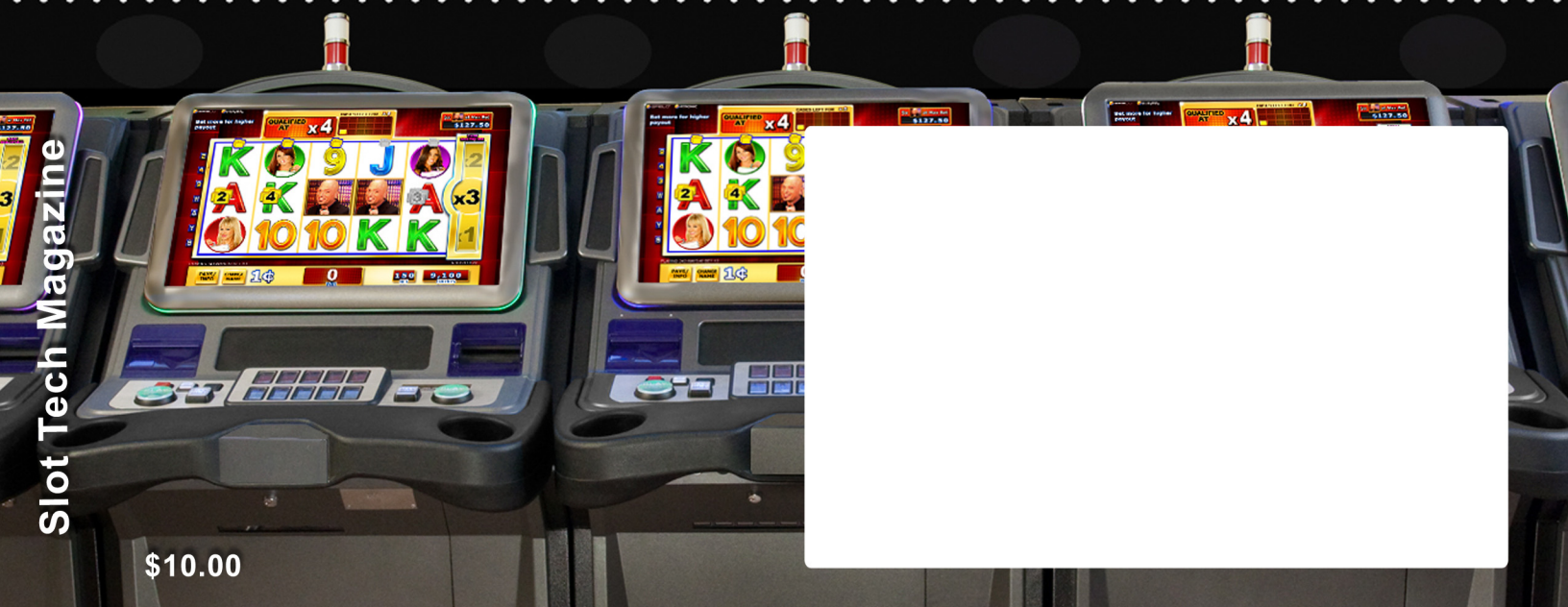
November 2010

Slot Tech Magazine

Slot Machine Techno national Casino & Gaming Industry



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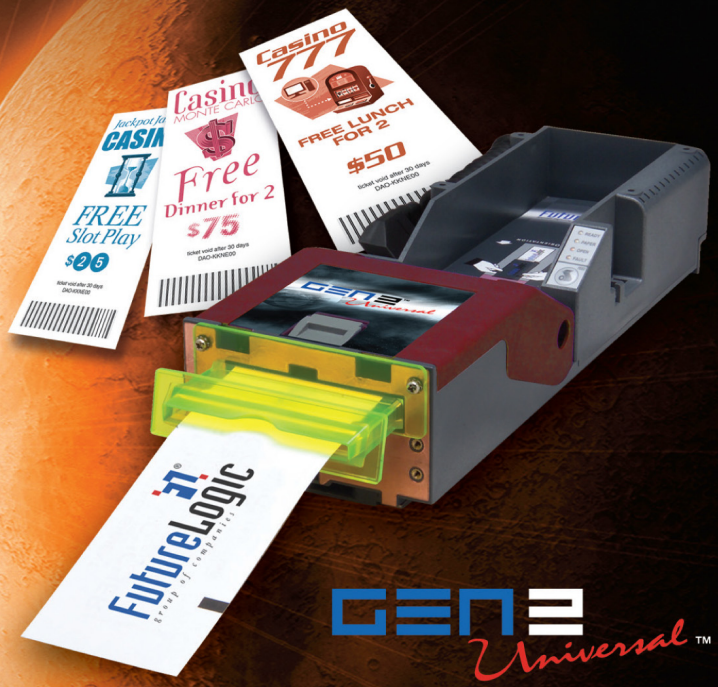

