SLOT TECH MAGAZINE

Slot Machine Technology for the North American Gaming Industry

May 2009

Twist of Fate

Problems Solved

Command™ Strips for Touch Sensors from 3M

Quick and Simple Repairs #50

Slot Tech Magazine

$10.00

The New Las Vegas Strip.

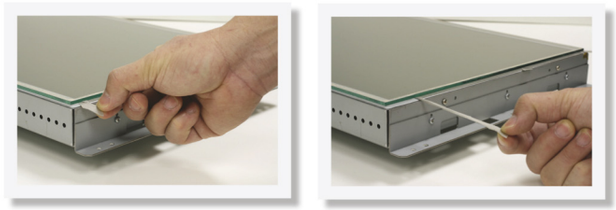
Command™ Strips for Touch Sensors

Quick Removal and Easy Integration

Command Strips for Touch Sensors help save slot technicians time and casinos money with a quick-to-remove and easy-to-integrate solution for touch displays. Once a touch sensor is mounted with Command Strips it takes only seconds to remove a damaged touch sensor or the working sensor from the damaged LCD display, and then only minutes to reintegrate it. Compared to today's 45-60 minute industry average for removing and integrating a touch sensor, that's time and money saved.

Quick to Remove

When a touch sensor needs to be removed, use Command's "stretch release technology" by pulling the "pull tab" at a 90 degree angle so the sensor pops free in seconds. And, these "no mess" strips don't leave an adhesive residue that can be difficult to clean up.



1 Pull Tab at 90 Degrees

Easy to Integrate

Using "peel and stick" Command Strips, a touch sensor can be easily integrated to a display in minutes and quickly put back into service.

1 Apply First Four Strips

2 Apply Next Four Strips

3 Mount The Touch Sensor

Watch Video

See how easy it is to use Command Strips for Touch Sensors to integrate sensors and to remove sensors at www.3m.com/touchstrips. Seeing is believing.

www.3m.com/touch

Command™ Strips

NOTICE: Command™ Strips for Touch Sensors were developed for use with the 3M™ MicroTouch™ System SCT3250EX (previously known as the 3M™ MicroTouch™ ClearTek™ II System). Customers must determine whether Command Strips are suitable for use with their particular touch sensor and in their intended application.

3M

Inside Slot Tech Magazine

May 2009

Randy Fromm

The Command Strips are here!
The Command Strips are here!

I have been sitting on this report for years now. I am finally, after years of being sworn to secrecy, happy to report that 3M's Command Strips is are now available in strips that are specifically manufactured to mount 3M MicroTouch ClearTek II touch sensors to gaming monitors. You've seen advertisements for Command Strips on television. You can use it them to affix a picture hook to the wall and hang a heavy, framed painting. When you want to remove it, you simply pull on a tab and the Command Strip releases itself from the wall without leaving a mark. It's based on the same technology, just formulated in long strips for touch sensors. Starting NOW, no tools will be required to remove and replace a touchscreen when you use the Command Strips. Admit it. How many times have you noticed a dirty monitor screen but just didn't want to hassle with removing the double-sided VHB tape and cleaning off the gummy residue it leaves behind? Of course, it will take a while to retrofit your entire casino floor but I highly recommend that you order a mess of strips right now so you can have them on hand. Believe me, you will never want to see a roll of VHB again once you try this new technique.

Gary Platt Manufacturing, makers of the best casino seating in the world, have thrown Slot Tech Magazine a bone and have placed an order to run a few ads with us. Yes, they realize that there is nothing electronic to repair in a casino chair. It is a SUPPORT issue. They support Slot Tech Magazine and what we're trying to accomplish. I am begging you, when you are considering replacement seating for your casino, please consider Gary Platt Manufacturing and please mention that you saw their ad in Slot Tech Magazine.

We have another new friend in Endicott Research Group, a manufacturer of inverters for LCD monitors. I am working with them to put together a line of universal replacement inverters for all of the monitors we use in gaming. As much as I enjoy component level repair, backlight inverters are cheap and it generally isn't practical to repair them. We didn't have a chance to finish the project for this month but look to ERG to provide us with a guide to their complete line of replacement inverters in the near future.

That's all for this month. See you at TechFest!

Randy Fromm

Randy Fromm - Publisher

Randy Fromm's
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Here at CI Innovations we make COLD CATHODE REPLACEMENT LAMPS for all LCD MONITORS in all slot machines and video poker machines in your casino. We also make TOUCH SCREENS and protective Mylar sheets for PLAYER TRACKING SYSTEMS that use an LCD display.

See below for the replacement cold cathode lamp parts that we make for various types:

FOR IGT GAMES

#8500- Single cold cathode lamp assembly for IGT NexGen player tracking system 6.2 inch Hitachi LCD #TX16D11VM2CAA

#8560-4 wire touch screen for IGT NexGen player tracking system 6.2" Hitachi LCD #TX16D11VM2CAA

#8610- Protective Mylar sheet with copper tape attached for 6.2" Hitachi LCD in IGT NexGen player tracking system

#8570-6.2 inch Hitachi LCD #TX16D11VM2CAA with 4 wire touch screen for IGT NexGen player tracking system

8480-Single RAW cold cathode lamp for 10 inch LCD monitor in IGT games

#8920- Single RAW cold cathode lamp for 15 inch LCD monitor in IGT games

#9670- Single RAW cold cathode lamp for 15 inch LCD monitor in IGT games

#9290- Single RAW cold cathode lamp for 19 inch LCD monitor in IGT games

FOR BALLY GAMES

#8650- Single cold cathode lamp assembly for Bally IView player tracking system 6.2 inch "IDW" LCD

#8950- Touch screen kit for Bally Iview player tracking system 6.2 inch "IDW" LCD (includes 5 wire touch screen & metal housing)

#9190- Mylar protective sheet (peel & stick) for the touch screen on Bally Iview player tracking system 6.2 inch "IDW" LCD

#9080- Single RAW cold cathode lamp for 19 inch LCD monitor in Bally games

FOR KONAMI GAMES

#8700- Dual cold cathode lamp assembly & 12 volt inverter for Konami belly glass that is edge-lit with cold cathode

#9240- LED edge-lit panel for Konami K2V belly glass cabinet

#9780-"L" shaped cold cathode lamp assembly for Konami 7 inch bonus screen LCD

#8600- Dual cold cathode lamp assembly for Konami slot machine with 17" LCD monitor

