active lines	Vertical rate	Horizontal rate
NTSC	525	60 Hz (59.94)	15.734 kHz
PAL	625	50 Hz	15.25 kHz
SECAM	625	50 Hz	15.25 kHz

SD/HD SDI

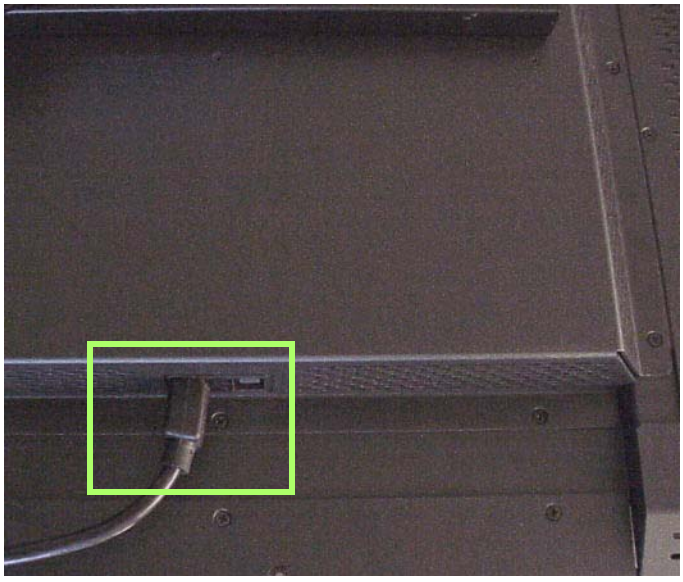
SD/HD SDI video shows high definition images for wide screen displays.

Connecting Power

The display may draw up to 6.0A at 115V or 3.0A at 230V. For countries outside of North America, it is the responsibility of the installer to provide the power supply cord certified for use in the destination country.

Connect a power cable to the power supply and to an AC source. The power supply is auto-ranging, so it works with any source from 100 to 240 VAC, 50 to 60 Hz.

The AC Master switch, next to the power receptacle, contains two 8A Slo-Blo fuses. If there is an overload, the fuses will blow, disconnecting power from the unit. Replace the fuses with the same type and rating as the blown fuses. The power switch and power receptacle are located in the rear of the display.



Power receptacle and power switch location

About UPS Supplies

Some installations use a UPS—Uninterruptible Power Supply. These will work on the m57L *if* the output of the UPS is a sine wave.

Connecting RS232 Communication

RS232 control is not necessary for operation, but it is a convenient way to control displays from a distance. If your installation will not use RS232 control, skip this section.

RS232 control has one big advantage: you can control the display from a computer at a considerable distance from the wall.

Almost everything you can do with the remote, you can do with RS232 commands. Plus, you can send inquiries to the displays and find out the current settings and values.

RS232 connections are made with cables like those used for computer networks. These cables have eight (8) conductors and have RJ-45 connectors on each end.

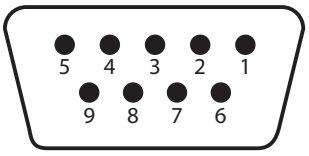
Note: It is important that the RJ-45 cable has "straight through" connections. To see if your cable is correct, hold the two connectors side by side with the ends pointing in the same direction. Look at the sides of the connectors that do not have the locking tab. If the colors of the wires inside the connectors are the same left to right for both connectors, this is the correct cable. If the colors are mirror reflections of each other, it is the wrong type.

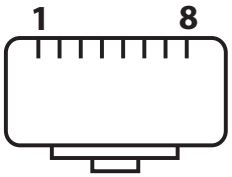
You need an adapter to go from the computer's 9-pin serial output connector to an RJ-45 connector. Adapters of this type are readily available at computer and electronic supply stores. You will only need one adapter. The adapter is not pre-wired. You will make three connections inside the adapter, as described below.

Wiring the adapter

To go from 9-pin D-sub serial connector on the back of the computer to an RJ45 connector, use a standard RJ45-to-9-pin adapter. Wire it internally as shown. The wiring shown for this adapter is correct for *straight-through* cables. Straight-through cables are wired 1-to-1, 2-to-2, etc.

Yellow wire	pin 3
Black wire	pin 2
Green wire	pin 5
RJ45	9-pin
6	3
5	5
3	2





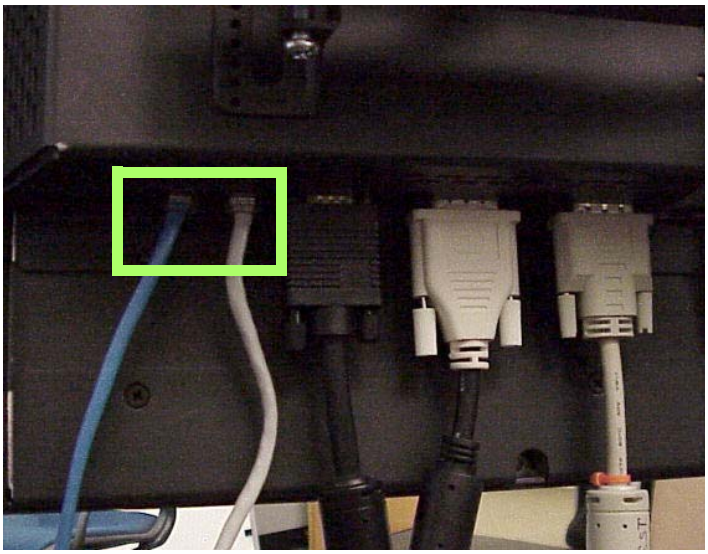
RJ45 looking into the socket

Connecting RS232 Cables

1 Connect the 9-pin adapter to the serial output connector of the controlling computer. (This computer does not have to be the same one as the computer used as a picture source.) The serial output is sometimes called the Comm Port, and sometimes there is more than one.

Note: If the serial output is a 25-pin connector, use a 25-to-9-pin adapter, then the 9-pin to RJ-45 adapter.

For more information about configuring RS232 communications, see "Serial Port Settings and Diagnostics" on page 87.



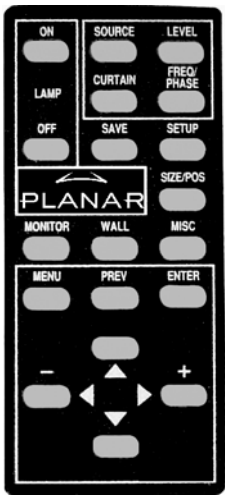
RS232 port connection is on the Control board

Configuring an m57L

After you select the picture source, most of the remaining setup is automatic, although you can override the automatic settings and adjust them manually.

Using the Remote

The remote control operates with IR (infra-red) signals going to the IR receiver (located in the lower right corner of the screen for landscape and in the lower left corner for portrait).



(Later, to prevent accidental adjustment of the display, you can disable the remote control function using an RS232 command.)

If the Remote Doesn't Work

- The batteries in the remote are dead or installed wrong.
- The remote was not aimed at the screen.
- Something is blocking the IR receiver in the display.
- IR remote action was disabled by an RS232 command.

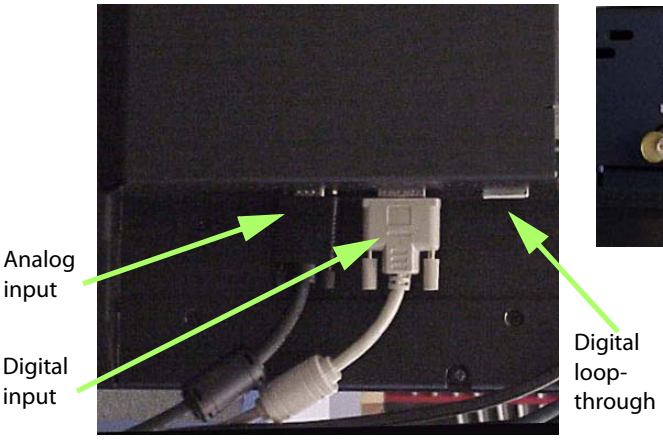
Note: The remote control has a large spread of its IR radiation. It is difficult from a distance to control only one display in an array; step closer.

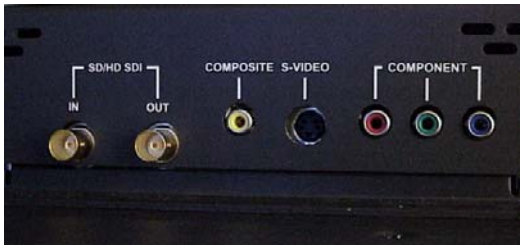
Selecting the Source

Selecting the source means choosing the connector where the picture is coming in. You'll chose from the connectors shown in the table below, depending on whether you have installed a VIM.

Source Connectors

Without VIM	With VIM
Analog	Analog
Digital	Digital
	Component
	S-Video
	Composite
	SD/HD SDI

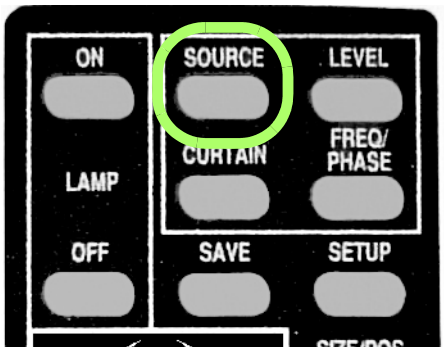




With VIM

Connect the power cord and turn on the power switch. If the power was already on, and the backlight is off, press the ON button on the remote.

1 Aim the remote control at the screen and press SOURCE.



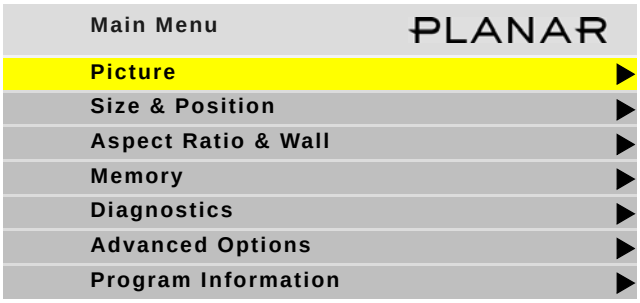
a The display looks at each of the connectors and stops on the first one that is receiving a valid picture.

b If this is successful (it may take 10 seconds) *stop here*.

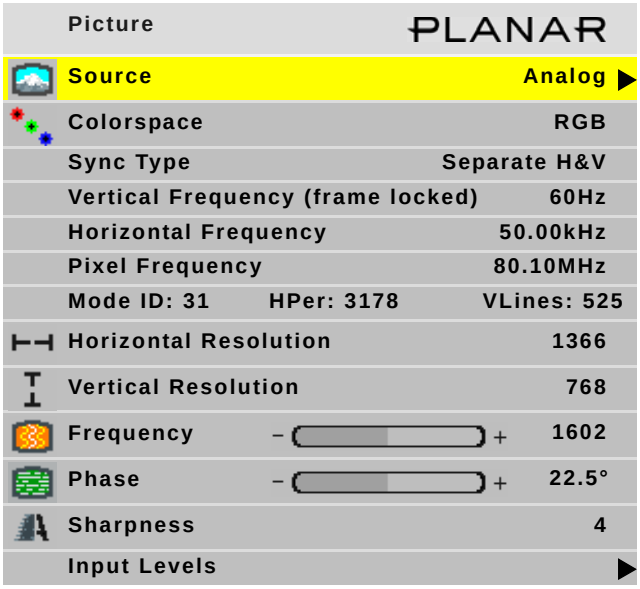
c If you have several sources connected, press SOURCE again to go to the next one with a picture.

d If you get no picture or have other trouble, read the rest of these steps.

2 Press MENU. The MAIN MENU displays on the screen.

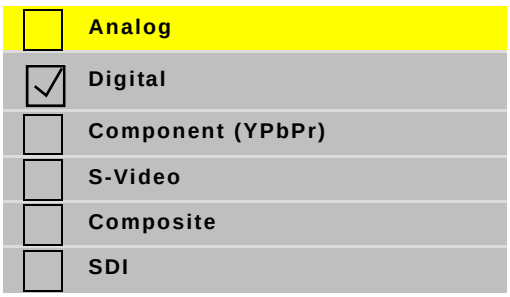


3 Select PICTURE using the up/down arrows on the remote and press ENTER. This opens the PICTURE menu.



Tip: The FREQ/PHASE button opens the PICTURE menu directly.

4 Select SOURCE and press ENTER. This opens the SOURCE menu.



Note: If the display does not have a VIM (Video Input Module) installed, only the first two items will appear in this menu.

5 With the arrow keys, select the input connector you want and press ENTER. Within a second or two the display analyzes the picture, adjusts to it, and displays it. If you see no picture:

- **a** If you see an “out of range” message on the display, the input from the source cannot be displayed. Try changing what the source is outputting.
- **b** If you see a “source absent” message on the display, the data from the source is not reaching the display. Try disconnecting and reconnecting the cables between the source and the display, and make sure the source is powered on. If the source is a laptop, ensure that the VGA output on the rear of the source is enabled.
- **c** If no message is displayed, maybe the source has timed out and is displaying a blank screen.

For additional information about source selection, see "Preferred Source Detection" on page 72.

Setting Up the Picture in an m57L

The source picture—from computer, video, DVD—is not always perfect in its size or resolution; it does not always conform exactly to a standard. The display can compensate for this.

You'll find it easier to configure your displays when you perform the steps in the following order:

- Select the Source (Picture) (See "Selecting the Picture" on page 31)
- Adjust the Input Levels (See "Adjusting Input Levels" on page 35)
- Adjust Frequency and Phase (See "Adjusting Frequency and Phase" on page 41)
- Select the Scale Mode (See "Scale Mode Settings" on page 45)
- Adjust the Sharpness (See "Sharpness Settings" on page 51)
- Check the Image Position (See "Adjusting Position" on page 53)
- Adjust Scaling and Cropping (See "Zoom and Position" on page 55)
- Set up Tiling for the image on multiple displays (See "Tiling a Display" on page 59)
- Color Balance the displays (See "Adjusting Color Balance" on page 63)

The following sections describe each of the procedures listed above.

Selecting the Picture

Selecting the source (picture) manually is usually quicker than using the SOURCE button. Selecting the picture is really selecting the input connector.

Computer Sources

Use the HD-15 connector for standard Analog inputs, the type used for years with computers. For Digital inputs, use the DVI connector. Either of these accepts pictures of the following common standards as well as many, many others:

Type	Resolution
VGA	640 x 480
SVGA	800 x 600
XGA	1024 x 768
SXGA	1280 x 1024
WXGA	1360 x 768, 1366 x 768
UXGA	1600 x 1200
HD1920	1920 x 1080
VESA	640 x 400

Component Video Sources

Component video sources are assumed to be YPbPr and the colorspace is set accordingly.

DVD and Component Video Sources

DVD players have composite video and S-Video outputs, and sometimes have component video outputs from three RCA connectors.

Note: HDCP (High-Definition Copy Protection) is not supported.

Composite Video and S-Video

These two inputs accept NTSC and PAL. The composite connector also accepts SECAM video.

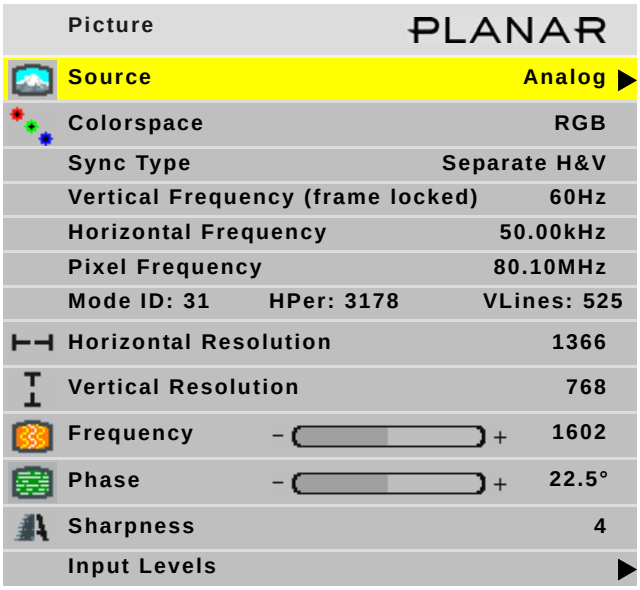
SD/HD SDI

This input accepts NTSC, PAL, 720p and 1080i.

