

Part #:	<b>LT1997 Gain Selectable Funnel Amplifiers</b>	<p>Authorized Distributor of</p>   
Description:	LT1997 amplifiers are designed for high side low sensing, ADC drivers, and industrial data-acquisition front-ends.	 <a href="#">Download Datasheet</a>

## EEVblog Electronics Community Forum

A Free & Open Forum For Electronics Enthusiasts & Professionals

Welcome, **Guest**. Please login or register.  
Did you miss your activation email?

 
  Forever ▾ 

Login with username, password and session length

[Home](#) [Help](#) [Search](#) [About us](#) [Links](#) [Login](#) [Register](#)

EEVblog Electronics Community Forum » Products » Other Equipment & Products » What Metcal?

NEW



### Multi-Channel AWG

- 4, 8 and more channels
- 2.4 GSa/s, 750 MHz, 16 bit
- < 50 ns trigger delay

[Watch the Video](#) 



« previous next »

Pages: [1] 2 3 4 5 6 7 Next All [Go Down](#)

[PRINT](#) [SEARCH](#)

 **Author**

**Topic: What Metcal? (Read 75965 times)**


0 Members and 1 Guest are viewing this topic.

**zapta**

Super Contributor



Posts: 6004

Country: 

 **What Metcal?**

« on: November 05, 2013, 02:04:57 am »

Over the years I heard people praising The Metcal Experience and I would like to give it a try. Looking at the Metcal/Oki site I see several product families such as MFR110, MX500, etc. Some have the classic Metcal smooth look and other have the Oki 'radiator' look.

<http://www.okinternational.com/metcal/english/globalnavigation/products/hand-soldering-systems>

Do all these products use the Metcal RF technology? Are their tips interchangeable? What are the difference between them? Which would you recommend (I don't need more than one port, will use occasionally on PCB and SMD, non production environment, US market).

Thanks,  
Z.

 Logged


Drain the swamp.

**quarros**

Regular Contributor



Posts: 144

Country: 

 **Re: What Metcal?**

« Reply #1 on: November 05, 2013, 02:47:28 am »

Just a suggestion but if you want to try it out "the feeling", than right now the old MX500 series are your best option. It can be bought relative cheaply on eBay and you can sold it with practically no, or very little loss.

As far as I know the MX series are the original Metcal design and the tips with little exceptions are interchangeable between stations in the MX series. The MFR, PS series are designed by OKI and use different tip set which are not interchangeable with the MX series tips.

Tips For the MX Series:

<http://www.okinternational.com/metcal/english/globalnavigation/products/hand-soldering->

[systems/tips-and-cartridges/mx-cartridges](#)

And the station I talked about: [http://www.okinternational.com/Hand\\_Soldering\\_Systems/id-MX-500P-11-R/Power\\_supply\\_for\\_MX-500\\_Series\\_110V](http://www.okinternational.com/Hand_Soldering_Systems/id-MX-500P-11-R/Power_supply_for_MX-500_Series_110V)

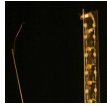
*(Mike post made me realize I was unclear/misleading with my sentence.... Now clarified. Sorry for that. I'm not a native English speaker)*

« Last Edit: November 05, 2013, 07:26:46 am by quarros »


 Logged

### mikeselectricstuff

Super Contributor



Posts: 11500

Country: 



### Re: What Metcal?

« Reply #2 on: November 05, 2013, 03:45:30 am »

There are 2 types -470KHz and 13.56MHz (MX series). Former use DIN connectors, latter F-type coax. Tips are not interchangeable.

Can't comment on relative performance but the MX has a much wider range of tips. Also look at Thermaltronics who make Metcal clones with compatible tips

 Logged


**Youtube channel:** Taking wierd stuff apart. Very apart.  
**Mike's Electric Stuff:** High voltage, vintage electronics etc.  
**Day Job:** Mostly LEDs

### zapta

Super Contributor



Posts: 6004

Country: 

### Re: What Metcal?

« Reply #3 on: November 05, 2013, 05:07:21 pm »

Thanks guys. I will start hunting for a MX500 pieces and/or system.

I prefer the newer stand that has room for the coiled wire style head cleaner.