FOR WMS (Williams)GAMES

#8520- Triple cold cathode lamp assembly for WMS slot machine with a 18" LCD monitor

#9300- Single RAW cold cathode lamp for WMS games with 19 inch LCD monitor

#8470- Single cold cathode lamp assembly for 6.4" LCD LG #LB064V02 in WMS BlueBird bonus screen

8490-6.4" LCD LG #LB064V02 for WMS Bluebird machines bonus screen (does **NOT** come with touch screen)

FOR ATRONIC GAMES

#8690-Dual cold cathode lamp assembly for Atronic slot machine with 17" LCD monitor

#9790-4 output Piezo cold cathode inverter with cable adapter for 17 inch Atronic E-Motion LCD monitor (includes 5 year warranty)

MISCELLANEOUS

#9220-Bench top Cold Cathode Lamp test unit 110 volt with on/off switch

REPAIR SERVICES FOR COLD CATHODE LMAPS

#8930- Single lamp assembly - extract old CCFL from reflective channel & install new lamp (price includes new cold cathode lamp)

#8880- Dual lamp assemblies - extract old CCFL from reflective channel & install new lamps (price includes new cold cathode lamps)

#8890- Triple lamp assemblies - extract old CCFL from reflective channel & install new lamps (price includes new cold cathode lamps)

For more info or to place an order contact us or one of our distributors

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The New Las Vegas Strip…
Command™ Strips for Touch Sensors from 3M

Slot machine maintenance is no walk in the park, just ask any slot technician. And as a group they would probably say that their least favorite task is removing a damaged touch sensor or a sensor from a broken display. Whether it is slicing through the VHB tape to remove the sensor or cleaning up the sticky adhesive residue before applying another strip of VHB to mount the sensor, it is slow going, messy and they know there has to be a better way…and there is, Command Strips for Touch Sensors from 3M.

Double-sided VHB tape is the industry's preferred adhesive for mounting touch sensors to gaming displays due to its unsurpassed holding power in preventing sensor movement during prolonged player use and over long periods of time. Its aggressive bonding characteristics secure the touch sensor to the display housing so tightly that it creates a nearly unbreakable bond. VHB tape is a product that does its job well, sometimes too well if you have to replace the touch sensor.

As happens on the 24/7, semi-unattended environment of the casino floor players can damage the touch sensor or a LCD can malfunction, which requires slot techs to replace one or the other. In

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either case, the touch sensor must come off and that can be a time consuming and difficult task.

Every slot tech has his or her own method for removing the touch sensor. Some slice the VHB and pry off the sensor; others prefer to pull wire through the VHB to separate the sensor. In both cases, it is time consuming, difficult work.

As a leading manufacturer of touch sensors for the gaming industry, 3M Touch Systems has worked with slot technicians for many years to help train them in effective touch sensor integration and procedures. Time and time again, we heard that removing and reintegrating the touch sensor is their most burdensome task and a more efficient method would make a big difference in their jobs and 3M listens.

Introducing Command™Strips for Touch Sensors from 3M, a new and unique method for quick removal and easy integration of touch sensors. Based on Command's patented "stretch release" adhesive technology made popular in home and office hang and remove applications, these "peel and stick" strips offer a cost-effective and time-saving solution to the existing VHB integration method.

Once a touch sensor is mounted, by pulling the Command Strips tab its takes only seconds to remove a damaged touch sensor or the working sensor from the damaged display, and then using the self-adhesive foam strips it takes only minutes to reintegrate it. Compared to today's 45-60 minute industry average for removing and integrating a touch sensor, that's time and money saved.

To really appreciate the ease of using Command Strips for Touch Sensors you need to try them. You'll find there are no tools required, no adhesive residue to clean, and no possible damage to the touch screen or display.

To get a Command Strips Sample Kit (enough strips to mount a 20" touch sensor), either contact your parts distributor, call 3M at 888-659-1080, or register at ww.3m.com/touchstrips.

Note: Command Strips for Touch Sensors were developed for use with the 3M™MicroTouch™System SCT3250EX (formerly, 3M™MicroTouch™ClearTek™II System). Customers must determine whether Command Strips are suitable for use with their particular touch sensor and in their intended application. **- STM**

New Feature (if you want it)!

Let's try some free classified ads for casinos and slot techs. This can be for almost anything you want to get rid of (hoppers, CRT monitors, old conversions, etc.).

OR

Maybe it's something that you're looking for. Need an old slot glass? Maybe someone has what you're looking for. You can advertise for just about anything EXCEPT help wanted. I will not accept ads that seek to hire a slot tech. I WILL accept an ad from a slot tech that's looking for a job, however. If you are in the unenviable position of being laid off, I will be happy to publish an ad for you.

We'll see how it goes.

e-mail classified@slot-techs.com

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Twist of Fate

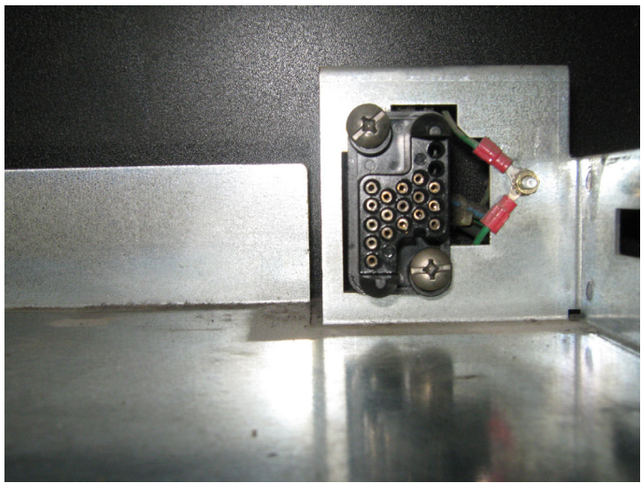
By James Borg

I had noticed that the screen on one of the IGT machines had become somewhat large horizontally for quite a few days, but since I was partially rushed off my feet and wasn't quite sure how to tackle this monitor, I sort of let it be as it was. It was still in operation which was the bottom line and I had more urgent matters to see to, like a completely FUBAR machine for instance. The monitor showed a margin of pincushion effect on it but not too bad. However, things on it had gone from bad to worse after some work had been done on the machine and it ended up going all green. To make matters worse, the touch screen wasn't responding as desired either so it was time to put my thinking cap on at roll up my sleeves.

I decided to start off with the easy job first. That's the color problem. On looking at the screen I could see that most of it was really green, there was also some blue visible but no red at all to be seen, nowhere. A charging bull on the warpath would completely ignore it without even raising an eyebrow.