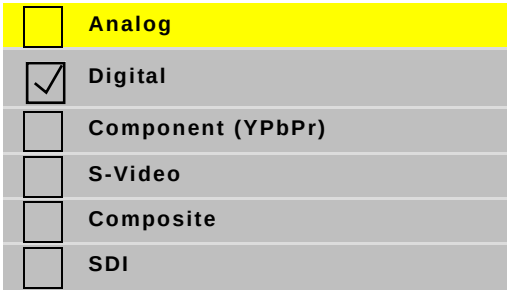
To Manually Select the Source

1. After the display is on, press FREQ/PHASE on the remote. This opens the PICTURE menu.

2. Using the up/down arrows, select the SOURCE line and press ENTER.

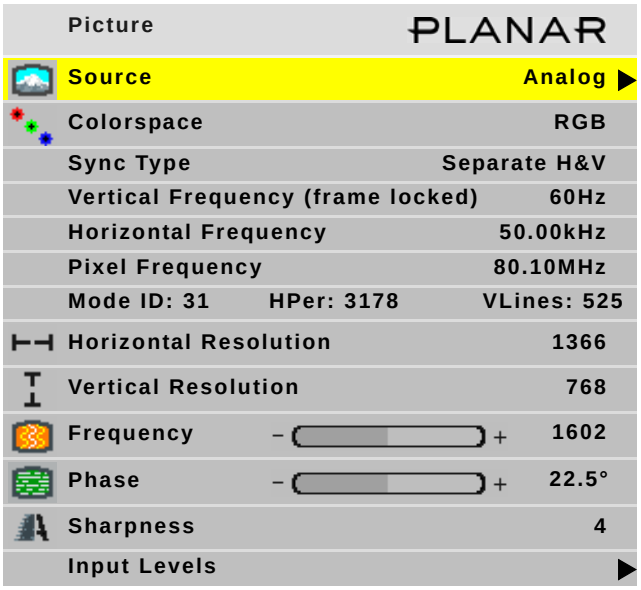


3. The SOURCE popup menu displays to the right of the PICTURE menu.

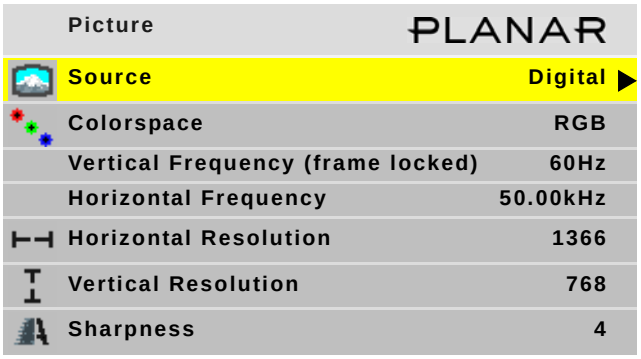


4. Use the up/down arrows on the remote to select the type of source, and press ENTER. The next pictures show examples of the how the PICTURE menu appears when different sources are selected. When you are finished, press MENU.

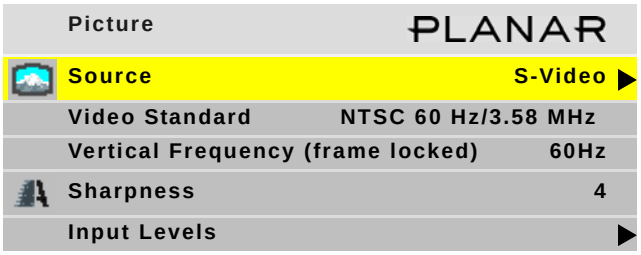
- **Analog**



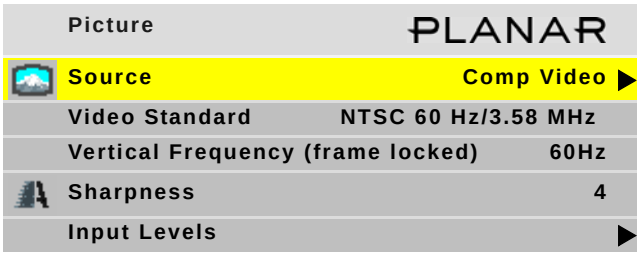
- **Digital**



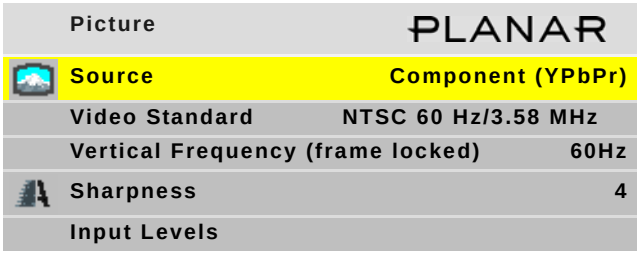
- **S-Video**



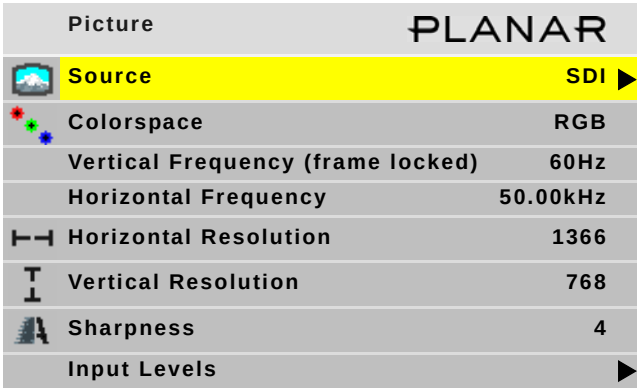
- **Composite**



- **Component (YPbPr)**



- **SDI**



Adjusting Input Levels

For Analog computer sources, adjusting to the computer's picture means learning what that computer means by black and white.

Black is supposed to be a voltage of zero coming from the computer's video card, but it almost never is. White is supposed to be a voltage of 0.7 volts, but it usually isn't either.

The Input Level adjustment process asks you to provide a picture from the computer that is black, then one that is pure white. With these, you can quickly and automatically make the display "learn" what *this* computer means by black and white.

The result? Good pictures, using all the dynamic range of color coming from the computer.

Note: For Input Levels, you must use black and white coming from the computer you will use for the program. Don't make this adjustment with your work laptop and then switch to another computer for the display's program of pictures.

Adjusting Levels for Analog Sources

This section applies to Analog RGB (computer) pictures only. The Levels are best adjusted semi-automatically.

Why Adjust Levels?

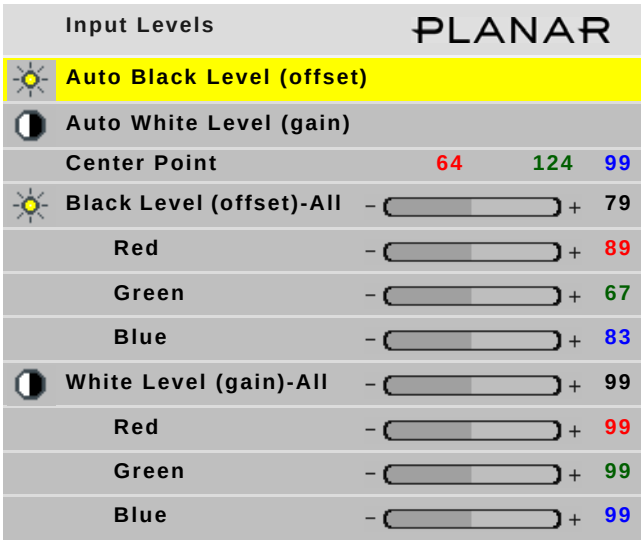
For Analog RGB pictures the levels for black and white vary from one computer to another, or from one video processor to another. They even vary between video outputs from a multiple-output video card in a computer.

Your pictures will not look their best on the display until you adjust for these differences. This is *not* about adjusting color or contrast. It's about telling the display what the computer or processor means by black and by white.

Semi-Automatic Level Adjustment

1. From the computer source, display an all-black picture. *This must come from the computer source that will be used for the program.* Nor can you use the display's black test pattern. We suggest you display a black screen using Windows Paint program.

2 To access the INPUT LEVELS menu, press LEVEL on the remote.



3 In the INPUT LEVELS menu, select AUTO BLACK LEVEL and press ENTER. This menu line says "Working…" until the process is complete.

Note: When doing Auto Black and Auto White with an interlaced Analog input, the color of the picture will change while it is working, then it will change back to normal.

4 From the computer source, display an all-white picture.

5 In the INPUT LEVELS menu select AUTO WHITE LEVEL and press ENTER. Wait for "Working…" to disappear.

The display is now adjusted to the black and white levels of *this* computer using *this* video card. If you change computers or video output cards in the computer, you must do this again.

Note: Black Level *must* be done before White Level.

6 If you have more than one computer or other Analog RGB source, as might come from a switcher, repeat the previous steps for each source and save the configuration to a memory slot.

Manual Level Adjustment

1 Display an all-black picture from the source computer.

2 Press LEVEL on the remote.

3 In the INPUT LEVELS menu, select BLACK LEVEL and adjust it up and down with the - or + keys to make the three CENTER POINT values go to zero. If they do not all touch zero at the same time, use the individual colors under BLACK LEVEL to adjust them.

Note: Do not go beyond the point where the minimum just goes to zero. The idea is to just touch the zero level.

4 Display an all-white picture from the source computer.

5 Adjust WHITE LEVEL (GAIN) until the IMAGE MAXIMUMS just go to 255. Again, do not push it up after the maximum is 255. Just touch the 255 point. You must adjust Brightness first, Contrast second.

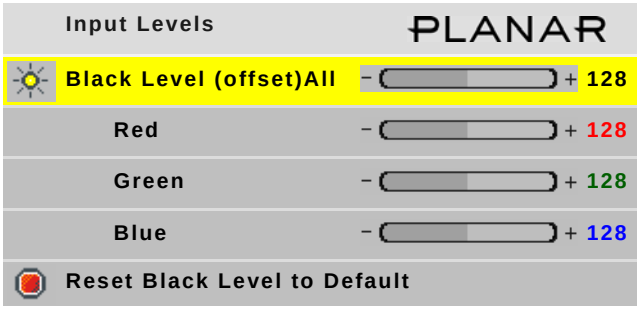
If the three colors are not all at 255 (or 254), adjust them separately.

Adjusting Levels for Digital Sources

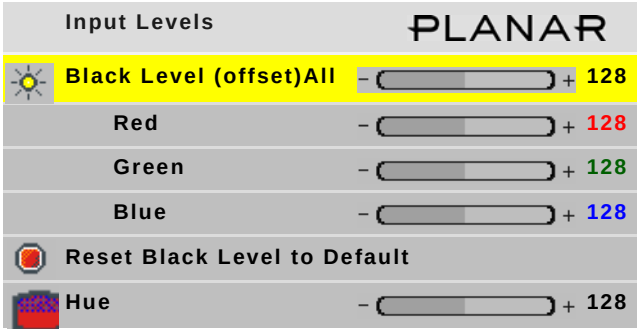
Caution: These controls are advanced level controls and should not be adjusted unless you have been instructed by the factory or are familiar with black level adjustments.

Digital computer sources do not normally need adjustment, but the controls are there if you need them. They are used to correct the digital blacks that come from video cards that have incorrect levels.

To access the INPUT LEVELS menu, press LEVEL on the remote. (The INPUT LEVELS menu looks different for different colorspaces. The INPUT LEVELS menu for Digital RGB sources is shown below).



The INPUT LEVELS menu for Digital YPbPr sources is shown below.

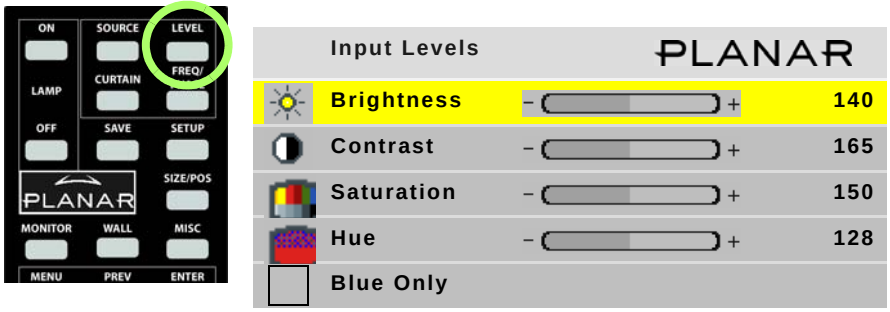


Adjusting Levels for Video Sources

Video sources are adjusted best if a color bar test pattern is available from the video source: the DVD or VCR player. If you do not have access to a color bar test pattern, you will have to adjust the picture by eye from the video source using the INPUT LEVELS menu.

Adjusting the Picture

1. Select a video source in the PICTURE menu.
2. To access the INPUT LEVELS menu, press LEVEL on the remote.



Note: These controls are also used for Analog sources when you selected component video.

Now you have two choices:

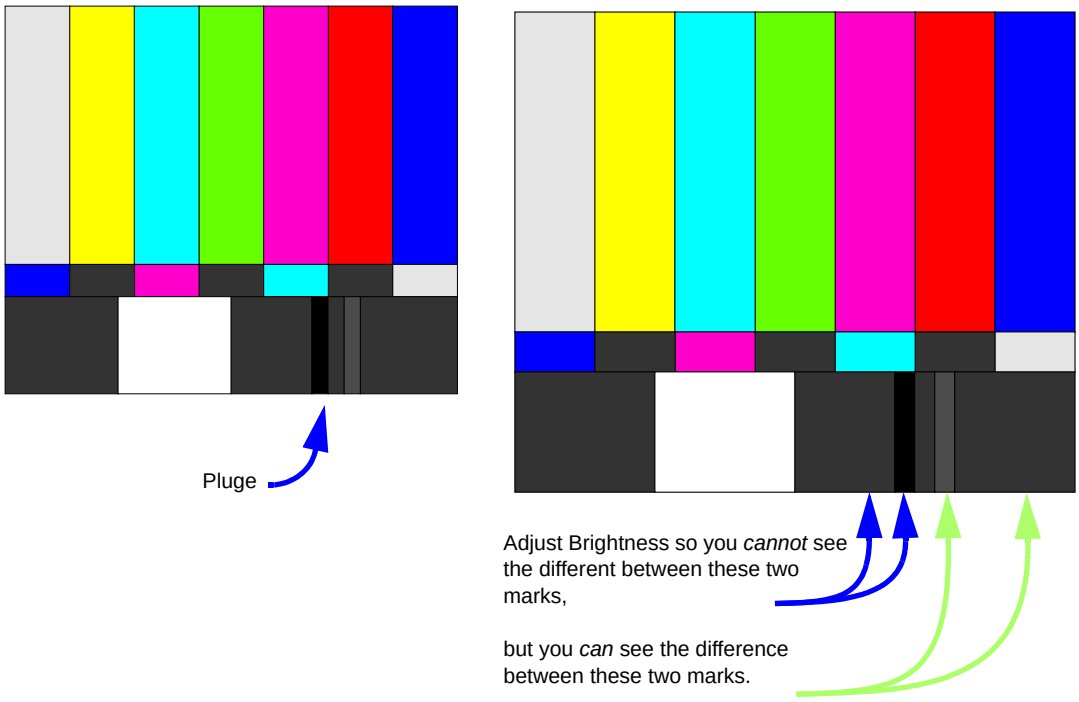
- Adjust using any picture from the video source.
- Adjust using a standard SMPTE color bar pattern from the source.

Adjusting With Color Bars

1. If possible, use a SMPTE color bar pattern from the video source you will use for the program material.
2. In the INPUT LEVELS menu, check BLUE ONLY. You should see only the alternate color bars, all of them blue.
3. Adjust SATURATION to make the outer two color bars match. Match them in brightness; they will already match in color.
4. Adjust HUE to make the inner two color bars match.
5. Uncheck BLUE ONLY.

Note: When a video source is selected, Auto Setup Options is not available. Adjustments must be made manually.

6 If the color bar pattern has a pluge, you can use it to adjust Brightness.



Adjusting Frequency and Phase

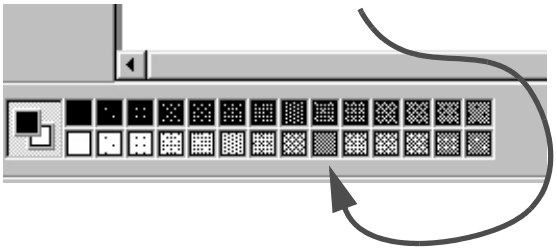
The automatic adjustment for Frequency and Phase is usually good enough. (See “Adjusting Levels for Analog Sources” on page 35.) If the image shows vertical banding, adjust the Frequency. If the image has noticeable horizontal streaks moving through the image, adjust the Phase. If automatic adjustment is not good enough, this is how to do it manually.