 Logged

Drain the swamp.

### mamalala

Supporter



Posts: 777

Country: 

### Re: What Metcal?

« Reply #4 on: November 06, 2013, 02:17:27 am »

You can also look for a STSS-PS2V or STSS-PS2E unit. These are the predecessor to the MX500 and work with the same accesoires, but are often a little bit cheaper. There is an even older unit, the RFG30, but i rarely see them on eBay. If you feel like it, you can also build your own RF supply unit.

As for the handpiece, the MX-RM3E is the older one, the newer equivalent is the MX-H1-AV. Both use the same cartridges. Regular solder cartridges are the STTC, speciality/rework cartridges are the SMTC. You will find lots of used and new cartridges on eBay, quite often whole sets for cheap. But be aware that most of them are from the US, and some sellers have strange ideas about shipping costs. I have seen single cartridges go for like 10 bucks, but then 40 or 50 bucks just for shipping.

Greetings,

Chris


 Logged

### zapta

Super Contributor



Posts: 6004

Country: 

### Re: What Metcal?

« Reply #5 on: November 06, 2013, 05:01:08 am »

**Quote from: mamalala on November 06, 2013, 02:17:27 am**

You can also look for a STSS-PS2V or STSS-PS2E unit. These are the predecessor to the MX500 and work with the same accesoires, but are often a little bit cheaper. There is an even older unit, the RFG30, but i rarely see them on eBay. If you feel like it, you can also build your own RF supply unit.

As for the handpiece, the MX-RM3E is the older one, the newer equivalent is the MX-H1-AV. Both use the same cartridges. Regular solder cartridges are the STTC, speciality/rework cartridges are the SMTC. You will find lots of used and new cartridges on eBay, quite often whole sets for cheap. But be aware that most of them are from the US, and some sellers have strange ideas about shipping costs. I have seen single cartridges go for like 10 bucks, but then 40 or 50 bucks just for shipping.

Greetings,

Chris

Thanks Chris. Looks like the expensive part is the power supply so possibly I will get a used power supply and a new handle + base. For example this one <http://amzn.com/B001BY4848> (saw other bases with no room for the curly wire thing, but I like it more than wet sponge).


Drain the swamp.


 **mamalala**

Supporter



Posts: 777

Country: 

 **Re: What Metcal?**

« Reply #6 on: November 06, 2013, 05:42:04 am »

**Quote from: zapta on November 06, 2013, 05:01:08 am**

Thanks Chris. Looks like the expensive part is the power supply so possibly I will get a used power supply and a new handle + base. For example this one <http://amzn.com/B001BY4848> (saw other bases with no room for the curly wire thing, but I like it more than wet sponge).

Don't get fixed on a stand that has a compartment for the brass-wool thingy. You can always have that in an extra holder.

Here's an auction for just the handpiece:

<http://www.ebay.de/itm/Metcal-Handle-tip-holder-MX-RM3E-/231082513593>

Here is a simple stand, although the shipping costs are just silly:

<http://www.ebay.de/itm/Metcal-Soldering-Desliding-Iron-Stand-For-3-4-Diameter-Irons-/251370187580>

Here's a tip holder:

<http://www.ebay.de/itm/METCAL-STSS-TSTAND-Tip-Stand-for-use-with-MX-500-SP200-Systems-/230882005794>

Here's a complete STSS-PS2V-02, with stand and handpiece: (the -02 is the 230V version, look out for -01 if you need 115V mains):

<http://www.ebay.de/itm/Metcal-Smartheat-Soldering-System-Model-STSS-PS2V-02-230V-AC-Input-Tested-/271308986192>

Here just a supply unit, but for 115V:

<http://www.ebay.de/itm/Metcal-RFG-30-Soldering-Station-Power-Unit-STSS-002-TESTED-/310770146188>

If you want to save a few bucks, it's really worth to wait a while for these things to pop up on eBay for cheap. Especially the STSS-PS2V or PS2E pop up quite often on eBay. They are pretty solid units and easy to repair (and so is the MX500 unit). They use an obsolete FET for the driver, but that can be replaced (with minor circuit modifications) to use a modern FET as driver. The later MX500 units even have a regular FET there already.