Just for a kick, I hit the screen to see if something would happen and something did happen. Actually three things happened. One was that I got a funny look from a client sat close by, the second was that I hurt my hand and the third was that for just a brief moment, there was a flash of red. I hit it again and another red flash appeared and disappeared again. Good. Very good. Just a dry joint.

Why is it that most technicians I know (including the undersigned) jump to conclusions? I 'knew' that this kind of fault shouldn't be too much of a challenge to sink my teeth into but it should set me off in high spirits for the real fault at



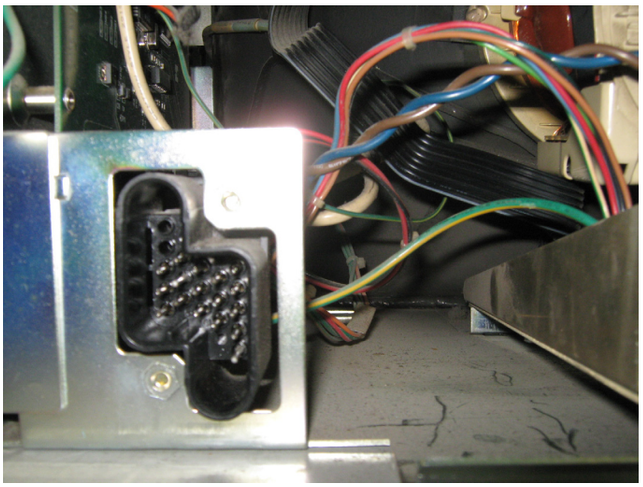


Figure 1 (l) and figure 2 (r) - This is the Amp Metrimate connector used to connect the monitor to the rest of the slot machine. In addition to the AC power for the monitor, the connector also carries the red, green and blue color signals (video) and the sync signals.

hand, namely the horizontal size. With that very positive thought in mind, I pulled the monitor out of the machine and started the trip to the workshop.

The monitor is a Ceronix model 1793. It was one of those units with little modules (called PRAs which stands for "precision resistor array" but in fact they contain other components as well) soldered vertically on to the CRT neck board making up each individual color stage. I didn't want to think about the negative aspect of this since I very much doubt if I had any new PRAs in the spares in the workshop. If the worse was to come to the worst, I would have had to pull out a similar one from a FUBAR monitor and hope that the one I pulled out wasn't FUBAR itself which would complicate matters somewhat.

Editor's Note: There is no company I know of that can top Ceronix when it comes to obtaining replacements. Service is fast and extremely friendly. Ceronix replacement parts are dirt cheap. You can order anything you want from their website at ceronix.com. The PRAs are especially lightweight and can be sent by Air Express anywhere in the world at a very cheap cost.

Cutting the cable ties off from the CRT board to expose the print and the connections for a good inspection didn't offer any decent conclusions as I couldn't see anything wrong. I got my trusty magnifying glass out and scanned each and every solder joint for a possible dry or fractured connection. The result was very disappointing. I was really hoping to find that elusive dry solder joint as otherwise the thought of going into detailed fault finding seemed quite daunting at the time. The fact that the electronics on these monitors is quite complex to say the least, doesn't help the situation at all. Reason being that this was supposed to be after all a 'quickie', a morale booster, the calm before the storm perhaps? A fault which isn't a 'quickie' I can handle since I get mentally tuned for it from the very start and won't leave a stone unturned till I manage to locate the fault. With nothing to lose, I still freshly spotted some areas just for the sake of using the soldering iron since I had turned the heat on. No dry joints there meant that the fault wasn't a dry joint. How's that for logic? It could be the case that the CRT socket was dirty, developed an oxide, or was perhaps slightly out of place so I pulled the whole neck board out from the tube and sprayed some contact cleaner into it and pressed it firmly back. I mustn't also ignore the fact that the CRT could be (Shock and some

horror pitched in!) faulty itself but I didn't want to kill it off just like that. I don't normally kill off a CRT and I only do it once I'm perfectly sure that it's gone to a point of no return, to meet its maker in the happy hunting ground. Apart from all that, it's also a pain in the nether regions to replace.

It was a good time to go and check out the color again so the trip back to the machine commenced. The walk seemed endless somehow. I was lost in thoughts and not happy at all. I have to admit that I had bad vibes about this. I didn't see the 'hoped for' bad solder joint anywhere so this exercise could in fact prove to be only a complete waste of time. Pushing the monitor all the way home into the AMP Metrimate socket making up the connection to the outside world was a piece of cake.

This connection feeds the monitor the supply and the separate RGB signals and other control lines. Turning on the machine and going through its start up sequence, different colors flashed for a while but only GREEN and BLUE were seen. No RED. Ouch! What a disappointment. That means the monitor's got to go back to the workshop and I would have to pull the circuit diagram out to see what's going on. The manual I have is pretty neat, complicated to say the least, but neat. My morale sort of hit the deck when I starting flicking through the video section.

A quick look at the Troubleshooting section wouldn't go amiss and low and behold, there was a section where 'Missing Color' was discussed in depth. It went into great detail specifying voltages and test points and measurements and K-Film and it made an interesting read. However, none of that helped me a great deal as I couldn't find anything wrong with the monitor. Something was definitely wrong as one of my colors was definitely missing but what?

I didn't have a suitable signal to feed the monitor with in the workshop so that was a bit of a disadvantage really. Out of pure chance, I happened to look at the front of the screen and there was a faint white raster. White? Did I just see white? Just hold your horses for a few moments. If it's white then how come there isn't any RED color showing from the game? A white raster means that all the three guns are working properly along with most of the video circuitry. This led me to believe that there could something external to the monitor that was upsetting the output to the screen. Just to make sure that I was not going to start on a wild goose chase, I injected a low pulsating voltage just before the color drivers individually. True enough, all the three colors showed on the screen. I had to sigh as that was a load off my mind. Also, that proved the CRT was fine. I was pretty sure that the tube was not the culprit but having said that, any-