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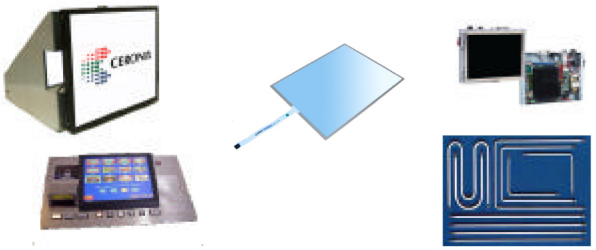

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Randy Fromm

Dear Friends,

If you have picked up this copy of Slot Tech Magazine at the Global Gaming Expo, you must be new my publication so let me tell you a little about myself and the magazine you're holding in your hands. Slot Tech Magazine is just what the title implies. We are a monthly trade journal for the international casino industry with a narrow focus on slot machines and an even narrower focus on how to fix them. Slot Tech Magazine is all about slot machine repair. Each month, we present technical articles on the subject. On request, we also conduct slot tech training, on-location, at casinos across the United States. Training programs have also been held in Austria, Germany, Korea and Okinawa. Slot Tech Magazine also sponsors "TechFest," a three day technical conference with presentations from the casino industry's leading technical instructors and factory engineers and representatives. A review of TechFest 21 can be found in this issue. TechFest 22 is planned for Mystic Lake Casino (near Minneapolis, Minnesota) in May of 2011.

As for me, I am a pure geek, nerd, propeller-head, whatever. I have been a professional electronics technician my entire career. When Pong hit the amusement arcades, I was there to fix it when it broke. I have spent more than 30 years in the coin-operated amusement industry as a "pinball mechanic" and began to publish Slot Tech Magazine in 2001 when it became clear that technology had finally caught up to slot machines and they were, at long last, "interesting."

If you need to learn about slot machine repair, please consider subscribing to Slot Tech Magazine. It's just $60/year to North America. If you have goods or services that you'd like to advertise to the slot departments of just about every casino in the USA, please consider advertising in Slot Tech Magazine. It's as little as $660 for a full page advertisement when you take an ad each month *as every one of my advertisers does*. The vast majority of my advertisers have supported Slot Tech Magazine since our first year of publication. This kind of support for a little technical magazine is unprecedented in industry and I am deeply grateful for the backing of these huge names in gaming: FutureLogic, 3M Touch Systems, Patriot Gaming, Gary Platt Manufacturing (they sell chairs!) and American Gaming & Electronics as well as the patron saint of Slot Tech Magazine, Frank Happ and his namesake successor, Suzo-Happ for their continued support since our premier issue in April, 2001.

Randy Fromm

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Slot Tech Magazine

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TechFest 22
Mystic Lake Casino
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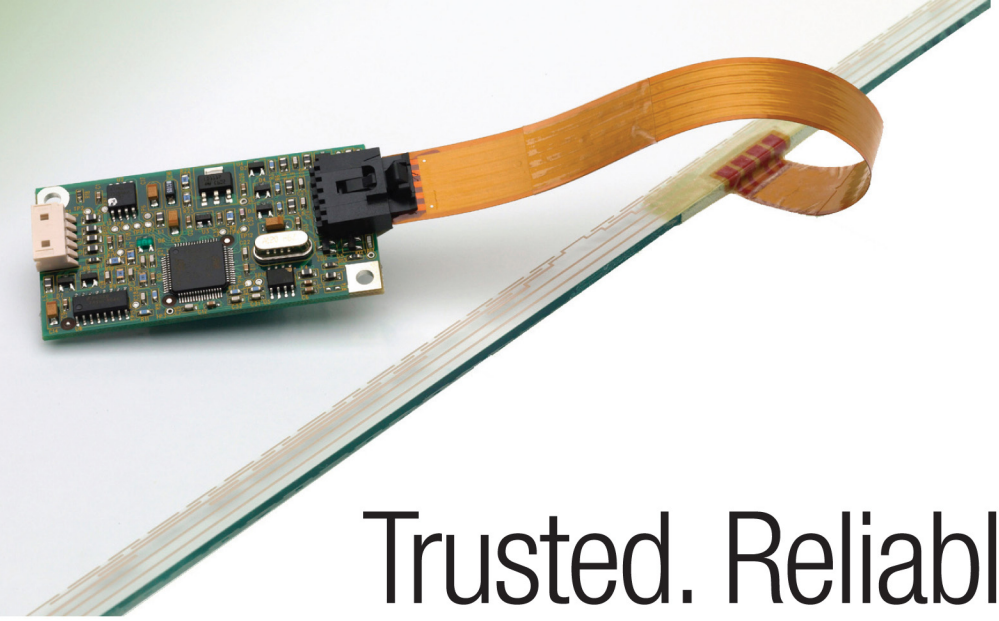

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WMS Blue Bird 2
OLED Button Panel

By Craig Nelson

Disclaimer: The button panel flash program/procedure might not be available in all jurisdictions; please ask your field service representative for details regarding this.