Frequency and Phase is adjusted *only* for computer sources and *must* be made using the computer that has, or will have, program content.

Making a Checkerboard Pattern With Paint

You will need to display a checkerboard pattern from the source computer. You can make one with Windows Paint program.

1. Choose Image > Attributes to open a dialog box.
2. In the Units section, choose pixels. In the Color section, choose Black and White.
3. Set the Width and Height in pixels to match the *native* resolution of the Planar display.
4. When you click OK, the program gives you a warning about losing color. Click Yes.
5. At the bottom of the window, click on the checkerboard pattern. This is the 9th box from the left on the bottom row.



6. Choose the paint bucket icon and click in the picture area. It will fill with a checkerboard pattern.

7. Save this picture as a bit map (.BMP) file to the hard drive so you can use it again.

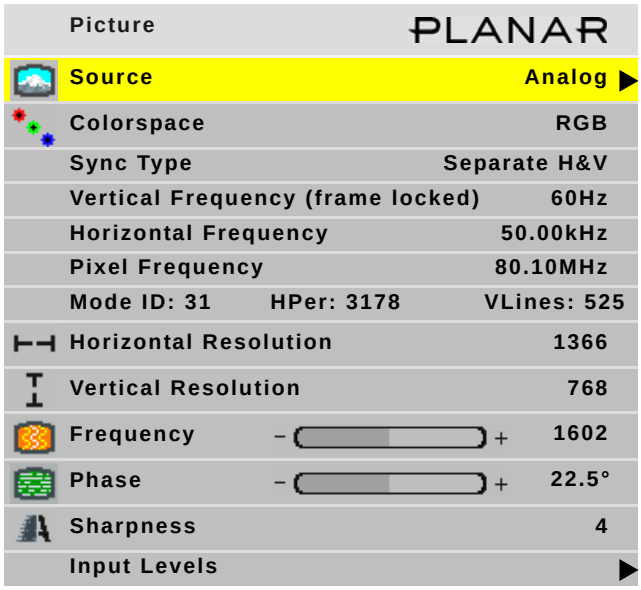
Adjusting Frequency Manually

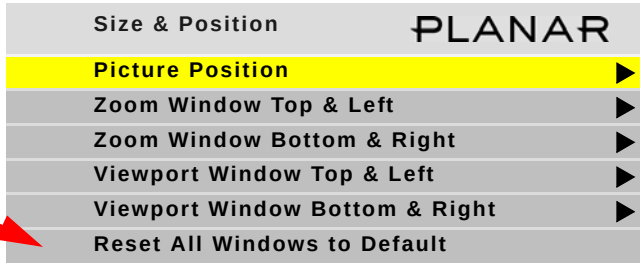
1. Press FREQ/PHASE on the remote. This opens the PICTURE menu. See that the Source is ANALOG.
2. Display a checkerboard pattern from the computer.
3. Select FREQUENCY in the menu and use the - or + keys to change the frequency. Don't worry about the number that appears in the menu. Look at the screen. As the frequency is moved away from the ideal setting, more and more vertical bands will appear in the picture. Adjust Frequency so there are no vertical bands.

Note: Be sure there are no zoom adjustments in effect when adjusting frequency. If there are, you will not be able to get rid of all the vertical bands.

Adjusting Phase Manually

1. With the checkerboard pattern still on the screen, select PHASE in the menu.
2. Adjust the phase with the - or + keys on the remote. As the phase changes, at some points you will notice more horizontal streaking. Find a point that has no streaking or minimal streaking. There is usually a fairly broad range of no streaking, so settle for the point in the middle of this range.





If you made zoom adjustments, select RESET ALL WINDOWS TO DEFAULT and press ENTER before adjusting Frequency.

Aspect Ratio Settings

The aspect ratio of any picture is its width divided by its height. W / H = Aspect Ratio

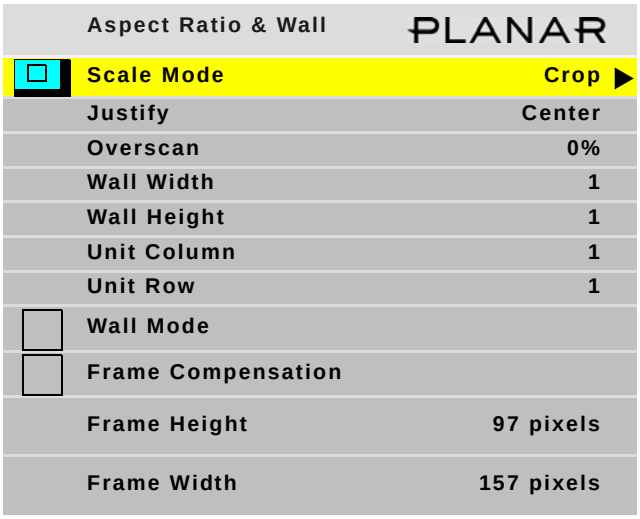
The native aspect ratio of the m57L is 1.77, which is sometimes referred to as 16:9. Its native resolution is HD (1920 x 1080).

Many pictures do not have this aspect ratio. Standard television, VGA, SVGA, and XGA signals are 1.33. Movies from DVDs vary depending on the original film format, are often 1.85. The larger the number, the "wider" the picture seems.

When the incoming picture is a different aspect ratio from the screen, the display gives you six choices (see below) to make it fit.

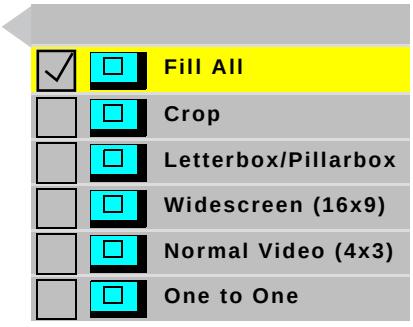
Scale Mode Settings

1 To select the Scale Mode, press WALL on the remote to display the ASPECT RATIO & WALL menu.



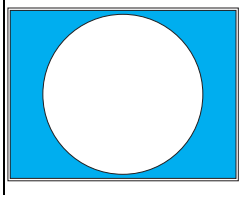
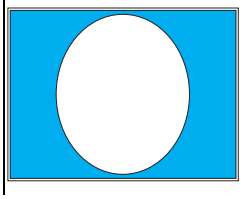
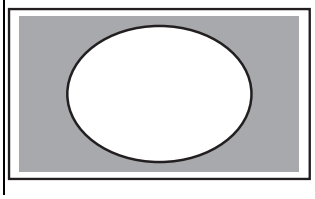
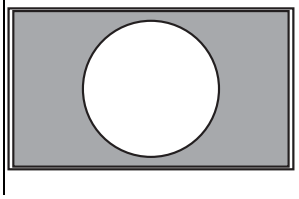
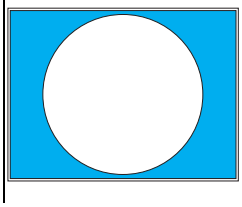
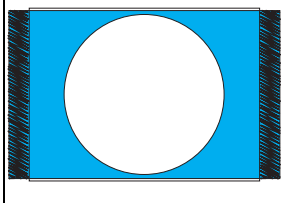
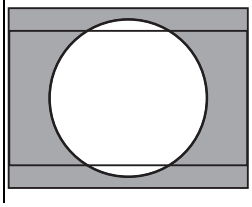
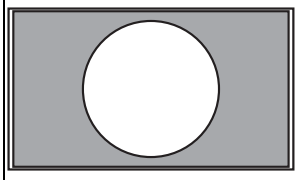
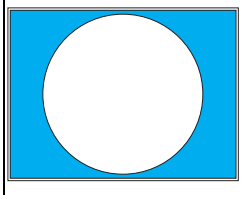
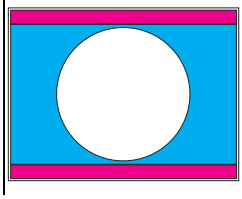
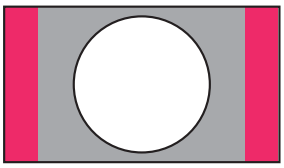
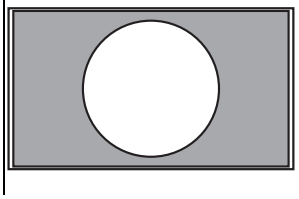
2 With SCALE MODE highlighted, press ENTER.

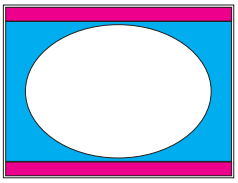
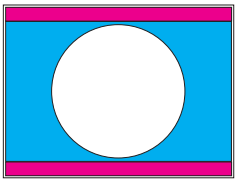
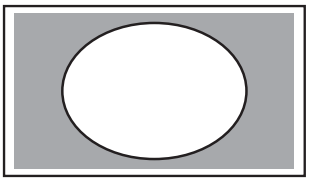
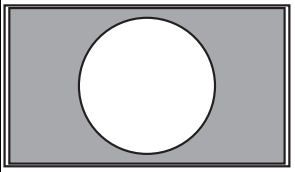
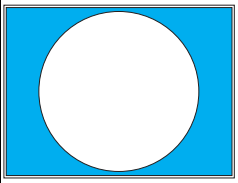
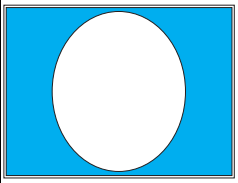
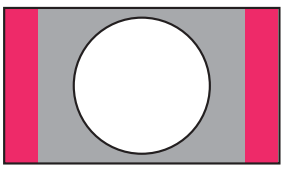
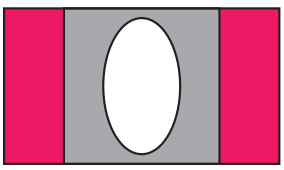
The SCALE MODE submenu displays.

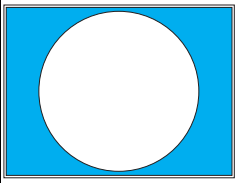
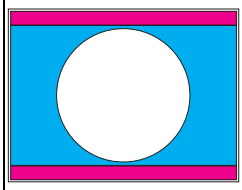
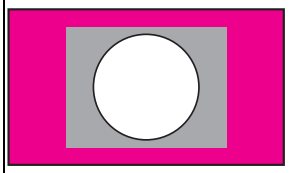
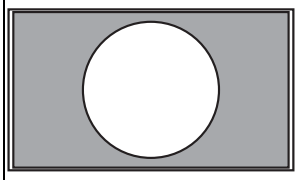


The SCALE MODES are "radio" buttons; you can choose only one at a time.

Note: The SCALE MODE menu icons change to indicate the effect each mode will have on the picture based on the Justify and Scale Mode settings, and the source resolution.

Scale Mode	Affect on Input Type on 4X3 Display		Affect on Input Type on 16X9 Display	
	Standard Video or VGA/SVGA/XGA	1080i or WXGA Computer Source	Standard Video, VGA/SVGA/XGA, or 4X3	1080i or WXGA Computer or 16X9 Source
Fill All	No distortion 	Compresses width to fit 	Stretches width of image 	Displays at native resolution without distortion 
Fill All makes the picture fit top-to-bottom and left-to-right, regardless of how this stretches or compresses the picture. Fill All distorts the picture, when the aspect ratio of the incoming picture is not the same as the display.				
Crop	No distortion 	Crops width of image; fits height of image without distortion 	Crops top and bottom of image; fits width of image without distortion 	Displays at native resolution without distortion 
Crop expands non-native aspect ratio pictures until the *second* edges touch the border and lets the other edges of the picture fall outside the display and get cropped.				
Letterbox /Pillarbox	No distortion 	Fits width of image without distortion; fills height with border 	Fits height of image without distortion; fills width with border 	Displays at native resolution without distortion 
Letterbox/Pillarbox expands the picture until the first edges (top-bottom or left-right) touch the border of the display, and then fills in the other sides with a solid color.				

Scale Mode	Affect on Input Type on 4X3 Display		Affect on Input Type on 16X9 Display	
	Standard Video or VGA/SVGA/XGA	1080i or WXGA Computer Source	Standard Video, VGA/SVGA/XGA, or 4X3	1080i or WXGA Computer or 16X9 Source
Wide-screen	Stretches width of image; fills Top and Bottom with border 	Fits width of image without distortion; fills height with border 	Stretches image to fill width without affecting height 	Displays at native resolution without distortion 
Widescreen (16x9) forces the aspect ratio to 16 x 9 (1.77), the standard for many DVD movies. This will distort any picture other than 16X9 aspect ratio pictures. Widescreen can be used to display anamorphic DVDs on an array.				
Normal Video	No distortion 	Compresses width to fit, no border 	Fits height and width of image without distortion; fills width with border 	Fits height of image, compresses width and fills with border 
Normal Video (4x3) forces a 4 x 3 (1.33) aspect ratio, the ratio of standard television. Normal Video is used to display YPbPr video on the Analog input port. Its resolution is 720x640, which is not 4x3, but it should be displayed as 4x3 (the pixels aren't square).				

Scale Mode	Affect on Input Type on 4X3 Display		Affect on Input Type on 16X9 Display	
	Standard Video or VGA/SVGA/XGA	1080i or WXGA Computer Source	Standard Video, VGA/SVGA/XGA, or 4X3	1080i or WXGA Computer or 16X9 Source
One to One	No distortion  Example above represents an XGA input on an XGA resolution display (1024 x 768)	Fits width of image without distortion; fills height with border  Example above represents a 1080i (1920 X 1080) resolution	Displays image without distortion at actual size with border on all sides  Example above represents a VGA input	Displays at native resolution without distortion  Example above is for 1366 x 768 input on 1366 x 768 native resolution or 1920 x 1080 input on 1920 x 1080 native resolution

One to One maintains the original size and aspect ratio of the picture. This may leave blank areas on all four sides. For instance, a VGA picture (640 x 480) on a 16X9 display will occupy only a small area in the center of the screen. For UXGA sources on a 16X9 display, this will crop the picture top, bottom, and sides. The primary use of One to One is to display the image without scaling artifacts and with minor cropping.

Note: The One to One Scale Mode will produce different cropping results and the image size will be different for each input resolution.

Justify Settings

Justify determines how the picture will be placed in the Wall. For a single display, Justify determines placement on the screen.

Top/Left

Positions the image starting with the top, leftmost display, then across and down. If the image is not large enough to fill all the displays, they are left blank.

Center

Positions the image starting with the center of the image in the center of the Wall spreading out equally to all displays. If the image is not large enough to fill all displays, they are left blank.

Bottom/Right

Positions the image starting with the bottom, rightmost display, then across and up. If the image is not large enough to fill all the displays, they are left blank.

Overscan

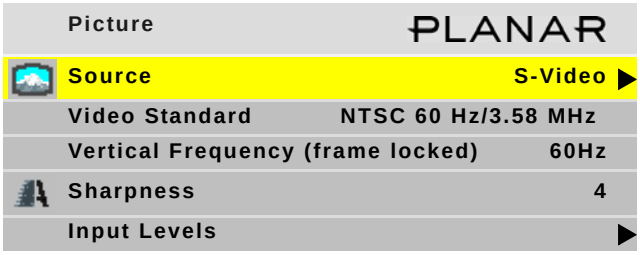
This is used to hide blank areas and stray lines in the edges of an image. The lower the overscan setting, the more of the optical image that is seen. Standard CRT televisions have an overscan of about 5%. Overscan defaults to 3% for video images.

Adjusting Sharpness

After you set the Scale Mode to the one you will use for the program, select the Sharpness level in the PICTURE menu to reduce scaling artifacts. If you are not scaling your image, you may skip this section.

Sharpness Settings

The Sharpness setting is in the PICTURE menu (press FREQ/PHASE on the remote).



Sharpness settings determine how crisp the image should be. There are sixteen levels of sharpness, where 0 is the softest and 15 is the sharpest. 7 is the default.

Make any adjustments to sharpness with the picture scaled, that is, with the Scale Mode set the way you will use it. Use Sharpness to reduce artifacts of scaling.

Note: The Sharpness adjustments are in effect only when the image is scaled.

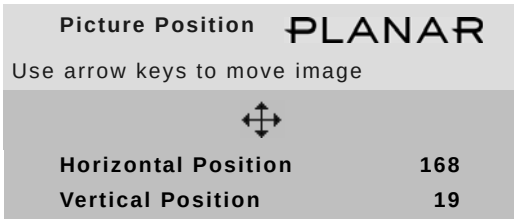
For instructions on how to set scale mode, see "Scale Mode Settings" on page 45.

Adjusting Position

Position moves the picture on the screen but does not move the menus.

Picture Position

Press the SIZE/POS button once on the remote to open the PICTURE POSITION menu. The four arrow keys move the picture on the screen.