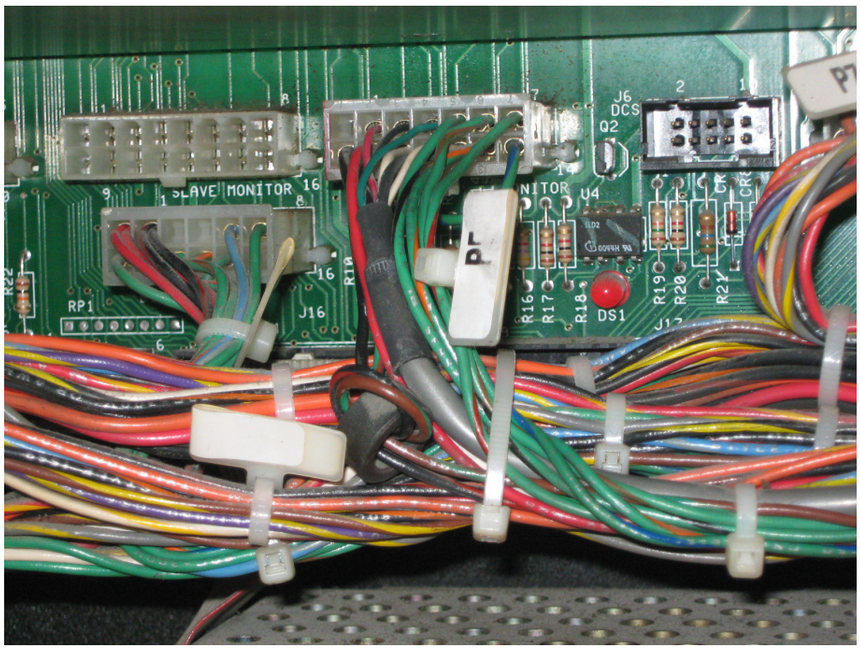


Figure 3 - The monitor connection to the backplane

thing is really possible. I think my biggest relief was the fact that I didn't have to go into great detail into the video section as it's like a maze in there. Where you end up is anyone's guess and the worst thing to happen would be that I'd get totally lost and remain in there forever, only to be found as a skeleton in a corner with my multi-meter in one hand and the schematic in the other by another unfortunately technician who ended up following my path and getting lost himself.

What if the connector at the back of the monitor that connects the monitor to the machine itself was faulty on one color pin? I had to breathe a sigh of relief at that point as things weren't as bad as I originally thought they were. A visual

showed that it was fine. Resistance checks were all the same for all the colors and so did the voltages when compared between each other. It was all leading me to conclude that the problem wasn't at all from the monitor but from the machine itself.

The next stage of the operation was to go to the machine and check out the connector to the monitor there (Fig. 1). Utilizing the metal body as the ground, I poked each of the pins relating to each color and only the GREEN and the BLUE gave me a resistance reading. The RED was infinite (Yippeee). Tracing from the connector led me to the backplane and to a connector, P5.

A good idea was to check the wires between this connector and the direct feed to the monitor (Fig. 1). All the three wires concerning me were arriving nicely up there. The problem was obviously before P5. It could be something to do with the backplane itself and eventually originating from the motherboard. Mega Ouch! That thought made me shudder, as if somebody just walked over my grave. Another thought struck me before I pushed the red panic button though. What if . . . Just what if the bad contact is not a bad contact as such, but the motherboard not making proper contact to the backplane? The motherboard seats in a drawer-like unit and the whole drawer is pushed back and locked, for security purposes obviously. These drawers seem a bit flimsy somehow, a bit shaky and loose. Nice idea to dwell upon. Only way to find out if that's the case was to push the drawer firmly back in place and holding my breath at the same time. Wow! It worked. I don't believe it! I had a resistance reading now on all the color pins at the connector in Fig. 1. Brilliant! Fabulous! Happy days are here again. Just thinking about it though made me feel a bit down since as I had actually originally assumed (or blamed rather) the problem was from the monitor. I was a bit disappointed at myself for taking the wrong road. However on the other hand I was somewhat elated as these Ceronix monitors can be pretty challenging to diagnose and repair. They are wonderful monitors in themselves and in the right frame of mind, they are a pleasure to work on.

Another Editor's Note: There is a wealth of Ceronix troubleshooting information available online (and free) on the Slot Technical Server (my solar-powered file server, sponsored by Ceronix). Just go to slot-tech.com and look in the "Interesting Stuff" sub directory under Ceronix. You will find an invaluabe, step-by-step troubleshooting flowchart, complete with illustrations and typical voltages for each pin of the integrated circuits. The Ceronix monitor troubleshooting system is designed for troubleshooting using just a digital multimeter.

Just to prove that the colors were fine, I pushed the monitor in place and true enough, all the three colors

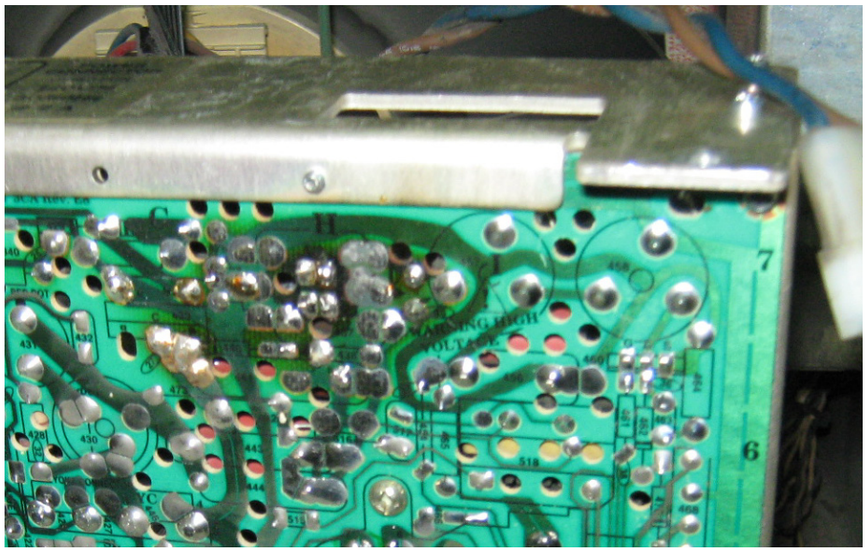
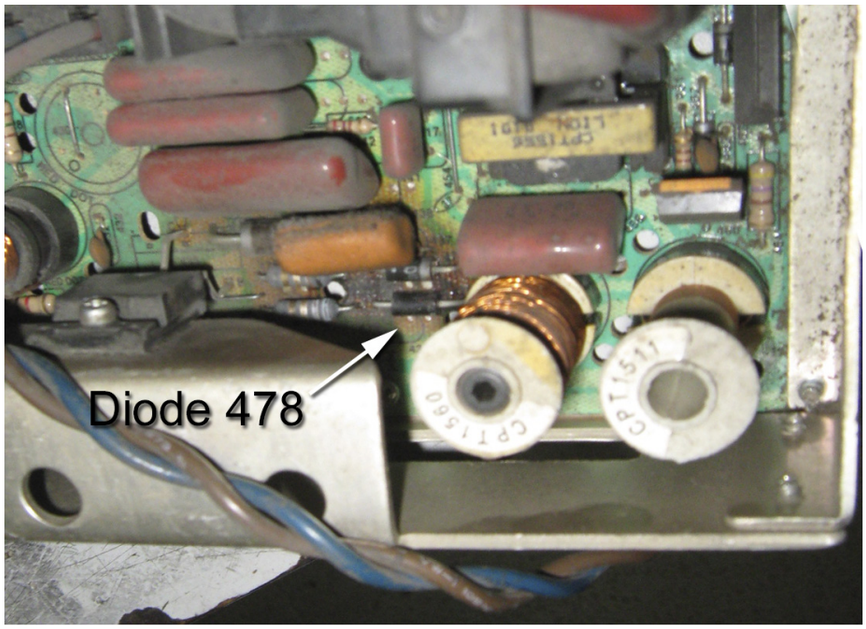