And just in case, here's the thread about my DIY supply unit for the 13.56 MHz system:

<https://www.eevblog.com/forum/projects/diy-metcal-13-56-mhz-rf-supply/>

Also note that it is possible to use other stands, for example I use a cheapie Ayoue stand. Does not fit perfectly, but it does the job just OK.

Greetings,


Chris

 **zapta**

Super Contributor



Posts: 6004

Country: 

 **Re: What Metcal?**

« Reply #7 on: November 08, 2013, 02:27:28 pm »

Hi Chris,

Thanks for the info. Good pointers. I am trying to focus on a MX500 and in good condition. It is not urgent so I can wait for a good deal.

My current Weller solder iron has a separate brass wool thingy and between it, the solder base and the power supply it's a hassle to move it in and out the drawer (I use my home office for other things as well) so am trying to simplify things.

What is the status of your RF power generator project, do you expect it to have the same performance

and quality as a MX500? Will it be more compact and smaller? Will it be available somehow (preferably preassembled, RF can be tricky)?

 Logged

Drain the swamp.

**grenert**

Frequent Contributor




Posts: 446

**mamalala**

Supporter



Posts: 777


Country: 

 **Re: What Metcal?**

« Reply #8 on: November 08, 2013, 02:38:49 pm »

One nice thing about the "official" Metcal stands is they have versions that put the tip to sleep when placed there. No worries about trashing your tip during inactivity. I actually upgraded my PS2E setup with a more modern stand to get that benefit.

 Logged

 **Re: What Metcal?**

« Reply #9 on: November 09, 2013, 03:16:51 am »

**Quote from: zapta on November 08, 2013, 02:27:28 pm**

What is the status of your RF power generator project, do you expect it to have the same performance and quality as a MX500? Will it be more compact and smaller? Will it be available somehow (preferably preassembled, RF can be tricky)?

Hi zapta,

the status is that it works well so far. Since i don't have MX500, i can't directly compare it. However, it is a bit more performant than the STSS-PS2V that i have (and the MX500 is also a bit more powerful than the PS2V), so i would think they are performing roughly the same.

It is smaller, with a big heatsink the block is about 10cm x 10cm x 10cm in size (without enclosure), if you go for an external power supply (simple transformer or modified laptop supply brick). If you want it "all in one" it would be bigger by the amount of space needed for that.

Currently i have no boards left, and in any case, i'm likely not going to sell ready assembled units.

Since you are in the US, you should be able to get a used MX500 or PS2E/PS2V, including a RM3E handle and stand, for a low price money, as there are plenty of units available on the US eBay.

Greetings,

Chris

 Logged

**zapta**

Super Contributor



Posts: 6004

Country: 

 **Re: What Metcal?**

« Reply #10 on: November 11, 2013, 01:42:05 pm »

Chris, I followed your advice and scored a used MX500P power supply on ebay.

Am looking for a stand and a hand piece. I plan buy new since this is cheaper than the power supply. Amazon has this one <http://amzn.com/B001BY4848> and I like the integrated metal wool thing. Is it a reasonable choice for electronic work? I am not familiar with Metcal handpiece models.

 Logged


Drain the swamp.

**mamalala**

Supporter



Posts: 777

Country: 

 **Re: What Metcal?**

« Reply #11 on: November 11, 2013, 08:16:08 pm »

**Quote from: zapta on November 11, 2013, 01:42:05 pm**

Chris, I followed your advice and scored a used MX500P power supply on ebay.

Am looking for a stand and a hand piece. I plan buy new since this is cheaper than the power supply. Amazon has this one <http://amzn.com/B001BY4848> and I like the integrated metal wool thing. Is it a reasonable choice for electronic work? I am not familiar with Metcal handpiece models.

It's the MX-RM3E handpiece, pretty much the standard. The newer version would be the MX-H1-AV, which is basically the same handpiece, just made of metal and with a replaceable grip at the front. There is an ultra-fine version of that as well, IIRC, but that goes more into speciality stuff. The one you selected will be perfectly fine for electronics work.