The numbers for Horizontal and Vertical Position refer to the number of pixels from sync to the first displayed pixel. These numbers get smaller as the picture moves up and to the left.

HORIZONTAL POSITION

This number shows the number of pixels from the beginning of H sync to the first active pixel. Because there are many black pixels after H sync, this number will not be zero when the picture is at the left border of the screen.

VERTICAL POSITION

This number is the number of lines from V sync to the first active line, so it will not be zero when the picture is at the top of the screen.

Zoom and Position

Zoom fits the edges of a large picture—one that covers many displays' screens—from side-to-side and top to bottom.

To access the Zoom menus, press SIZE/POS twice on the remote to open the ZOOM TOP & LEFT menu, and press SIZE/POS a third time to open the ZOOM BOTTOM & RIGHT menu.

You may zoom the sides up to +100 pixels *larger* in each direction. You may also zoom the sides up to –100 pixels *smaller*, but only if that side is not the edge of the overall picture. An example may help make this point more clearly.

This is the original picture from the source.

The picture is cropped and there is some extra picture to the right, off the screens. All the displays can be zoomed out (+) to make the picture larger in each direction.

Unit X cannot be zoomed *in* (–) at the bottom or the left side, because there is no more picture to pull onto the screen.

Unit Y cannot be zoomed in at the bottom, but it *can* be zoomed in from the right (–) because there is more picture out there. Of course, the center display—Column 2, Row 2—can be zoomed in any direction.

Zoom Menu Entries

Image Resolution

Shows the resolution of the source picture.

This Unit

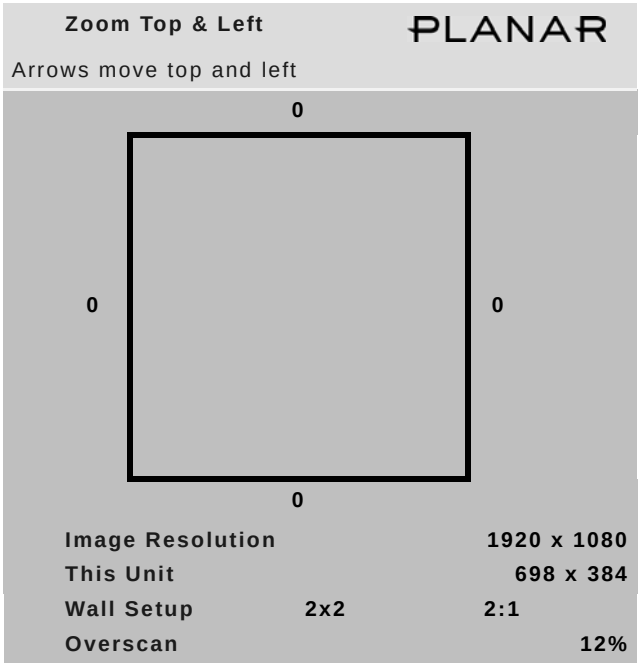
Shows the number of pixels this display is using of all the incoming pixels.

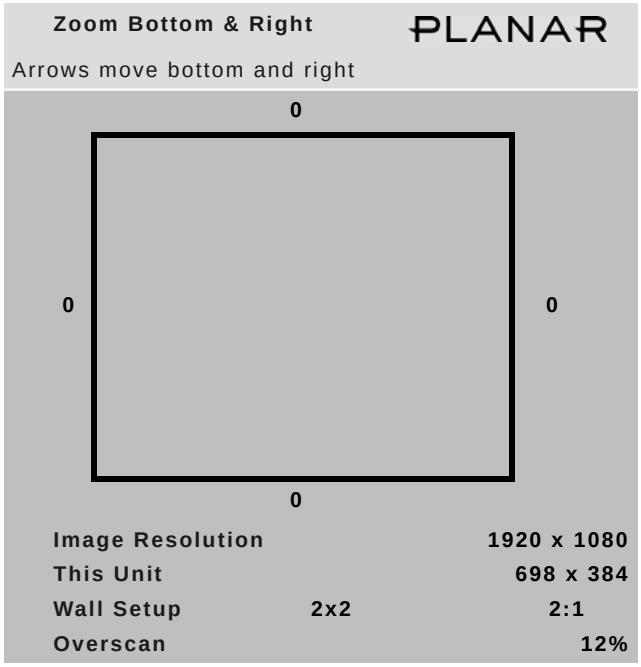
Wall Setup

Specifies the size of the array (from the WALL & ASPECT RATIO menu) and the Column and Row of this display.

Overscan

See "Overscan" on page 49.

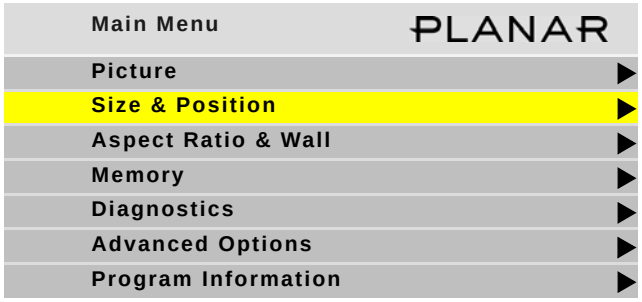


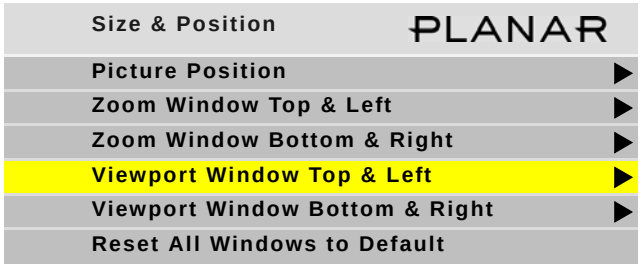


Viewport Adjustment

The Viewport menus adjust the image on the LCD.

Use the VIEWPORT menu (MAIN > SIZE & POSITION > VIEWPORT) TO adjust the number of pixels actually used on the LCD. You can't increase this number, naturally, but you can reduce it.



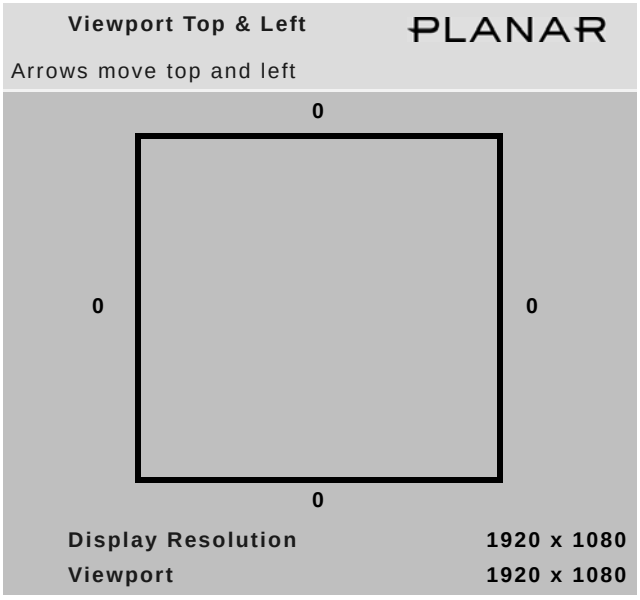


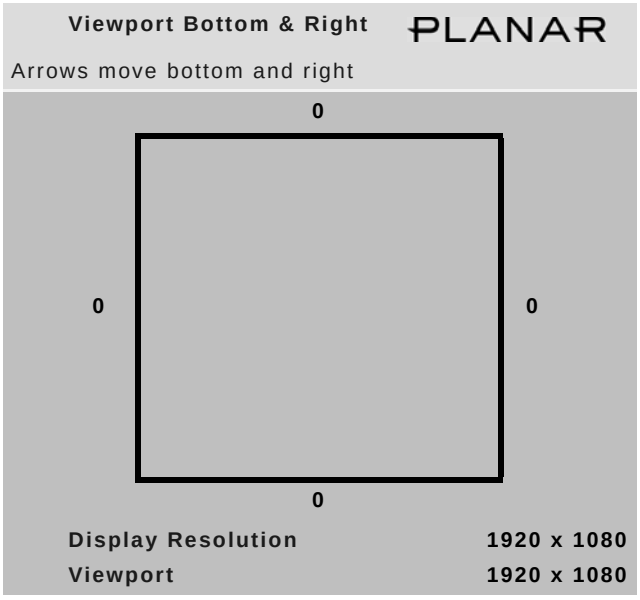
Display Resolution

Shows the resolution of the unit. This has nothing to do with the resolution of the source picture.

Viewport

Shows the number of LCD pixels being used





Tiling a Display

Whether you use Planar's Big Picture™ or an external video processor, your goal is to make the picture fit together properly at the edges.

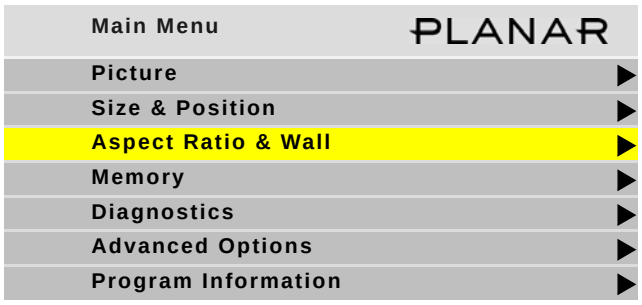
Using an External Video Processor

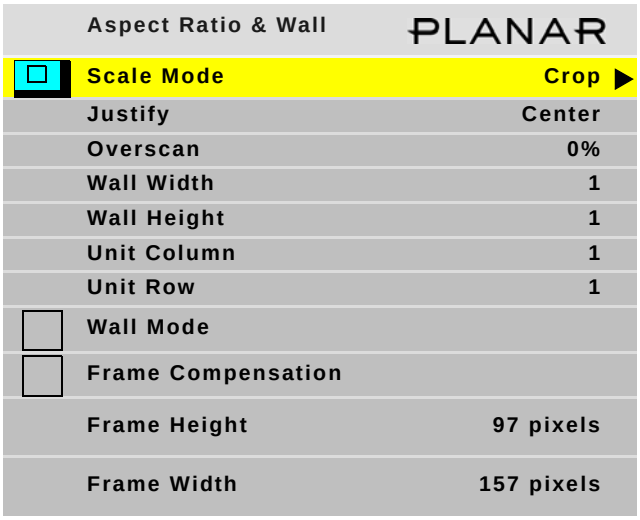
The processor divides a single picture into several sections and sends each part on a separate cable. Connect these cables to the proper display.

You can still position the picture with the display controls, or with most processors, position and zoom the picture with the processor controls.

Using Planar's Big Picture™

To use Planar's Big Picture™, you must set the values in the ASPECT RATIO & WALL menu for the same Wall size on all the displays in the array.





To show the same source on all the displays in an array you'll need to use an external distribution amplifier. For small Wall applications, you can also use the built-in DVI loop-thru or the built-in SDI loop-through. For each display, set the ASPECT RATIO & WALL menu for the same array size.

Wall Width and Wall Height

These show the number of displays wide and high for the *picture*. This may be different from the physical size of the Wall. You could build a 4x3 array of displays and use Wall mode to put a single picture on the four displays in the upper left corner, for instance.

Unit Column and Unit Row

These represent the position of the display in this "array." For example, in the 4 x 3 array of displays shown below, Unit numbering starts at the top left corner of the array. This display would have a Unit Column value of 1 and a Unit Row value of 1.

1:1	2:1	3:1	4:1
1:2	2:2	3:2	4:2
1:3	2:3	3:3	4:3

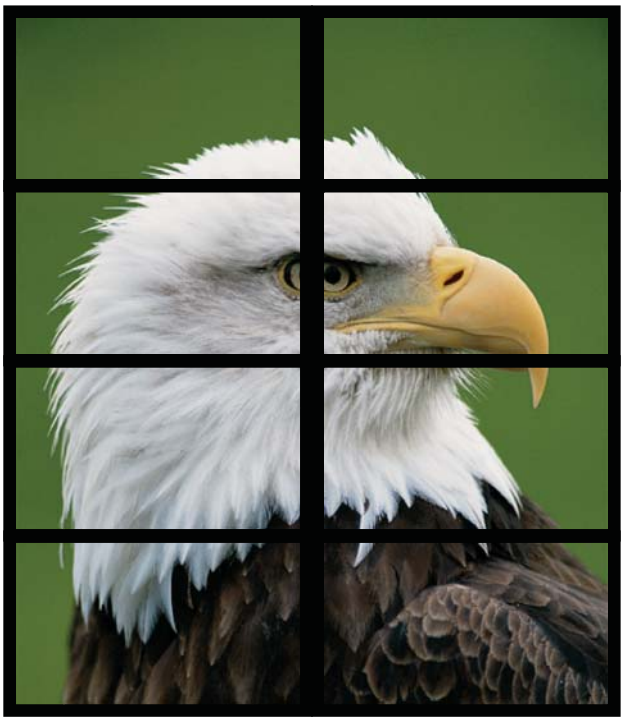
Wall Mode

When checked, this turns on the Planar Big Picture™ feature. When not checked, the display shows the whole picture.

Note: Each display in an array gets the whole picture by feeding them all with a distribution amplifier. The ASPECT RATIO & WALL menu tells each display what portion of the entire picture to display.

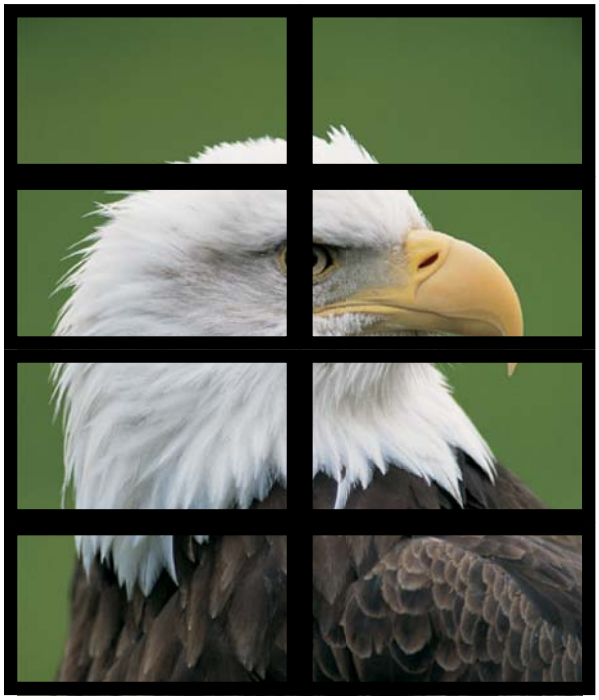
Frame Compensation

When video displays are used in an array, the intent is to display a large version of an image. However, even the thinnest of mullions break up the image oddly.



One way around this is to adjust the image. Imagine looking out a window made up of many panes of glass. The image you see is partially obscured by the frames, but your mind assembles the image and ignores the frames.

Frame compensation allows you to mimic the mind's function by "hiding" portions of the picture (as if the mullions were actually hiding the image) and allow the distributed image to appear as one very large image.



To ensure images containing diagonal lines remain correctly diagonal, turn on Frame Compensation.

Depending on how closely you space the displays, you must determine how much of the picture to "hide" behind the display's mullions and the space between displays.

WARNING! The display generates heat. Plan your array installation to provide adequate ventilation or cooling to ensure that your displays operate within normal usage guidelines.

If you have any questions about your installation, consult Planar Systems for proper m57L array configuration guidelines.

Frame Height

Set this to hide pixels at the top and bottom of images.

Frame Width

Set this to hide pixels to the left and right of images.

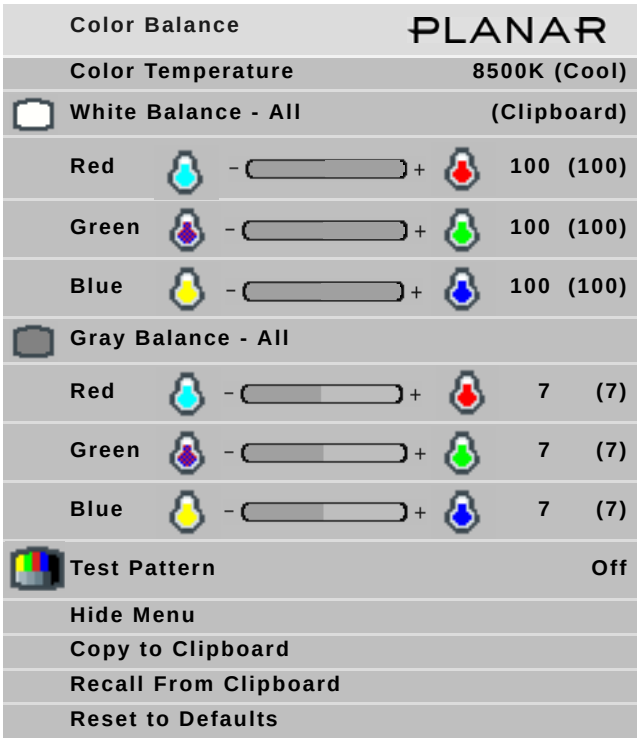
Adjusting Color Balance

Color Balance is used to match the colors of adjacent displays when several displays are arranged in an array. You may also use it to adjust the color of a single display.