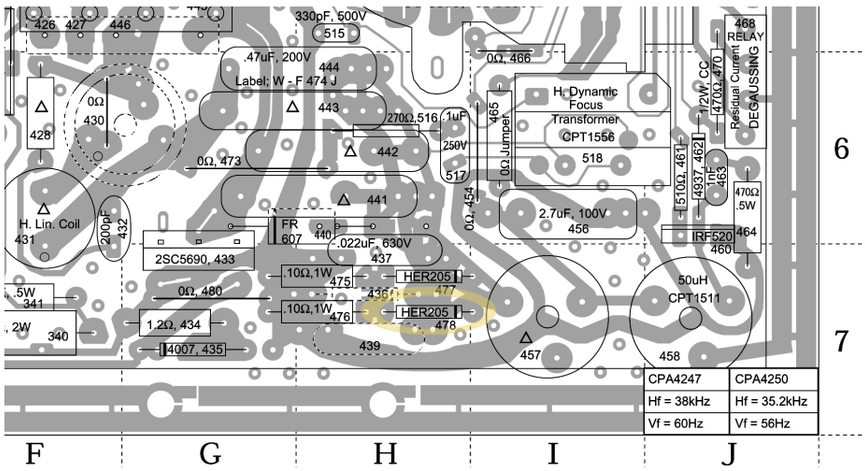
Figure 4 - A brownish area may mean that components have overheated.

were displayed. That was really lovely actually. I didn't realize that I would be so happy to 'see red' again. Whilst in place, all the touch-screen needed was a quick calibration and that was fine too.

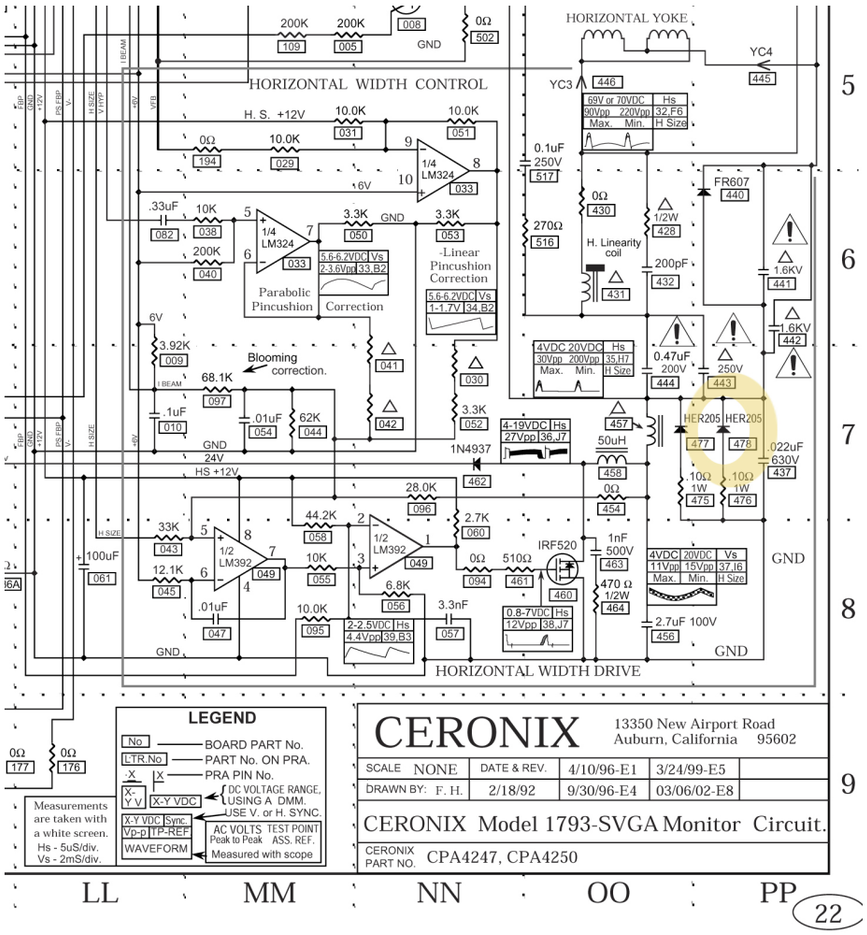
The first fault (the quickie that is) was over and done with. Now is the turn of the second and the difficult one. Come to think of it, if the 'quickie' turned out to be a bugger to repair, who knows just how difficult it's going to be to tackle the width problem? I suppose the schematic has to come out again, along with the monitor from the machine and commence surgery one more time.

A width fault, a pin-cushion fault, a horizontal problem of any kind is nine out of ten related to the line output circuit. That's what we call it here in Malta and in the UK too. Readers may also know this as the "horizontal output" circuit. This circuit is under extreme stress and it's no big secret that many monitors suffer failures in this area during the course of their lifetime. Usually when it's a severe case of the picture being way too wide, the 'horizontal size' adjustment might as well not be there. The pincushion syndrome can be seen in most cases where the size is too wide. Usually, the only adjustments that can be made in such cases would be the 'horizontal shift', but other





than that, it's curtains. A great variety of issues can cause problems on the horizontal circuitry. These could be something to do with the supply lines. It could be a defective line output transformer (The LOPT or "lop-tee" is also called the "flyback transformer") it could be a faulty capacitor, it could also be the horizontal yoke itself (although I don't recall ever having come across a faulty yoke) or a host of other possibilities.