Be aware that usually there is no tip-cartridge included, so you have to get some. Personally, i prefer the STTC-126 cartridge. It is a fine point tip, but with a 30° bent tip. This basically combines a small pointed tip with something that can be used like a chisel tip if needed:

<http://www.ebay.de/itm/291010830853>

A small-to-medium sized chisel tip would be the STTC-137: <http://www.ebay.de/itm/181220313037>  
(Be aware that there is also an STTC-137P, which has a different tip geometry)


In general it is worthwhile to grab tips from eBay, since very often they are much cheaper there.

Greetings,

Chris

Edit: Generally you can stick to the -1XX type of cartridges, 700°F. The -0XX would be the same in geometry, but for 600°F. But unless you have sensitive stuff to work on, the -1XX will be just fine.

« Last Edit: November 11, 2013, 08:19:28 pm by mamalala »

 Logged

 **zapta**

Super Contributor



Posts: 6004

Country: 

 **Re: What Metcal?**

« Reply #12 on: November 24, 2013, 02:27:22 pm »

I got the Metcal MX500 setup and working and am very impressed. This is the first time I see a Metcal in person, most of the solder irons I used so far were Wellers. My configuration include a used MX500P from ebay (a European model with the internal jumpers changed to 110VAC), this base and handpiece from amazon <http://amzn.com/B001BY4848> (does not come with a tip) , a STTC-122 tip and a STTC-125 tip on order.

The power supply is built like a Russian tank, made of cast metal and built to last. The components inside are easily available through-hole (no fancy microcontroller, etc), the circuit is straight forward (schematic and description are available online) and I even managed to take it apart and fix the green LED that did not work. Operation is very simple, an on/off switch, an A/B switch for the two power outputs, a hidden setup screw to disable the auto shutoff (not using it), and temperature control by replacing the tips (which means that calibration is never required).

The handpiece is super light, cable is smooth and flexible (looks like a rubber tube), the tip is short and close to the handle which makes it easy to control. Tips are easy to replace (just pull out), the base is wide and well constructed, it include place holders for few tips and a magnet that reduce the tip temperature while 'parked'. The range of available tips is amazing and many are available on ebay for a more reasonable price (the tips are expensive compared to other units I have used).

Soldering with it is really enjoyable, it transfers the heat and melts the solder like butter. I expected a good product but it exceeded my expectations.

Cons:

- Unit and tip price (got used on ebay to mitigate)
- Slight hamming (I tightened the internal 4 screws that hold the transformer and it is much better now).
- Big an heavy (I actually like it this way, it sit stable on the desk, and has a hidden handle to carry it around)
- No temperature setting (I had it on my last Weller and did not know how to set it up so left it on 700F).
- The main switch is on the transformer's secondary, so some power consumption even when powered off (yak)

« Last Edit: November 24, 2013, 05:26:35 pm by zapta »

 Logged


Drain the swamp.

 **JJalling**

Supporter



Posts: 207

Country: 

 **Re: What Metcal?**

« Reply #13 on: November 25, 2013, 11:40:47 pm »

**Quote from: zapta on November 24, 2013, 02:27:22 pm**

...

- The main switch is on the transformer's secondary, so some power consumption even when powered off (yak)

I have modified mine, so the switch is now on the primary side of the transformer - stupid design.


BR Jonas

**London Lad**

Regular Contributor




Posts: 178

Country:  **Re: What Metcal?**« **Reply #14 on:** November 25, 2013, 11:46:20 pm »

I think its because if you pull a tip out with the power on (and you will :-)) the output latches off till you cycle the power switch.

The new 5000 stations now switch the output back on back on automatically after a tip change

 Logged **JJalling**

Supporter



Posts: 207

Country:  **Re: What Metcal?**« **Reply #15 on:** November 26, 2013, 12:22:38 am »**Quote from: London Lad on November 25, 2013, 11:46:20 pm**

I think its because if you pull a tip out with the power on (and you will :-)) the output latches off till you cycle the power switch.

The new 5000 stations now switch the output back on back on automatically after a tip change

But what is the purpose of having the switch on the secondary side of the transformer instead of on the primary side?

Are there any benefits?


BR Jonas

 Logged **London Lad**

Regular Contributor



Posts: 178

Country:  **Re: What Metcal?**« **Reply #16 on:** November 26, 2013, 01:38:02 am »


Maybe to prevent you keep whacking the high current draw at start up and spiking your bench mains? I'm guessing its a big E core transformer in there?