For One Display Only

If you have only one display, the Color Balance controls can be used to set the color temperature of the single display.

To access the COLOR BALANCE menu, press MISC once on the remote.



Understanding Color Temperature

Different "Pure white" light sources do not always have the same color. For instance, light from an incandescent bulb has more yellow than light from direct sunlight. "Color Temperature" is a way of measuring these color differences. In general, higher color temperature numbers are bluer or "cooler". You may have a reason for wanting your display to be a specific color temperature. For instance, if you are using the m57L in a television studio where you will be videotaping the content, you will want a low color temperature. The m57L defaults to the brightest setting possible, which is 100 in the RED, GREEN and BLUE lines under WHITE BALANCE. You may choose a different color temperature by setting it in the COLOR BALANCE menu.

Adjusting Color Temperature

Select COLOR TEMPERATURE in the COLOR BALANCE menu and select from 3200°K (Warm), 5500°K, 6500°K and 8500°K (Cool). If you want to brightest display, select the NATIVE option.

Changing the color temperature changes the three WHITE BALANCE values. You can also change the white balance values individually to create a custom color temperature. Once you have changed the values, a new CUSTOM option is available on the COLOR TEMPERATURE line.

Color Balancing for Multiple Displays

The object of color balancing is to make the individual displays in an array show the same colors. When we see a yellow car move across a video array from one display to another, we want it to have the same color for the whole trip, not change from yellow to tan to orange.

Colors vary slightly different from one display to the next, because of slight variations in the backlights and LCD panels. This cannot be avoided, but we can compensate for it with color balancing.

Color balancing is subjective. It may seem strange at first, but it gets easier with practice. Fortunately, you don't have to match all the colors; you only have to match whites and grays.

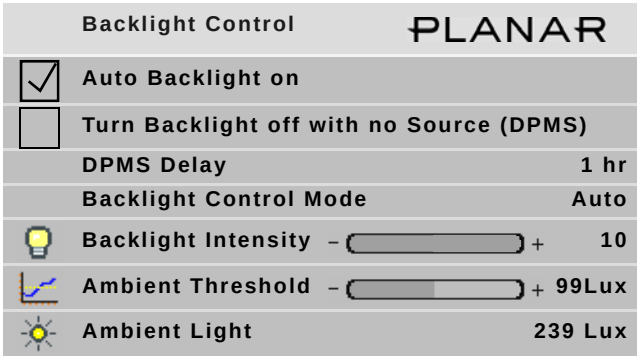
When you make all the displays look the same with White and Gray, all the other colors will look the same. It is not necessary to achieve a perfect white or a perfectly colorless gray. It is only necessary that all the displays look alike when they display white and gray.

Caution: Never try to match the colors of the displays with the Black and White Level controls or with the Video Controls. You will not like the results if you do.

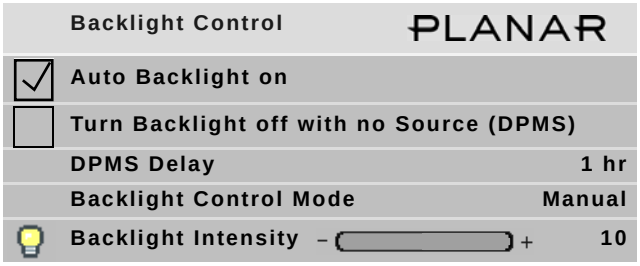
Caution: If you are color blind, even a little bit, do not color balance your array. Have someone else color balance the Wall.

1. Turn on all the displays in the array and let them warm up for at least five minutes. The backlights must be thoroughly warm before you color balance.

2 On each display, open the BACKLIGHT CONTROL AND STATUS menu (MENU > ADVANCED OPTIONS > BACKLIGHT CONTROL).

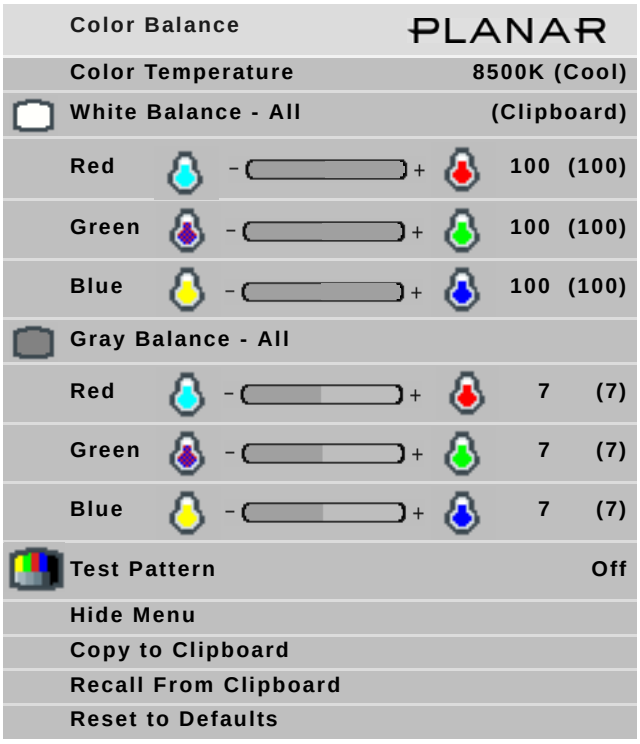


a Set BACKLIGHT CONTROL MODE to MANUAL.



b Set (or confirm) BACKLIGHT INTENSITY to 100%.

3 On each display, open the COLOR BALANCE menu. Do one of the following:
   - Press MISC once on the remote.
   - Press MENU on the remote, and select ADVANCED OPTIONS > COLOR BALANCE).



Note: If the array has never been color balanced, make sure you start with the Native color temperature setting on each display. If you are not interested in achieving a specific color temperature, use Native, which is the brightest. If the display has been color balanced before, it will display CUSTOM in its color temperature setting, because the balance values don't match any of the pre-set color temperatures.

4 On each display, highlight TEST PATTERN and use the left or right arrows until the menu displays WHITE.

Note: Always use the internal Test Patterns for color balancing, not an external pattern.

5 When all displays are white, find the *least bright* display in the array. This will be the "baseline" display, and you will *not* adjust it. All other displays will be adjusted to this baseline display.

Why pick the "least bright" display? Why not pick the brightest and adjust to it? When the White value is 100, the display is as bright as it can get. You are adjusting for slight variations in backlight brightness.

6 Choose a display next to the baseline display and adjust its White values (red, green, and blue) to make it match the baseline display. Concentrate on the center of the displays, not the adjacent edges. (If you can't bring these settings down to match the baseline, maybe you didn't choose the darkest display.) Do *not* adjust the Gray values at this time.

7 Continue with other adjacent displays until all the displays have the same appearance when white. Be careful not to change the values of displays once you are satisfied with them. Select HIDE MENU to keep from setting other displays and allow you to see more of the white field. To unhide the menu, press ENTER.

Note: The menus will automatically turn off after a time determined in MENU OPTIONS (MENU > ADVANCED OPTIONS > MENU OPTIONS > MENU TIMEOUT). If MENU TIMEOUT is 0 (zero), the menus stay up indefinitely.

8 When all displays look the same when displaying the White test pattern, choose the Gray test pattern in all displays.

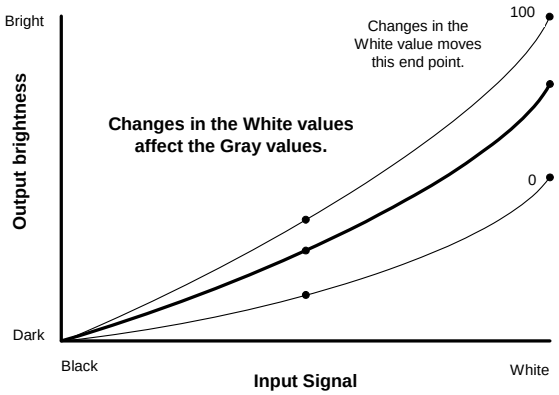
9 Choose any display as the new baseline display. It does not need to be the baseline display you used for White.

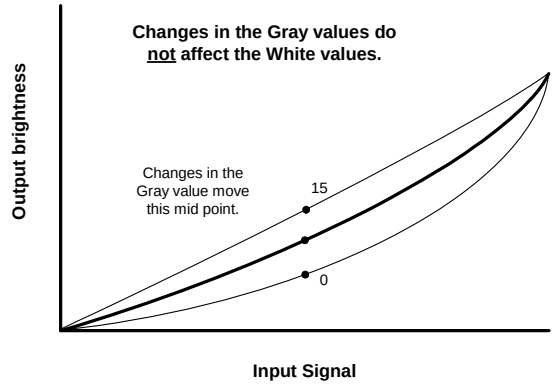
10 Adjust all the displays until they match the baseline display. Do one display at a time. Again, match the center part of the picture, not the edges.

11 When all displays match in Gray, close all the menus. The test pattern automatically turns off.

Tips for Manual Color Balancing

COPY TO CLIPBOARD will save all the current settings to a temporary memory. You can then make more adjustments to see if it gets better or worse. RECALL FROM CLIPBOARD will restore these saved settings. The clipboard is only for testing. Color Balance values are saved for all input sources in the same memory location. Color Balance is the same for all sources.





- Removing red has the same effect on hue as increasing blue and green together. The COLOR BALANCE menu slider bars have colored bulbs at each end to tell you what the effect will be of moving a color toward that end.
- Stand back from the display array and directly in front of it to get the overall view.
- Small changes are difficult to see at first, particularly with White. Change the value by 4 or 5 steps to see the difference. If you are going the wrong way, go back and move it 4 or 5 steps in the other direction. If neither of these bring you closer to a match, try another color.
- When you don't know which color to change, pick one at random and change it 3 or 4 steps. The result will be either better or worse. If worse, go the other way with that color. If that is also worse, put this color back where you started and to the same with another color. If everything you do makes the match worse, you must be close to the ideal point.

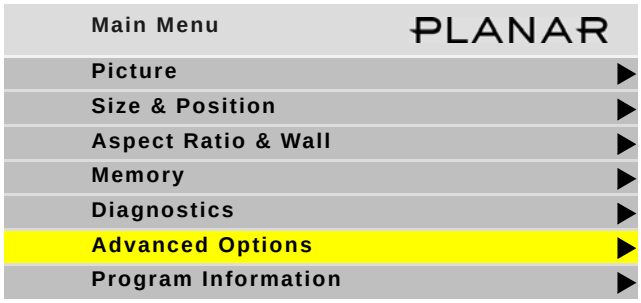
- You may find it easier to color balance displays using ***Cube Control 2***, a software utility available from Planar's website. For more information, see "Accessing Planar's Technical Support Website" on page 101.

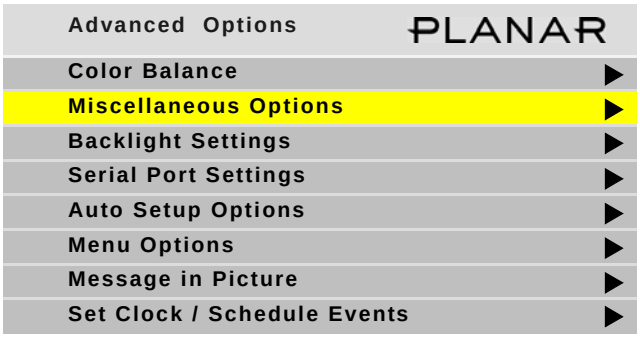
Advanced Options

Some options on the ADVANCED OPTIONS menu (MAIN > ADVANCED OPTIONS) are covered in other sections or chapters of this manual:

- Color Balance: see “Adjusting Color Balance” on page 63
- Backlight Settings: see "Backlight Control" on page 83
- Serial Port Settings: see “Serial Port Settings and Diagnostics” on page 87

The remaining options are covered in this section.

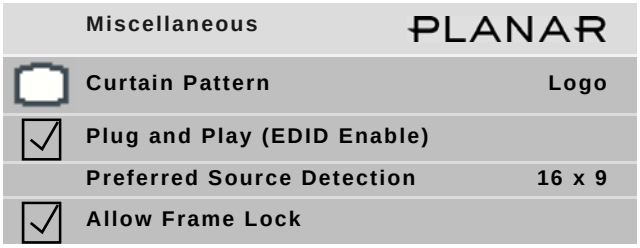




- Miscellaneous Options: see “Miscellaneous Options” on page 72
- Auto Setup Options: see “Auto Setup Options” on page 73
- Menu Options: see “Menu Options” on page 74
- Message in Picture: see “Message in Picture” on page 75
- Set Clock/Schedule Events: See “Setting the Clock/Scheduling an Event” on page 76

Miscellaneous Options

The MISCELLANEOUS menu contains several unrelated settings. To access the MISCELLANEOUS menu, press MISC twice on the remote.



Curtain Pattern

The curtain pattern determines what the m57L will show when you press the CURTAIN button.

Plug and Play (EDID Enable)

Plug and Play allows the source computer's video card to query the display and send the correct resolution. Most video cards work with Planar displays. For the few that don't, you may need to turn off Plug and Play and manually specify the video card settings based on the display's capabilities.

Preferred Source Detection

Analog computer video cards provide only vertical and horizontal frequencies. Sometimes, this is not enough information. A display receiving such "ambiguous" signal modes, in certain cases, could misinterpret the resolution to be any of three different modes. For example, 1024 x 768, 1280 x 768, and 1360 x 768 all have the same respective horizontal and vertical frequencies but represent different aspect ratios, 4 x 3, 15 x 9, and 16 x 9, respectively. By specifying the correct source detection mode, the display can correctly interpret the signal and display the incoming image in the proper aspect ratio. The native aspect ratio of the display is 16 x 9, and the default resolution is 1920 X 1080.

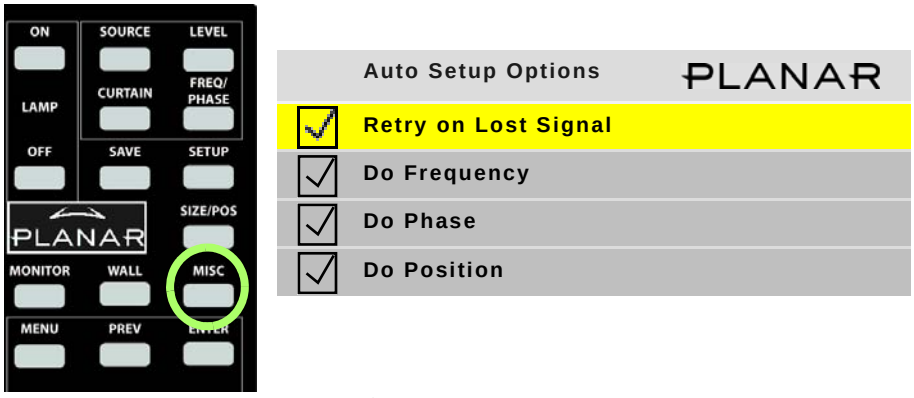
Allow Frame Lock

Frame lock causes the display to synchronize its vertical refresh timing with that of the incoming source. This prevents frame tearing or frame dropping. To Frame lock, the incoming signal must be within the refresh parameters of the LCD itself, which is from 49.3 Hz to 64.8 Hz.

Auto Setup Options

Auto Setup Options set what will happen automatically and what will not.

To access the AUTO SETUP OPTIONS menu, press MISC on the remote five times.



Each of the checkboxes in Auto Setup Options can be turned on or off by selecting it (using the up/down arrows) and pressing ENTER.

Retry on Lost Signal

Occurs only when the present signal (picture) disappears or changes in some way. If this item is not checked, the display will not try to sync to a new signal. Keep this menu item checked.

Note that searching will *not* happen just because the picture goes black. Black, from video or from a computer, is a valid picture. The signal itself (the sync pulses) must be lost to trigger a search.

"Do" Checkboxes

Each DO that is checked ☑ will adjust the display, one process at a time, until all the processes are completed.