A good approach to this sort of fault is good old fashioned visual inspection. Look for components which have lost their sparkle, their shine. Look for capacitors that have become inflated or leaky. Look out for areas on the printed circuit board (on the solder side) which have gone slightly brownish. This brownish color indicates that a component has become hot. However, don't be misled by this as some components do normally get very hot. It all depends on the design really so this discoloring in certain areas doesn't mean that you can start jumping up and down for joy, not yet anyway.

Components such as diodes can't really be spotted from a mile away if they got too hot, but the cathode 'band' might end up being difficult to see when compared to another diode which hasn't been subjected to overheating. Also, a solder joint which has been subjected to a high temperature won't be as shiny as the others. This incidentally might also lead to a dry joint. All these little things will help out in the location of a faulty component just by looking at the printed circuit board.

I usually practice what I preach and this method allowed me locate this 'difficult' fault in a just few moments.

Being a width problem, the first area checked is around the flyback transformer and it didn't take long to locate which section got too hot. Things started looking up after the 'quickie' issue. It turned out that one of the diodes there (diode 478, an HER205) had taken a beating.

The diode was actually short circuited which upset the circuit somewhat, leading to the picture going wide. This component is a 2A 400V high efficiency rectifier. They don't usually go (not that often anyway) but when they do, they usually create havoc on the picture which can be easily noticed.

This is an extract from the service manual to describe in detail just what happens in the section of the circuit.

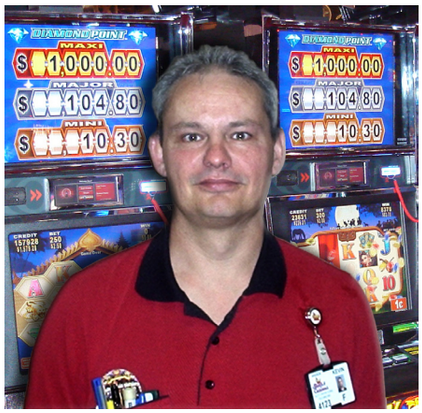
When the MOSFET is on (gate voltage high) current

increases in inductor 458 and when the MOSFET is turned off the current is dumped in to the 24-27V line through diode 462. The magnitude of this current, from the diode modulator, is determined by the duty cycle of the MOSFET which is a function of the control voltage. Diodes 477 and 478 with current equalizing resistors 475 and 476 rectify the flyback waveform present on the GND referenced node of the horizontal tuned circuit. This current is conducted through inductor 457 and integrated by capacitor 456 and then is controlled by the driver circuit. Diodes 477 and 478 are the diode modulator diodes and the forward current which the drive circuit controls is the current which determines the turn on delay of the GND referenced node of the horizontal tuned circuit. An increase in the current of diodes 477 and 478 produces a greater delay in the GND referenced node, and reduces the amplitude of the flyback pulse at this node, which results in an increased horizontal size.

This is precisely what I had when diode 478 went short. This increased current through this shorted component caused a reduction in amplitude of the flyback pulse and hence the greatly increased size of the horizontal width. Thinking about it, the challenging factor of this fault didn't quite match my expectations, but then again it was the 'quickie' which took me for a ride. It's funny how life is full of twists, especially when you least expect them but that's what makes the world go round and the cookie crumbles...until the next twist of fate.

- James Borg
jborg@slot-techs.com

For schematic diagrams, service manuals, drivers, software and more, visit the Slot Technical Department at slot-tech.com
For batch downloads, use ftp. Point your ftp client to slot-tech.com
username=Slot Tech password=kxkvi8



Problems Solved

By Kevin Noble

Atronic e-motion Validation Error

Over the radio a Slot Attendant relayed the message the game was powered down and back up and the game would not come back up. We made our way to the machine and noticed the game was stuck or frozen in the middle of the "Cash Fever" bonus round. We re-powered the game down and the game came up to allow the patron to continue and finish he bonus round. We also could not get into service mode and the reset key would not release this game from its frozen state. Once the bonus round was finished, the game froze up again. The upper monitor had lost the thermometer progressive figures.

Figuring the power off power on repaired the first problem, we decided to try this again. This time it kept displaying the APL initializing and Game initializing error message every ten seconds. The game wanted to establish communication with the progressive but acted like it was missing. None of the progressive figures were disrupted after this game which told me the daisy chain was still connected. After about five minutes of this orchestrated music (you know when the Atronic makes that noise when games go online and offline) the game finally went into a Hand Pay Validation error. We checked the CVT to see if the game was online and to perform the CVT force download and nothing happened. We also noticed that the Mikohn display was beginning to go offline. We waited to see if the system would recover but it did not. We cleared the SMIB to see if that would help us establish communication but all it did was zero our meters. We tried the COMM board clear and that did not help either.

The next morning the game was sitting there waiting for us to continue on where we left off. We started with a new communication board and another COMM board clear but that did not help. We were in the same boat as the night before. I asked AGCO to come and remove the seals so I could try a RAM clear. I RAM cleared the board, the game allowed me to set the options. I pulled open the cherry switch on the game and the machine cleared all its options and went into service. The game was bill and ticket tested and ready for AGCO to seal the board. After AGCO arrived and sealed the board, the machine powered up and the whole process of the APL: initialized & Locked: game waiting to initialize started all over again repeating itself every ten seconds. I call AGCO back down to break the seals on the CPU board again but this time I replaced the CPU with another one from the shop. This CPU kept on rebooting itself. I managed to get the options set but ran into a hardware error that would not clear. I went back to the old CPU board just to see if by chance I could get it up and running. I started all over with the Ram clear procedure, optioned the games, and the progressive values on the top monitor came back up. This time before inserting my money and completing the bill and

ticket test, I decided to simulate the AGCO reseal. I decided to just power down the game and allowed the game to reboot itself to see if it would come back in game mode. It did not. I was back to square one just like the other day when Reggie and I started troubleshooting this problem.

I pasted the game on to the next shift and upon my return after my days off the game was up and running. I checked the MEAL book for what was done to repair this problem but there was no mention of any troubleshooting or repairs done to the game. I had to wait until the afternoon shift came in and found out the Multi-media board was replaced and the game RAM cleared and optioned again. This same situation happened to Richard Haddow of Georgian Downs. Richard contacted me on what we did to repair our game and I passed on what we did. Richard tried the exact same procedure but he had to go back and clear the COMM board. After the COMM board was cleared the game went into a "memory failure" after which he proceeded to do a RAM clear. I did receive an e-mail from him notifying me that his game starting displaying the progressive figures again. Thanks for the heads up Richard.