 Logged **JJalling**

Supporter



Posts: 207

Country:  **Re: What Metcal?**« **Reply #17 on:** November 26, 2013, 01:50:57 am »**Quote from: London Lad on November 26, 2013, 01:38:02 am**

Maybe to prevent you keep whacking the high current draw at start up and spiking your bench mains? I'm guessing its a big E core transformer in there?

Hmm.. Makes sense.

And yes you are right.


BR Jonas

 Logged **zapta**

Super Contributor



Posts: 6004

Country:  **Re: What Metcal?**« **Reply #18 on:** November 26, 2013, 03:51:11 am »**Quote from: JJalling on November 25, 2013, 11:40:47 pm**

I have modified mine, so the switch is now on the primary side of the transformer - stupid design.

BR Jonas

Good idea. When you do that, the auto shutdown function turns off the LEDs but does not turn off the primary side. Would be nice to have a third LED that indicates the primary status (or use the transformer's humming for that purpose ;-)).

 Logged

Drain the swamp.

**calexanian**

Super Contributor


 Posts: 1842  
 Country: 

 **Re: What Metcal?**

« Reply #19 on: November 30, 2013, 07:11:40 pm »

I use a mx500 as my daily iron. I have had nothing but luck with it over the last few years and the tips really last a long time. I do not use the brass bush like they recomend. Just the sponge and I have tips that I use daily that are a couple years old and still work fine. Worth it at twice the price. I still have a weller wptc at the next station over when I have to do production at speed with big through hole stuff, but sometimes when I am lazy I just shove a big tip in the metcal and use it and it keeps up enough.

Logged

 Charles Alexanian  
 Alex-Tronix Control Systems

 **AndersAnd**

Frequent Contributor


 Posts: 568  
 Country: 

 **Re: What Metcal?**

« Reply #20 on: December 01, 2013, 11:19:57 am »

I just noticed Metcal will be releasing an all new Metcal MX500 later in December.



40 W, dual port (switchable like the old MX-500 + MX-5000) and now with an universal mains input (most likely SMPS), a power display like the MX5000/MX5200 series and adjustable power save timer.

Confusing to be reusing the name of the old MX500.

New MX500: <http://www.metcal.com/metcal/english/globalnavigation/products/hand-soldering-systems/systems/dual-port-switchable/mx-500-series>





Same case design as the more powerful 80 Watt MX-5200 Dual Port Simultaneous power supply, but lighter and smaller.

#### New MX-500

Power Supply Dimensions w x d x h 12.1cm (4.8") x 12.1cm (4.8") x 22.2cm (8.8")

Weight of the power supply: 2.65 Kg (5.85 lbs)

#### MX-5200

Power Supply Dimensions w x d x h 12.1cm (4.8") x 13.0cm (5.1") x 23.5cm (9.3")

Weight of the power supply: 3.35 kg (7.4 lbs)

Dimensions for New MX-500 are only slightly smaller than for MX-5200, so it seems strange to not just reuse the casing.

MX-5200 system:



**Quote from: mamalala on November 11, 2013, 08:16:08 pm**

It's the MX-RM3E handpiece, pretty much the standard. The newer version would be the MX-H1-AV, which is basically the same handpiece, just made of metal and with a replaceable grip at the front. There is an ultra-fine version of that as well, IIRC, but that goes more into speciality stuff. The one you selected will be perfectly fine for electronics work.

The new MX500 systems will also come with the original plastic MX-RM3E used by the old MX500 series, instead of the newer alloy MX-H1-AV / MX-H2-UF from the MX5000/MX5200 series.

But the kits with talon or desoldering gun will come with the new versions from the MX5000/MX5200 series).