In the following situations, each of the checked **Do** boxes will be done in the order shown in the menu:

- If a new signal is acquired, either through a search to a different connector or because source picture changed modes, such as from WXGA to UXGA.
- When you press the SETUP button on the remote.

Do Frequency and Do Phase

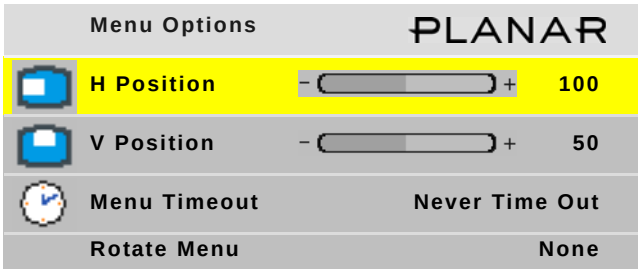
Work separately to find the frequency and phase of the computer picture and adjust to them. This works best on a picture that has lots of sharp changes in brightness, such as text (adjacent white and black pixels).

Do Position

Centers the picture on the screen.

Menu Options

Menu Options determine the position, orientation, and time duration of the menus on the screen. To access the MENU OPTIONS menu, press MENU on the remote and from the MAIN MENU, select ADVANCED OPTIONS > MENU OPTIONS.



H Position

Moves the menus (all of them) left and right on the screen. Use the left and right arrows to increase or decrease the distance from the left side of the screen to the left side of the menu. The number indicates in percent, how far across the screen the menu starts.

V Position

Moves the menus up and down. Use the left and right arrows to move the menu. The number indicates how far down the screen the menu is in percent. It is not possible to move the menu to the bottom of the screen.

Menu Timeout

Determines how many seconds the menu will stay on the screen without any activity. NEVER TIME OUT means the menus will not automatically disappear. The maximum time is 60 seconds. The shortest possible time is 5 seconds. If you have never changed MENU TIMEOUT, the default value is NEVER TIME OUT.

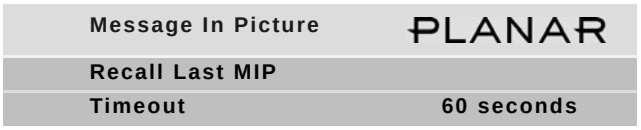
Rotate Menu

Makes the menus readable when the display is arranged in portrait or landscape orientation.

Note: ROTATE MENU does not rotate the picture. It only arranges the menus so they read the same way the picture does. To use the display in portrait mode, your source image must be rotated.

Message in Picture

Message in Picture enables text messages to be displayed on a single display or an array. To access the MESSAGE IN PICTURE menu, press MENU on the remote and from the MAIN MENU, select ADVANCED OPTIONS > MESSAGE IN PICTURE.



Recall Last MIP

Redisplays the last Message in Picture that was displayed.

Timeout

Determines how long this message will be displayed; the range is 0-120 seconds; 0 seconds means it will not time out.

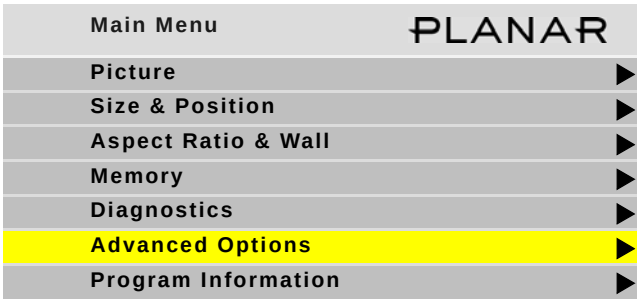
To generate and administer text messages, you must download the MIP Maker software application from Planar's website. We suggest you also download the user guide. For more information, see "Accessing Planar's Technical Support Website" on page 101.

Setting the Clock/Scheduling an Event

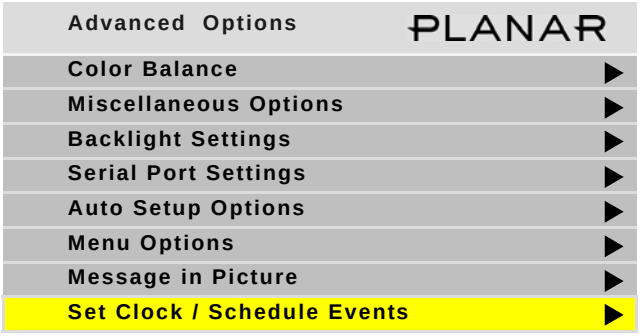
The m57L can be easily programmed to update the clock during annual time changes, as well as to schedule specific events, such as turning the unit on or off.

1 Press MENU on the remote.

The MAIN MENU displays.



2 Use the up/down arrows to select Advanced Options. Press ENTER.
The ADVANCED OPTIONS menu displays.



3 Use the up/down arrows to select SET CLOCK / SCHEDULE EVENTS.

4 Press ENTER. The SET CLOCK / SCHEDULE EVENTS submenu appears.

5 Press ENTER to open the EVENT popup menu.

6 Do one of the following:

- To set the clock, see “Setting the Clock” on page 78.
- To schedule an event, see “Scheduling an Event” on page 79.

Setting the Clock

Use the following instructions to set the clock.

1 If 0 is not already selected in the Event # line, use the -/+ keys to select it.

Event # (0= set clock)	0
Frequency	Never
Action	No Action
Slot to Recall	1
Day of Week	Tuesday
Year	2007
Month	03
Date in Month	05
Hour	21
Minute	30

2 Depending on the changes you want to make, update any of the following lines:

- Year
- Month
- Date in Month
- Hour
- Minute

Note: Time is calculated using a 24-hour clock. For example, if the current time is 9:30 p.m., set the Hour line to 21 and the Minute line to 30.

3 When you are finished making the appropriate changes, press ENTER to see the new time at the top of the SET CLOCK / SCHEDULE EVENTS menu.

4 Press MENU to close the menu system.

Scheduling an Event

The most important event that can be “scheduled” for the m57L is to turn it on or off. Scheduling an automatic shut off time for the m57L helps ensure that Temporary Image Retention does not occur. The following events can be scheduled:

- Turn unit off/on
- Set the clock ahead/back 1 hour
- Recall a memory slot

Use the following instructions to schedule an event.

1. Use the -/+ keys to select the “event number” you want to correspond to this event.

2. Use the up/down arrows to select the Frequency line. Use the -/+ keys to scroll through the list until you find the selection you want. The following frequencies can be selected:
- One Time (e.g. to set clock ahead one hour during the spring)
- Daily (e.g. to turn the unit on/off)
- Weekly

Event # (0= set clock)	1
Frequency	Daily
Action	No Action
Slot to Recall	1
Day of Week	Wednesday
Year	2007
Month	02
Date in Month	28
Hour	0
Minute	0

Note: If you have set up a one time event, the frequency will show “Never” once the event has occurred. You can schedule the event to occur again by changing the frequency back to “One Time” and then correcting the date and time.

3. Use the up/down arrows to select the Action line. Use the -/+ keys to scroll through the list of Action items until you find the one you want.

The following actions can be selected:

- Turn Unit Off
- Turn Unit On
- Recall Slot
- Set Clock Ahead 1 Hour
- Set Clock Back 1 Hour

4 Do one of the following:

- If you selected "Recall Slot" in the previous step and want to recall a memory slot other than the one shown, go to 5.
- If you did **not** select "Recall Slot" in the previous step, go to 6.

5 Use the up/down arrows to select the Slot to Recall line. Use the -/+ keys to scroll through the list until you find the selection you want.

Event # (0= set clock)	3
Frequency	Weekly
Action	Recall Slot
Slot to Recall	4
Day of Week	Monday
Year	2007
Month	05
Date in Month	28
Hour	12
Minute	30

Note: If you select a memory slot that has not been set up, no action will occur.

6 Depending on the frequency you selected and the change you want to make, update any of the following lines:

- Day of Week
- Year
- Month
- Date in Month
- Hour
- Minute

Note: Time is calculated using a 24-hour clock. For example, if you want your unit to turn off at 9:30 p.m., set the Hour line to 21 and the Minute line to 30.

7 Continue setting up events until you are finished. Changes are automatically saved each time you move from line to line.

8 When you are finished making the appropriate changes, press ENTER to see the new events on the SET CLOCK / SCHEDULE EVENTS menu.

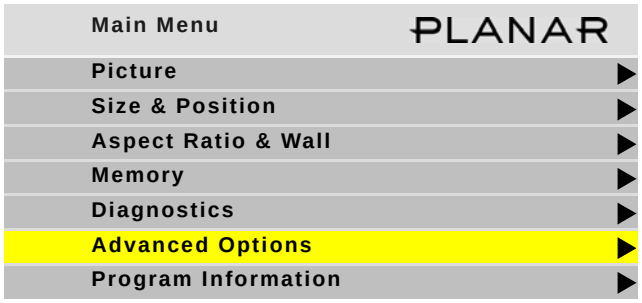
9 Press MENU to close the menu system.

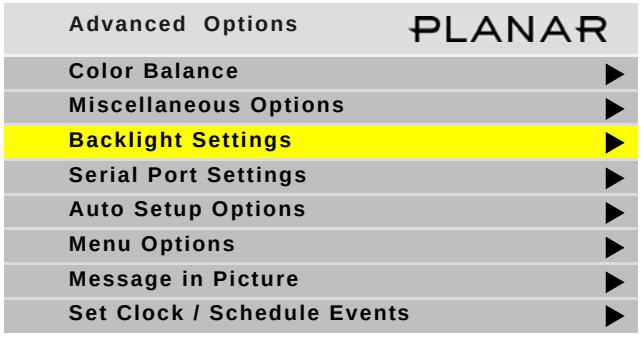
Backlight Control

Backlight control can automatically adjust the screen brightness as ambient light conditions change.

Note: To extend the backlight life, it is recommended that you use the lowest backlight brightness that makes sense for your application. This will reduce power consumption, heat output and the chances of TIR from occurring.

To get to the BACKLIGHT CONTROL menu, go to MAIN MENU > ADVANCED OPTIONS > BACKLIGHT SETTINGS.





Backlight control has two options: automatic and manual. In the manual mode, you adjust the backlight brightness to suit ambient conditions that are not likely to change.

In the automatic mode, you let the ambient light determine the image brightness. This is useful when the m57L is in a location that sometimes has daylight, which of course, varies.

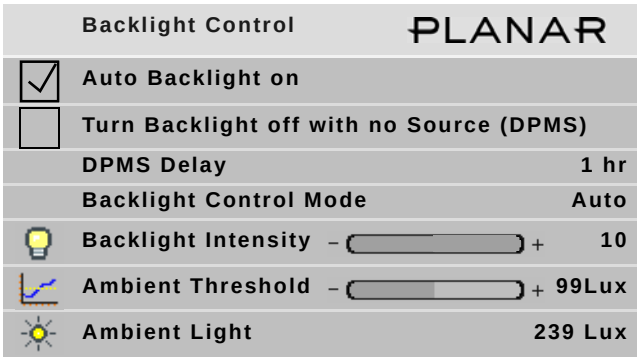
When there is more light in the area of the m57L, the screen will have to be brighter to see it clearly, and the backlight intensity will be 100%. When there is less ambient light, the screen can be darker and still be read easily.

The backlight is optimized for the LCD operation. For normal operating conditions, the backlight can be adjusted for maximum brightness if desired. If you are operating at higher altitude up to 2000m, it is recommended that you run the backlight at a reduced intensity. Running at maximum intensity at high altitudes can affect the lifetime expectancy.

The look of the BACKLIGHT CONTROL menu depends on whether it is in manual or auto mode.

Auto Backlight Control

1 Set the BACKLIGHT CONTROL MODE to AUTO.



2 Set the AMBIENT THRESHOLD to an ambient light level at which the backlight changes intensity. If the current ambient light (shown on the bottom line) drops below the threshold, the backlight dims; if it rises above the threshold, the backlight brightens.

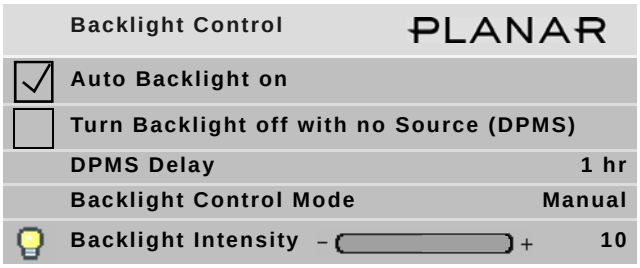
Note: Ambient light is a relative value, and is pertinent only to the m57L. It is not an absolute value. You may get different ambient light values with a handheld light meter.

Note: The m57L has a nominal time delay of three minutes before it changes light levels. This time delay prevents flickering if the ambient light level is near the AMBIENT THRESHOLD.

Manual Backlight Control

This mode is useful when the m57L is in a room with no outside windows and unchanging ambient light levels.

1 Set the BACKLIGHT CONTROL MODE to MANUAL.



2 Adjust the BACKLIGHT INTENSITY to comfortable brightness. A lower brightness will increase lamp life.

Caution: Changing a failed backlight is a job for a qualified service technician. It is done at the factory, not in the field. Contact your Planar dealer for more information.

Serial Port Settings and Diagnostics

If you want to control the displays remotely with RS232 commands from a computer, read this section. Otherwise, skip it.

Multiple displays can be linked together for RS232 control using a straight-through 8-conductor cable with RJ-45 connectors. This is the common type of LAN connection cable sometimes called Cat-5 cable. For more information, see "Connecting RS232 Communication" on page 21.

RS232 is also used to upgrade the firmware of the display.

Serial Port Settings

To access the SERIAL PORT SETTINGS menu, press MISC four times on the remote.

Serial Port Settings	PLANAR
Group ID	1
Unit ID	1
ASCII Response Type	Symbolic
ASCII Response Terminator	CR
Baud Rate	19200

Group ID and Unit ID

Each display in the loop must have a unique ID.

The RS232 ID has two parts, Group ID and Unit ID. Each part has a range of 0–9, A–Z. This range results in 1300 possible addresses.

You can group the displays by using the same letter or number of the Group ID, such as A. In this way you can address the group as A*, and all the displays in the string that have Group ID A and any Unit ID will execute the command.

Note: It does not matter what order you use to set IDs for the displays. It is common practice to use Unit IDs that are in order, left to right and top to bottom, but this is not mandatory. The only rule is: DO NOT USE THE SAME ID FOR DIFFERENT DISPLAYS.

Part of the RS232 command will be an address. This address may take several forms. For example, suppose we have 8 displays in one area divided into two groups. We might set the ID s of the displays like this:

Group ID	Unit ID
A	1
A	2
A	3
A	4
B	1
B	2
B	3
B	4

With this scheme, we have four ways to address these displays:

Address	Affect on Displays
A3 B4 etc.	Only the specific display addressed will obey the command. Also, the display will respond to the host computer.
**	All displays in this serial loop will obey the command.
*4	Both the displays whose IDs end in “4” will obey this command.
B*	All four displays in Group B will obey the command.

ASCII Response Type

Determines what type of data will be returned to the computer. For human-readable text in a serial program, choose Symbolic. For computer-read data, use Numeric or Data Only.

ASCII Response Terminator

Will be determined by what your serial program wants to see at the end of every transmission from the display.

Baud Rate

Must be the same as that used by the controlling computer. The baud rate is *not* automatically set, as it is with modem communications. It must be manually set here and at the computer to match each other.

Note: For firmware upgrades, you don't need to adjust the baud rate.

Serial Port Status

To view RS232 port status, press MONITOR twice on the remote.

Serial Port Status	PLANAR
<ENTER> to clear	
Commands Received	34
Replies Sent	34
Last Packet Type	Operation
Last Packet Address	Not Addressed
Bytes Received	921
Bytes Sent	773
UART Framing Errors	4
UART Overflow Errors	0
Group 0 Unit: 0 19200 Baud	
	Most Recent
	...115, 111, 108, 117, 105, 111, 110, 63, 13
	.st--1?.st--2?.st--3?.lcd.vertical-resolution?.

The SERIAL PORT STATUS menu provides diagnostic information for the serial port.

Controlling With RS232 Commands

The RS232 protocol—the "rules" for controlling displays with RS232 commands—are given in a separate document. See "Accessing Planar's Technical Support Website" on page 101 to see how to get to the web page. Then look for m57L and under that the *RS232 Programming Guide*.

Saving and Recalling Configurations

Some settings are saved automatically, but there are big advantages to saving a configuration manually. You can use the 40 numbered memory "slots" to save and recall settings, which is the fastest way to change configurations.