Atronic e-motion Progressive Troubleshooting Tip

Lately, this problem was happening more and more frequently on this bank of progressive games. Only certain games were affected. When talking to the other technicians at our site, they agreed and they noticed that it was only happening to the "B" level software in the progressive games on this bank. I investigated it further and checked the MEAL books and found that "C" level had not one entry of the game freezing or being rebooted. We also determined that most of the time, this error can be reset by powering down the game and powering back up. The catch is that it might take several times before it initializes and comes back online. This is very time consuming and takes a lot of patience.

Atronic e-motion Freezing

This problem originated at Fort Erie Slots and was passed on to me by Nick. We too had a similar issue with the game freezing.

Deal or No Deal (Master) and non-operational service reset key switches syndrome. A simple com board clear was tried first which turned out to be a nightmare. Once the com board was cleared, the progressive info was lost on the overhead signage and game. APL to initialize message appeared. The CPU was replaced which did not correct the issue of hand pays and validation errors. The next step was the backplane board where the BIOS chip is sealed. That was the culprit. If you change it you will be OK. Keep in mind that if the game you are working on is a progressive like here at the Fort, a com board clear followed by a CPU ram clear will have to be done. If you don't follow these instructions, the A Link program needed will not function to set up your progressive settings via dongle and cable.

It took us a long time to figure this out. If items are not set up correctly on the A link program, the tech(s) would have to perform the com board and CPU ram clear steps all over again. There are no shortcuts with this platform. Thanks guys for this information and troubleshooting solution.

BALLY 6000 Not Printing Tickets

During a small internal project at our site to verify the printer software on some games on the gaming floor, one machine all of a sudden stopped printing tickets. I cannot tell you exactly what was done but all of a sudden the game went into manual jackpots. The GEN 1 printer, the printer board, fiber board were all replaced and still in test mode the game would not print a ticket. Next on our list would be a board related problem. Because a RAM clear was the lesser of two evils, Chris decided to RAM clear the existing board but the problem remained. Since the CPU board was already removed from the game he decided to swap the CPU with a good known one. He cleared that board, set all the printer and progressive options and the game came back up but still would not print any tickets. Chris handed me a list of things he did starting with changing the SMIB, printer assembly twice, printer harness, fiber board, and the power supply and still the same result. Chris decided to call Bally and they suggested starting from scratch. Taking Michaels advice, he started from step one again and began with the printer. This time he swapped the printer assembly with another game with the power off. Tested the printer and the ticket started its travel through the head and sat there waiting to be removed. The problem was finally solved. Somebody must have unplugged and plugged the printer back in live from the ribbon cable thus popping the little printer board that sits in the back of the Gen 1 tray.

WMS Video John Wayne Progressive Values Stuck at Base Values and Would Not Increment

Coming in the morning we were handed our "to do" list from the Shift Manager. The list stated that our John Wayne small three game link progressive was currently down. The middle game was not communicating with the link progressive. We arrived at the game and noticed that all three progressive levels were displaying each level's base values while the other two games displayed progressive values which were more realistic. When we opened the game we noticed that the BV had been swapped with another game when the entries started to pile up regarding a BV problem. The BV problem eventually ended up being the progressive display problem handed to us in the morning. In the bottom of the game we swapped data cables on the splitter board to see if there was a broken wire, bad cable or even a bad splitter. We knew that everything was working fine because when we unplugged the cable, the game would disable itself. We next checked the options and all the options seemed to be set correctly. We even checked the pro-

gressive data and the correct figures from the other two games were displayed, but not in the top box monitor. We called WMS gaming and they asked us to try a RAM clear because somehow the communications got messed up and this would help reestablish communication to the top box. We tried the RAM clear and all the progressive figures came back and started to increment correctly with the other two games. We also did our own test on the game just to verify that the middle game also incremented the values.

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Quick & Simple Repairs # 50

By Pat Porath

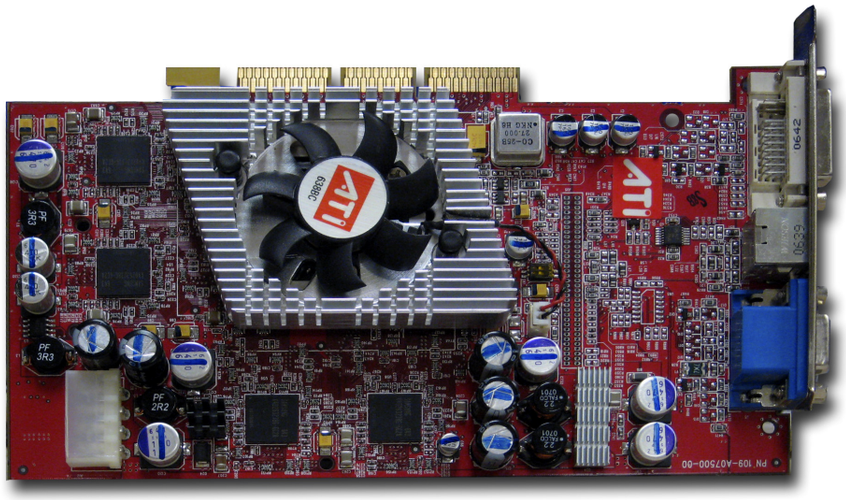
Bally Alfa Reel Winners Reel Problem

While walking to our south shop (we are fortunate enough to have a north and south shop) upon arrival in the morning, I noticed that a Bally "Reel Winners" game was shut down. I looked in our daily log book and saw that it had been shut down because of a possible bad reel control board. Well, to start off with, why not turn on the game and see what happens? Once it was finished with booting up, it had a "topbox disconnected error" and I noticed that there wasn't any voltage on the reels. Another item I noticed, was that the reel control board (located above the reels on an upright Alfa) didn't have any of the lights on. Hmmm, could it be a bad power supply, a bad board or what? I turned the game off and started to reseat the reel control board. When I grabbed the board to remove it, I could tell that it wasn't seated all the way. I put it back in, then removed it. The board definitely wasn't seated properly. With the board installed properly this time, I turned the game back on. It wasn't very long into the boot up process and the lights on the board started flashing and the reels started spinning. Once the game was finished, I noticed some credits were remaining. I let surveillance know that I was going to "test" the game, and play off the credits. I tested it for a few minutes and everything was ok. So far so good, I haven't received any complaints about the game yet. It looks like the problem was a loose reel control board.