Metcal are also releasing a new HCT2-120 Digital Hot Air Pencil

[http://www.metcal.com/Convection\\_Rework\\_System/id-HCT2-120/NEW\\_HCT2-120\\_Digital\\_Hot\\_Air\\_Pencil](http://www.metcal.com/Convection_Rework_System/id-HCT2-120/NEW_HCT2-120_Digital_Hot_Air_Pencil)



## New Metcal HCT2-120 Digital Hot Air Pencil



« Last Edit: December 02, 2013, 10:13:37 am by AndersAnd »

Logged

### mikeselectricstuff

Super Contributor



Posts: 11500

Country:



### Re: What Metcal?

« Reply #21 on: December 01, 2013, 11:49:32 am »

So they just renamed the MX-5000 to "New MX-500"  
WTF is the point of that ?

Logged

**Youtube channel:** Taking wierd stuff apart. Very apart.  
**Mike's Electric Stuff:** High voltage, vintage electronics etc.  
**Day Job:** Mostly LEDs

### AndersAnd

Frequent Contributor



Posts: 568

Country:

### Re: What Metcal?

« Reply #22 on: December 01, 2013, 12:25:10 pm »

**Quote from: mikeselectricstuff on December 01, 2013, 11:49:32 am**

So they just renamed the MX-5000 to "New MX-500"  
WTF is the point of that ?

Not quite. MX-5000 and MX-5200 both has 80 W output power, while the new MX-500 only has 40 W output power, just like the old MX-500 had.

MX-500 and MX-5000 are both "Dual Port Switchable", so the new MX-500 Power Supply is basically an MX-5000 Power Supply with half the output power.

MX-5200 is the "Dual Port Simultaneous" version of MX-5000.

The systems are different too, as MX-500 systems comes with the old plastic MX-RM3E handpiece used by the old MX-500 series, while MX-5000/MX-5200 comes with the newer alloy MX-H1-AV and/or the UltraFine MX-H2-UF handpieces. The New MX-500 system tweezer and desoldering gun are the new types used for the MX-5000/MX-5200 systems. The old MX-500 had different tweezer and desoldering gun. The original tweezer used by the old MX-500 used different tips than the new tweezer used by MX-5000/MX-5200.

« Last Edit: December 01, 2013, 12:55:57 pm by AndersAnd »

Logged

### AndersAnd

Frequent Contributor



Posts: 568

Country:

### Re: What Metcal?

« Reply #23 on: December 01, 2013, 12:56:06 pm »

The Thermaltronics TMT-9000 (Metcal MX clone) also has 40 W output power:

<http://www.thermaltronics.com/tmt-9000s.php>

So maybe Metcal releases the new MX-500 to compete on price with the Thermaltronics TMT-9000S. Both are 40 W and both are "Dual Port Switchable" and the Thermaltronics handpiece is plastic too, however unlike all the new Metcal MX soldering stations, Thermaltronics soldering stations aren't universal mains voltages devices, but made in two different mains voltage versions: 100-110 VAC and 220-240 VAC.

And of course also to compete with mamalala's **DIY Metcal 13.56 MHz RF Supply** 🤖  
<https://www.eevblog.com/forum/projects/diy-metcal-13-56-mhz-rf-supply/>

Thermaltronics soldering systems are also sold rebranded as EasyBraid:  
<http://www.easybraidco.com/hand-soldering>  
EasyBraid soldering stations are sold by DigiKey among others:  
<http://www.digikey.com/Suppliers/us/Easy-Braid.page>

« Last Edit: December 01, 2013, 02:19:40 pm by AndersAnd »

Logged

zapta

Super Contributor



Posts: 6004

Country:

**Re: What Metcal?**

« Reply #24 on: December 01, 2013, 05:11:51 pm »

Is the Thermaltronics TMT-9000 compatible Metcal MX500 tips and vice versa?

Logged

Drain the swamp.

Pages: [1] 2 3 4 5 6 7 Next All **Go Up**

PRINT SEARCH  
« previous next »

Share me



EEVblog Electronics Community Forum » Products » Other Equipment & Products » What Metcal?

Jump to: => Other Equipment & Products go



# BUDGET MULTIMETERS !!

ANENG, UNI-T and more...



[EEVblog Main Site](#)

[EEVblog on Youtube](#)

[EEVblog on Twitter](#)

[EEVblog on Facebook](#)

SMF 2.0.15 | SMF © 2017, Simple Machines  
Simple Audio Video Embedder  
SMFAds for Free Forums  
XHTML RSS Mobile WAP2