Some display settings (such as position, brightness/contrast, and color balance) are saved automatically five seconds after you make a change. The display caches the last ten settings. Whenever a picture is shown from a new source with the same resolution as a previous picture, the display recalls the previous settings rather than readjusting everything. This happens regardless of the check marks in AUTO ADJUST OPTIONS. (See "Auto Setup Options" on page 73.)

For example, suppose you display an NTSC picture in the composite input and set the Aspect Ratio and Position to your liking. Then you feed in a composite PAL picture and set a different Aspect Ratio and a different Position. If you then send a new NTSC picture, the previous NTSC picture's settings for Aspect Ratio and Position are used.

If you now switch back to the WXGA picture, the display uses the Brightness, Contrast, and other settings from the last time it received a WXGA picture.

Note: Aspect Ratio is specific to the source, which means it applies to all modes. It does not change when the system recalls a memory from cache.

How Automatic Save Works

Whenever you change settings on the display with the remote control or RS232 commands, they are saved automatically. If you change to a new source (switch to another input connector) then switch back to the previous source, everything you did before will be "recalled." Things will look like they did before.

Suppose you make adjustments to an SVGA source on Analog, then you feed a UXGA source to Analog and make new adjustments. Then you switch to the S-Video connector and do some more setup for it. Later, you switch to the Analog input again, and this time it has the SVGA source from before. The display will recognize that it has seen this source before, or at least a source with these characteristics, and will recall the SVGA settings you established before.

The settings recalled by Automatic Save include Input Levels, Position, and Frequency. However, Wall Mode and Big Picture adjustments are not saved with Automatic Save. Those settings can only be recalled from memory slots.

The fastest, most efficient way to change from one source to another, or to change a Wall from individual pictures to one big picture, is to recall a memory.

Advantages of Saving Configurations to Memory Slots

- You can compare multiple settings quickly
- You don't have to repeat settings when comparing entire configurations
- You can revert to a known good setting when testing new configurations

What the Memories Store

The following settings can be stored in a memory slot and recalled when needed:

- Selected source
- Resolution (and much more about the signal)
- Frequency
- Phase
- Sharpness
- Position and size (zoom settings)
- Everything in the WALL & ASPECT RATIO menu
- Black and White Levels for RGB sources
- Brightness, Contrast, Hue, and Saturation for video sources

All of this is stored separately for each memory slot; as an example, you could store multiple different Wall setups and switch between them quickly.

Global Storage

The following settings are stored globally; that is, they stored at the display level and are the same for all memory slots.

- Everything in the MISCELLANEOUS menu
- Everything in AUTO SETUP OPTIONS
- Everything in MENU OPTIONS
- All the HOURS menu
- All the COLOR BALANCE settings

Memory: What Is Saved? And Where?

In the display, some parameters (values) are associated with the **Mode**. The Mode is primarily the horizontal and vertical resolution and the vertical frequency of the incoming source picture. It is more than this, but if you think of it this way, you will be close enough. Some parameters are associated with the **Input**. The Input in this instance means the input connector: Analog, Digital, Composite video, etc. The parameters specific to Mode and Input are saved in memory slots.

Some parameters are global. They are independent of the Mode or Input, and are not saved to memory slots, as shown in the table below.

Parameter	Specific to the		Global	Parameter	Specific to the		Global
	Mode	Input			Mode	Input	
ASCII Response Term.			x	Position, Horizontal	x		
ASCII Response Type			x	Position, Vertical	x		
Auto Codes			x	Resolution, Horizontal	x		
Auto Backlight On			x	Resolution, Vertical	x		
Baud Rate			x	Retry On Lost Signal			x
Black Level: R, G, & B	x			Saturation	x		
Brightness (video)	x			Sharpness		x	
Color Balance (all values)			x	Unit ID			x
Contrast (video)	x			Viewport Window Bottom		x	
Curtain Pattern			x	Viewport Window Left		x	
Do Frequency			x	Viewport Window Right		x	
Do Phase			x	Viewport Window Top		x	
Do Position			x	Wall Height		x	
Frequency	x			Wall Mode		x	
Group ID			x	Wall Unit Column		x	
Hue	x			Wall Unit Row		x	
Justify		x		Wall Width		x	
Menu H Position			x	White Boost			x
Menu Timeout			x	White Level: R, G, & B	x		
Menu V Position			x	Zoom Window Bottom		x	
Overscan		x		Zoom Window Left		x	
Phase	x			Zoom Window Right		x	
Plug and Play (EDID)			x	Zoom Window Top		x	

Switching Modes

Suppose you set up the Black and White Levels for a 1024x768 @ 65Hz from a computer connected to Analog. Then later, using the same input connector but a different computer, you set up the display for a 1600x1200 @ 60Hz. You re-adjust the Black and White Levels, because they are different.

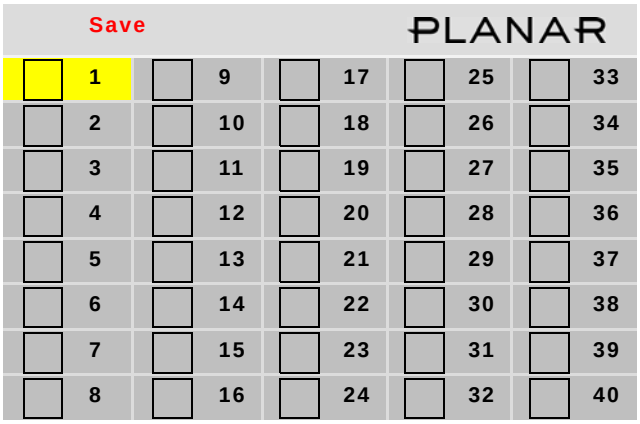
Still later, you plug in the first computer with its 1024x768 @ 65Hz picture. Immediately, the display recognizes that it has seen this signal type before, and it recalls the Black and White Levels from its internal memory.

It does not do Frequency or Phase or anything else, because it recognizes that this input was used before, and the previous settings are probably correct.

However, suppose that after setting up the 1024x768 and 1600x1200 pictures, you connect a third computer that is 1024x768, but it has different requirements for Black and White Levels. In this case, the display would use the values for the levels you set up for the first computer. To prevent this from happening, use the memory slots to save this specific configuration as described in "Saving and Recalling Configurations" on page 91.

Saving Configurations

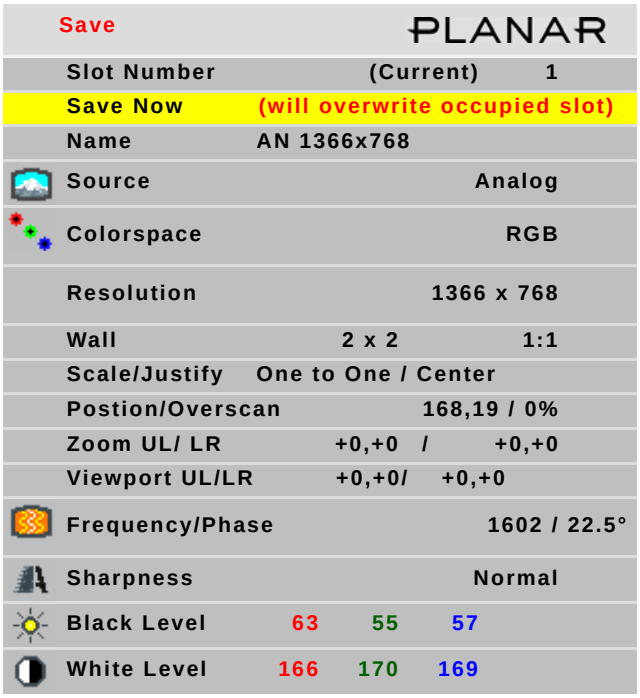
1. Set up the display the way you want it.
2. Press the SAVE button twice.



The SAVE grid menu displays. This menu contains 40 numbered memory slots.

3. Using the arrow keys on the remote, navigate to a slot:
   - An unchecked slot number allows you to save new settings.
   - A checked slot has settings already saved to it. You can overwrite what's already saved, if you want.

4 Press ENTER. The SAVE detail menu displays.



Note: This menu shows all the settings that will be saved. You can't change anything but the name in this menu. The appearance of this menu is somewhat different for digital and video sources, reflecting what is saved for them.

a If the current settings exactly match what is already in the memory, (CURRENT) will appear in the SLOT NUMBER line.

b If the memory already had data, and the only change is to the name, the phrase "will update name of occupied slot" appears in the SAVE NOW line.

c If this memory already has something stored in it, the phrase "will overwrite occupied slot" appears in red on the SAVE NOW line. This is the only warning.

d If none of these messages appear, this slot is empty.

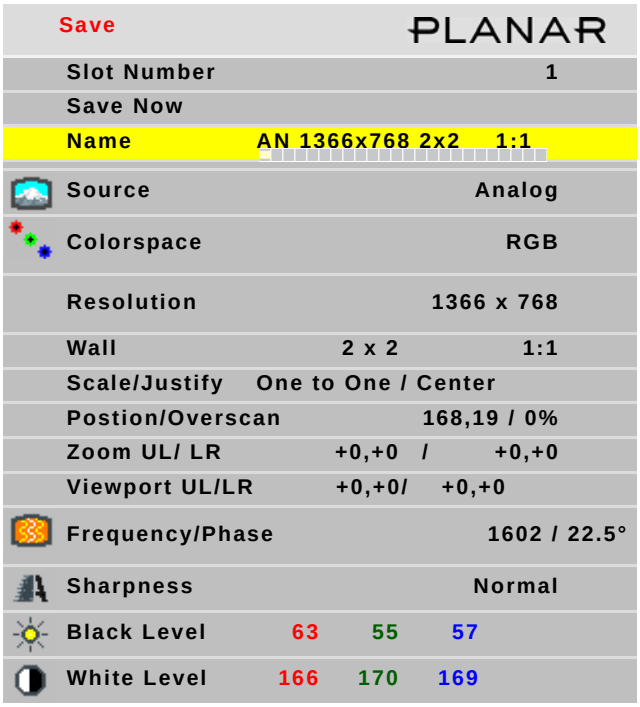
5 Select SAVE NOW and press ENTER. The display instantly stores all the current settings into that memory slot.

Note: Record the names for the configurations you create in the m57L *End-User Guide* that came in the shipping box. There is a list in that manual for this purpose.

Changing the Name of the Memory Slot

The default name is an abbreviation of the source connector, resolution, and if Wall mode is on, Wall settings. In the example below, the name tells you that the source is connected to Analog, which is displaying 1366 x 768, it is part of a 2x2 array, and it is the display in the upper left corner (column 1, row 1).

1 If you want a more descriptive name, select NAME and press ENTER.
A little bar appears beneath the name.



a Use the - or + keys to move the yellow selector under the character you want to change.

b Use the up/down arrows to change the character.

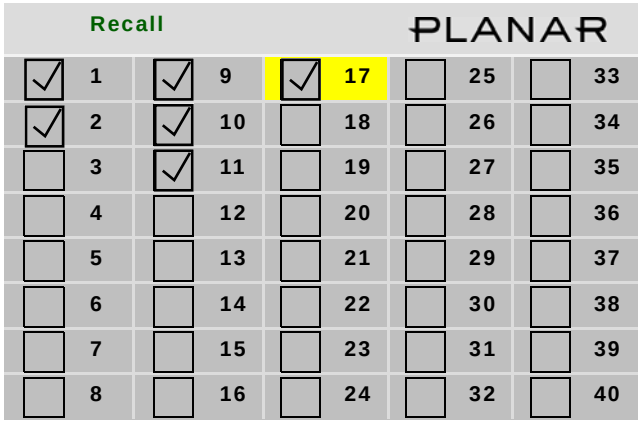
2 When you are finished, press PREV.

3 Select SAVE NOW and press ENTER.

Note: If you use RS232 control, you can also use commands to send a string name to a memory slot, saving time.

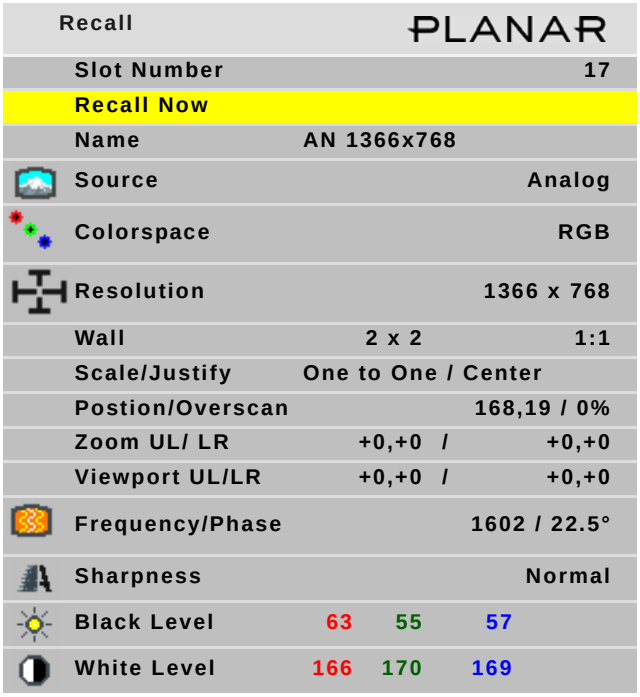
Recalling Stored Configurations

1 Press SAVE once to open the RECALL grid menu.



2 Navigate to the slot you want to recall. You can only go to slot numbers that are not empty, that is slots that have checks.

3 Press ENTER to open the RECALL detail menu.



Note: If this slot number has exactly the same settings that are currently being used, a (CURRENT) message appears on the top line.

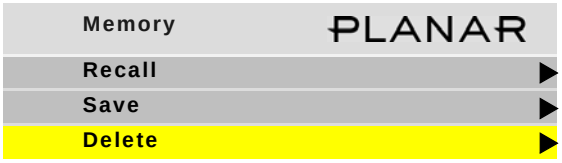
The name of the memory is listed here, as well as all the important parameters (data) stored in that memory slot.

4 If the name is *not* the one you want, press PREV and choose another memory.

5 In the RECALL detail menu, RECALL NOW is selected. Press ENTER to recall the parameters currently displayed in the menu.

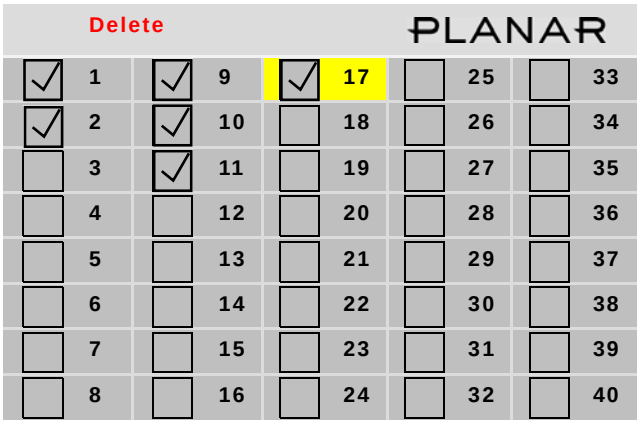
Deleting a Configuration

1 Go to the MEMORY menu (MAIN > MEMORY).



2 Select DELETE and press ENTER.

This opens the DELETE grid menu with 40 numbered memory slots.



3 Navigate with the arrow keys to the slot you want to delete and press ENTER.

When navigating, you can only go to the checked numbers. All the slots with check marks have something stored in them. The others are grayed out.

4 In the DELETE detail menu, DELETE NOW is selected.

Delete			PLANAR
Slot Number			17
Delete Now			
Name	AN 1366x768		
Source			Analog
Colorspace			RGB
Resolution			1366 x 768
Wall	2 x 2		1:1
Scale/Justify	One to One / Center		
Postion/Overscan			168,19 / 0%
Zoom UL/ LR	+0,+0	/	+0,+0
Viewport UL/LR	+0,+0/	+0,+0	
Frequency/Phase			1602 / 22.5°
Sharpness			Normal
Black Level	63	55	57
White Level	166	170	169

5 Press ENTER.

Confirm Slot Delete		PLANAR
Are you Sure?	Yes	No

6 Use the left arrow to make the YES red and press ENTER.

Confirm Slot Delete		PLANAR
Are you Sure?	Yes	No

Note: It is not necessary to delete the data in a memory slot before saving new data. Saving will overwrite the stored data. See "Saving Configurations" on page 94.