Bally Hot Shot Progressive Cinevision Touch Screen Problem

Why was this game turned off? I read our logbook and it stated that the game had

a touch screen problem. I went to the game, turned it on and after bootup I tested it. Sure enough, the touch-screen wasn't working like it should. You touch in one spot and it would show up in another. I turned the game off and checked the connections on the main processor board and reseated it. I also gave the screen a good cleaning with paper towels and 3M Touch Screen Cleaner. After the game booted up, I calibrated it twice and it worked like it was supposed to. The screen was pretty dirty so that would be my guess to what the problem was. Note: When cleaning monitors or LCDs that have a touch screen, it is a good idea to use a cleaner that is made for use with touch screens.



A symptom of a bad fan on a video card is that the game reboots itself or may not boot up all the way.

Quest Area 51 Kept Rebooting Itself

I received a complaint that a Quest Area 51 video game kept rebooting itself. Text would display on the screen but the graphics wouldn't even show up. When I removed the door for the processor and video card area, I noticed something right away. The cooling fan on the video card wasn't spinning! These small fans are very important, not only in Quest games, but in ALL slot machines. In fact ALL cooling fans are important in slots. With this particular game the cooling fan located on the video card was shot. They are supposed to move very easily when spun by hand. This one would barely turn and the integrated circuit under it was quite hot. Luckily, the device didn't cook. The fan was replaced with one similar and the game was running again without problems. A symptom of a bad fan on a video card or if the complete card may be bad, is that the game reboots itself or may not boot up all the way.

WMS Bluebird "Sleeping Forever" Error

Recently on a Monopoly Tycoon Bluebird, I rebooted the game because of a "progressive unconfigured" error and when it came back, it had a "sleeping forever, unable to ini" error.

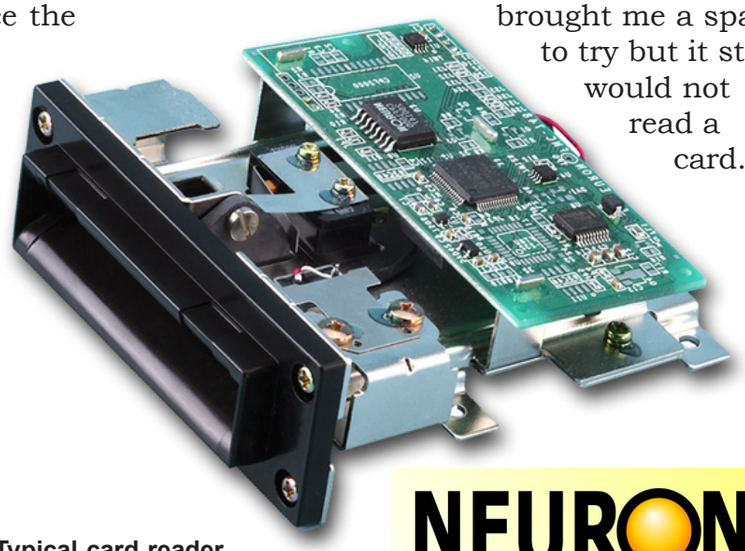
What in the world is a "sleeping forever" error?

I disconnected the main power for 30 seconds, plugged it back in and gave the game a reboot. Once completed, it appeared to be ok and ready for a customer to play. But what does a "sleeping forever" error mean? I had to call our WMS service tech to find out the answer; I couldn't even guess. He stated that the error can occur when the CPU board comes loose or disconnected from the backplane board. It only happens on games that have the "CPU Next 2" that has a hard drive on it. The repair (guess I got lucky on mine) is to power off the game and make sure the CPU board is properly seated to the backplane. If it is seated, try re-seating it and power it back up. If that doesn't do it, he said sometimes a RAM clear is needed. When I first saw the error I thought to myself, what could this possibly mean and what can I do to resolve it? Now I know what to look for. Back to the original "progressive unconfigured" error, sometimes a reboot does the trick, sometimes not. If a reboot doesn't clear the error, then we call WMS WAP (Williams Wide Area Progressive). We give them the machine number, location number and the game serial number and ask if they can reset it for us. Usually within a few minutes, the game is back online.

Oasis "Reinsert Card" Error

I received a call on an IGT Party Time progressive game where the Oasis system card reader wouldn't accept a card. All the display would show was "please reinsert card" when a card was put in. The problem may be a number of things so why not start out with the obvious by replacing the card reader itself. I went to our south shop and grabbed two. Since they were used and not new, I had best not only grab one. Back at the game, with this particular model (an IGT upright with an upper and lower LCD) the lower LCD needed to be removed. The top glass and Oasis bracket needed to be removed as well. All of these components needed to be removed so I could have access and replace the card reader and check the card reader connection. The LCD needs to be removed to have access to the three Oasis bracket bolts. The top glass needs to be removed because it helps hold it in place. Of course I removed the bracket that holds the card reader and the card reader itself.

I removed power from the Sentinal and connected the replacement card reader. Power was reconnected and my floor card was inserted, removed, re-inserted, and removed numerous times. The card reader would not read my card. I even tried it in the game next door and it read my card right away so I knew that it was good. Maybe the replacement was bad? I tried the other replacement and that one didn't work either. Maybe there is a loose card reader cable connection at the Sentinal? I looked at that too. The cable looked fine. A co-worker brought me a spare to try but it still would not read a card.



Typical card reader. Photo courtesy Neuron

NEURON Electronics, Inc.

Well, back to the shop again to grab more replacement parts. I grabbed a different Sentinal board, another EPROM and a new card reader. Back at the game, I tried the new card reader and that didn't work. Next, I tried the replacement Sentinal with a new EPROM. Now the card reader worked but somehow I lost Sentinal communication. The old EPROM was put in the replacement Sentinal and the problem remained. What is going on? I almost had to walk away from it because I was getting frustrated. This time, I put the replacement EPROM back into the Sentinal and thought what I may have done wrong. When I was putting in the Sentinal, I was unsure of a fiber connector that is near the card reader connector. I couldn't remember if it was connected or not. I know we used to use it but I wasn't sure since we went to the "fiber converter boxes." I unplugged the suspected connector and once again applied power to the Sentinal. Within 15 seconds the green communication LED on the Sentinal board began flashing. This meant I had communication. Now what about the original problem, the card reader? On the second try my card worked! Finally the game was working properly. It appeared that one of the problems was the Sentinal and maybe the EPROM.

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