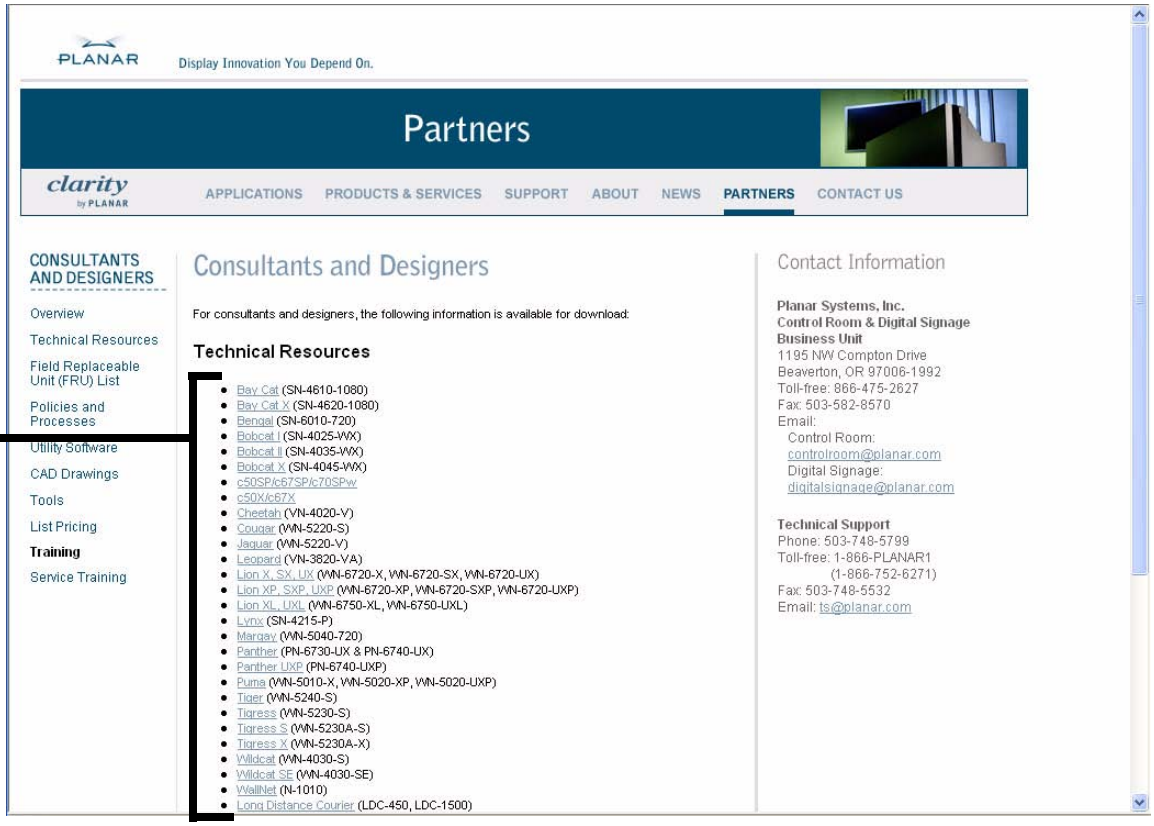
Accessing Planar's Technical Support Website

1. Go to www.planarsignage.com/partners
   Under "Partner login", click on CONSULTANTS AND DESIGNERS
   User name: tech
   Password: help

2. From there, you can access downloadable utility software, new firmware, user manuals, and service manuals.

3. To access information for a specific model, click on that model name. For example, to download an electronic copy of this manual, click on m57L.

To access user guides, service manuals, firmware, and other resources for a particular model, click the model name



Downloading Additional Documentation and Firmware

Some of the other documents for the m57L, which are or will be available from Technical Support Department website, are listed below:

Document Name	Contents
Installation & Configuration Guide (this manual)	Information for installers and technicians to install and configure displays
Troubleshooting, Maintenance, and Service Manual	Troubleshooting steps that provide a logical front-end to service and maintenance instructions
RS232 Reference Manual	Technical information about the product, such as display mode information and how to use RS232 commands to control displays

1. Read the instructions listed under “Accessing Planar’s Technical Support Website” on page 101.
2. Click m57L.
3. From the list, click to download additional documentation and firmware.

Downloading Utility Software

1. Read the instructions listed under “Accessing Planar’s Technical Support Website” on page 101.
2. Click Utility Software.
3. From the list of available software, click on the tool you need.

For example, to control the m57L using RS232 commands, download Serial Talk. You may also wish to download “Using Serial Talk,” which is a document that explains how to use Serial Talk.

Contact Planar Technical Support

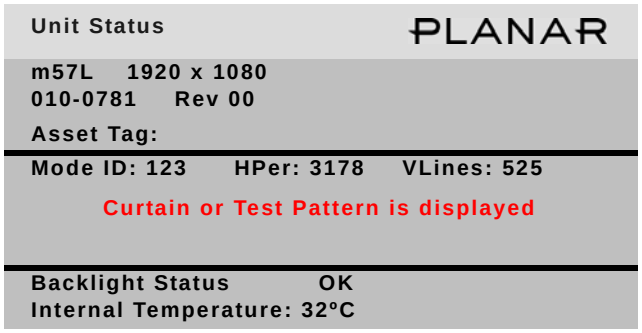
via mail:	Planar Systems, Inc. Control Room and Digital Signage 1195 NW Compton Drive Beaverton, OR 97006
via e-mail:	ts@planar.com
via phone:	+1 503 748 5799
via fax:	+1 503 748 5532

Basic Troubleshooting

Use the following troubleshooting tables to diagnose and resolve common problems.

If your screen shows black or a test pattern

Do This	Result	Explanation / Further Action
1 Press MONITOR on the remote.	No menu appears	The backlights may not be lit. On the remote, press ON. If the screen is still black, go to 4.
	A menu appears	Check if the "Curtain or Test Pattern is displayed" message (in red) appears on the menu. If it does not appear, go to 3. If the message does appear, go to 2.



2 Press CURTAIN once on the remote. If the message does not disappear, press CURTAIN again.	The message has not disappeared	See "m57L doesn't respond to remote control" on page 106
	The message has disappeared	If the correct source does not appear, go to 3.

If your screen shows black or a test pattern

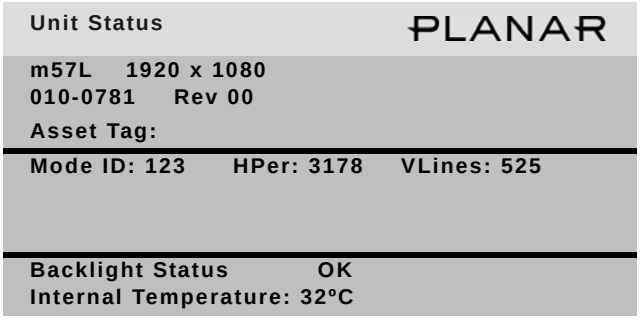
Do This	Result	Explanation / Further Action
3 Press MENU on the remote until the MAIN MENU appears.	The “source absent” pane is visible	Make sure the correct source is selected by pressing SOURCE. If necessary, change to a different source. Make sure the source is on. Make sure the cable between the source and the display is correctly connected at both ends. If the screen is still a solid color, see "Where to Go From Here" on page 108.
	The source absent pane is not visible	The source is displaying a solid color or a test pattern.
4 Ensure the power cable is connected, the power switch is ON and the front LED is illuminated.		Reconnect cable or turn on unit. If none of the previous steps have resolved the problem, see "Where to Go From Here" on page 108.

m57L doesn’t respond to remote control

Possible Cause	Possible Resolution
Power is not on	Confirm that the power cable is connected and the power switch is on and the front LED is illuminated.
Remote batteries are dead or improperly installed	Replace or reinstall batteries.
Remote was not aimed at the IR receiver	The IR receiver is in the lower right corner (in landscape mode; in portrait mode, it is in the lower left corner) of the screen bezel behind a small hole.
Something is blocking the IR receiver	Remove the obstruction.
Your installer or service provider has disabled the remote control	Contact your installer or service provider.

Checking Unit Status

1 Press MONITOR on the remote.



Backlight Status Shows

- OK if both banks of backlights are functioning normally
- FAILED if the backlight banks are not functioning normally

Internal Temperature

Indicates the current internal temperature at one point inside the unit. This is not the highest nor the lowest temperature of the unit, nor an indicator of ambient temperatures.

Where to Go From Here

If none of the suggestions offered thus far have solved your problem, contact the Technical Support Department.

via mail:	Planar Systems, Inc. Control Room and Digital Signage 1195 NW Compton Drive Beaverton, OR 97006
via e-mail:	ts@planar.com
via phone:	+1 503 748 5799
via fax:	+1 503 748 5532

Specifications

Mechanical Specifications

Specification	m57L		Notes
Outside dimensions	in/lbs	mm/kg	
Width	53.7	1364mm	
Height	31.5	800mm	
Depth	4.75	121mm	
Weight (chassis only)	105	48	
Shipping weight	135	61	
Orientation	vertical and horizontal		
Chassis color			charcoal gray
Rear clearance required	none		
Screen dimensions			
Diagonal	57	1448mm	
Width	49.3	1252mm	
Height	27.7	704mm	
Aspect ratio	1.77		
Pixel pitch	0.652mm x 0.652mm		

Electrical and Heat Specifications

Specification	Maximum	Minimum	Typical	Notes
Video input amplitude				
Separate RGB Analog	1.0 V p-p	0.5 V p-p	0.7 V p-p	75 ohm termination
Composite Analog	5.0 V p-p		0.3 V p-p	75 ohm termination
TTL H and V sync	5.0 V	2.5 V	3.5 V	TTL at 330 ohm termination
Input connectors				
DVI-D				Digital
15-pin HD D-sub				

Electrical and Heat Specifications (Continued)

Specification		Maximum	Minimum	Typical	Notes
RCA					Composite video: NTSC, PAL, SECAM
Mini-DIN 4-pin					S-Video: NTSC, PAL
RJ45					RS232 In, RS 232 Out
SDI					BNC female
AC Requirements					
Line voltage	115 V range 230 V range	120 V 240 V	100 V 200 V		50-60 Hz auto switching
Power				550 W	
Current	115 V	6.0 A		4.6 A	
	230 V	3.0 A		2.25 A	
Heat, BTUs per hour				1877	

Optical Specifications

Specification	Maximum	Minimum	Typical	Notes
Screen Brightness		500 nits	600 nits	175ftL
Contrast Ratio			1200:1	
Full Viewing Angle		150°	178°	C/R $\geq$10
Color Gamut			72% NTSC 100% EBU	
Color CIE			CIE 1931	±0.03 for R, G, B, W
Red x			0.648	
Red y			0.333	
Green x			0.271	
Green y			0.592	
Blue x			0.141	
Blue y			0.066	
White x			0.280	
White y			0.290	

Optical Specifications (Continued)

Specification	Maximum	Minimum	Typical	Notes
Color Temperature			10,000 K	
Response time Tr Tf	 10msec 10msec		 3.5msec 4.5 msec	@ 25°C
Number of colors			16.7 M	
Resolution				1920 x 1080 pixels
Backlight life, hours			50,000	

Environmental Specifications

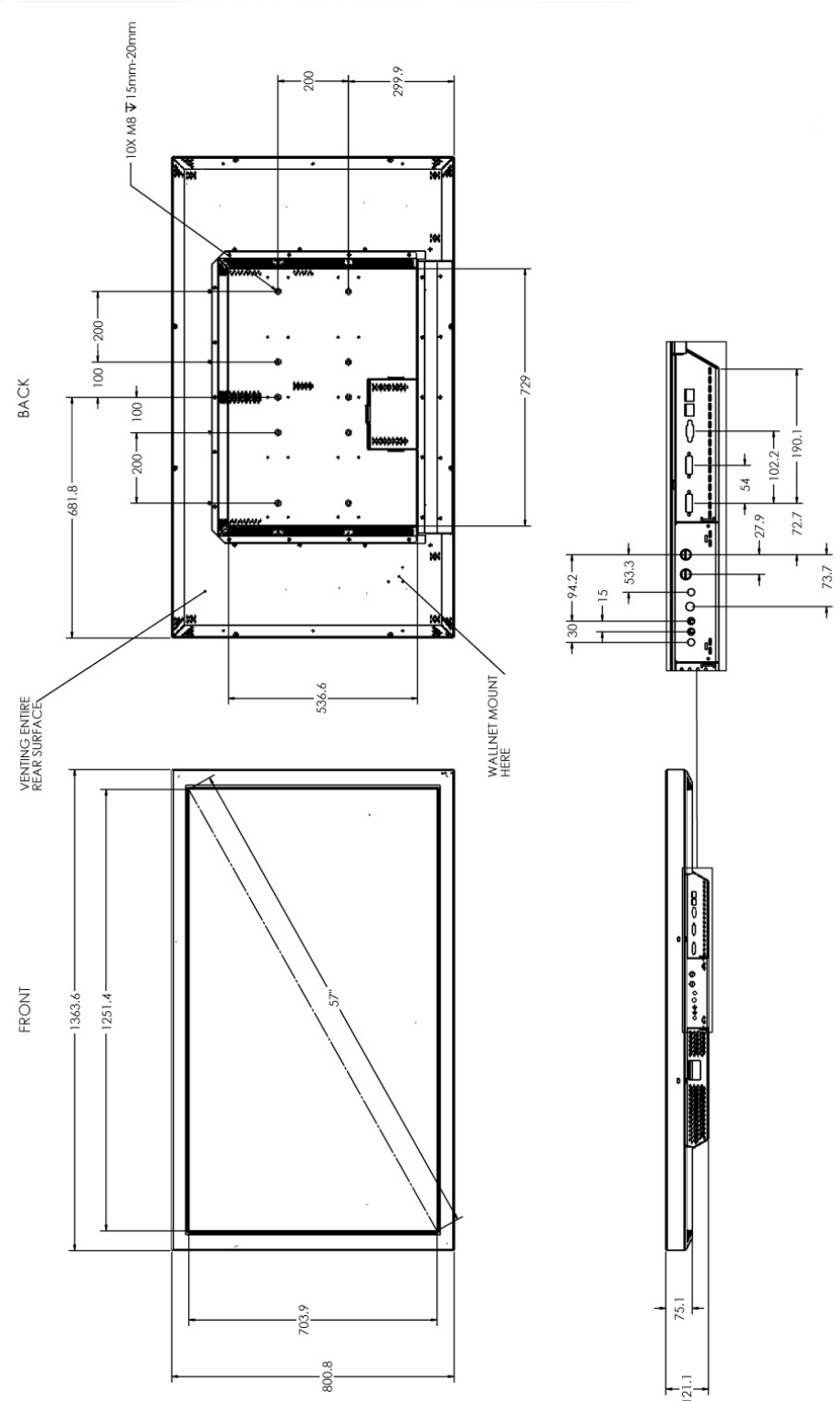
Specification	Maximum	Minimum	Typical	Notes
Temperature, operating	32° C 90° F	0° C 32° F		All performance specifications are maintained within this temperature range.
non-operating	60° C 140° F	–20° C –4° F		
Altitude (barometric pressure)	2,000 m			Above sea level, or equivalent barometric pressure
Humidity	80% R.H.	20% R.H.		non-condensing

Mounting Specifications

Specification	End to End, Longer Side of Display	End to End, Shorter Side of Display	Screw Size
VESA MIS-F	600	200	M8

m57L Dimensions

Dimensions in millimeters except where noted.



Regulatory Information

Manufacturer's Name: Planar Systems, Inc.
Manufacturer's Address: 1195 NW Compton Drive
Beaverton, OR 97006
declares that the products
Model Numbers: m57L (Direct-view LCD)

conforms with the provisions of:

Council Directive 89/336/EEC and amended by 92/31/EEc and 93/68/EEC on Electromagnetic Compatibility;

EN55022:1998 Radiated and Conducted Emissions from IT Equipment

EN55024:1998 Immunity of IT Equipment

Including:	EN61000-4-2	Electrostatic Discharge
	EN61000-4-3	Radiated Immunity
	EN61000-4-4	Electrical Fast Transients
	EN61000-4-5	Line Surge
	EN61000-4-6	RF Conducted Susceptibility
	EN61000-4-8	Magnetic Field Immunity
	EN61000-4-11	Voltage Dips and Interrupts
And:	EN61000-3-2	Harmonic Current Emissions
	EN61000-3-3	Voltage fluctuations and Flicker

Council Directive 73/23/EEC and amended by M1 and C1 on Low Voltage Equipment Safety:

EN60950:2001 Safety of IT Equipment

The Technical Construction File required by this Directive is maintained at the corporate headquarters of Planar Systems, Inc., 1195 NW Compton Drive, Beaverton, OR 97006.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Industry Canada (ICES-003): This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.
Any changes or modifications to the display not expressly approved by Planar could void the user's authority to operate this equipment.

Other Certifications

CISPR 22

Index

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Operation Numbers

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