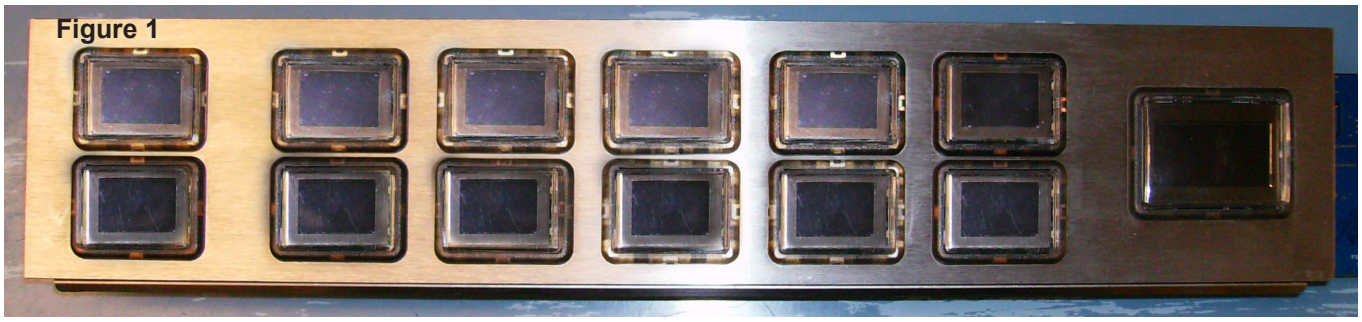
The OLED Button Panel technology is something that is being introduced in some of the latest machine platforms. Companies are moving towards this type of technology for various reasons; the main reason is for simplicity when doing machine changes. Whether it be from a system based (server based) floor management program or manual floor changes (conversions) done by your slot staff, these button panels require little to no configuration when program changes are made. However, with these leaps in technology also come with some challenges. In this article, you will get instructions on how to maintain the WMS OLED button panels on your gaming floor and flash them with a new program if necessary.

Given the nature of this particular part, wear and tear will be the main factor in them becoming defective. Patrons that use too much force while gaming will break the button actuator or the lens itself. Drink spills cause the most damage to these devices (since they are 90% non-mechanical) and a drink spill can cause a single button OLED module to go bad, multiple OLED module failure, and/or even the OLED controller board itself which can *cost over a thousand dollars to replace*.

If you come upon a machine that has a button or multiple buttons that are distorted, blinking, partially lit up or totally black, you are going to want to check all connections to the button panel and attempt to cycle power on the machine. This may not work but there have been times where one button will just lose communication with the panel controller board. If power cycling does not work, you are going to want to remove the button panel and bring it to your shop for repair.

First of all you are going to need the replacement parts to repair the individual OLED button modules, actuators, and the lens bezels. You can get replacement parts directly from WMS, they are as follows:
OLED Module Kit – Large
OLED Button Module – Part

Figure 1



Bob Yabroff
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OLED Lens Bezel – Large
Bezel – Part #20-027111-00-00
OLED Lens Bezel – Small
Bezel – Part #20-027112-00-00

Note: If the controller board is bad you will need to buy a whole replacement panel.

To replace the OLED button module you will first need to remove the eleven screws on the rear cover.

You will be left with the exposed bottom portion of the OLED button panel controller board.

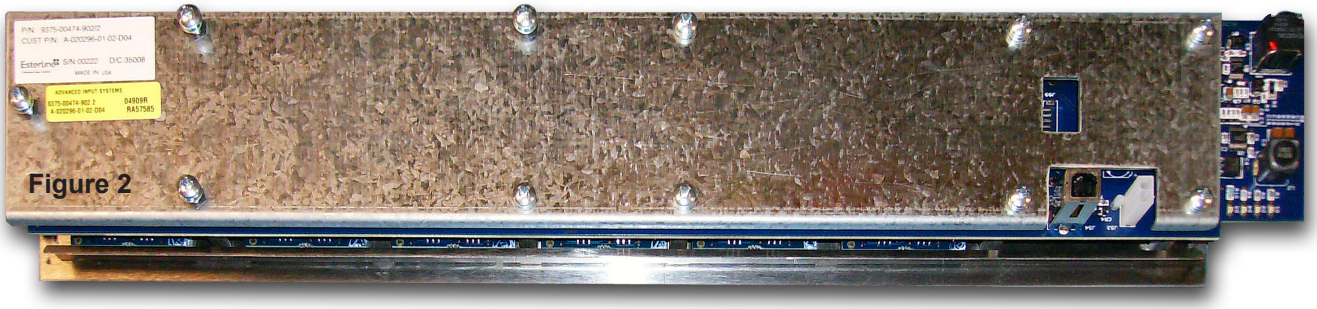
Figure 2

Flip the board over, exposing the button modules and actuators. You will notice that both of those parts just clip in gently. There are no other screws that hold the actual button parts onto the controller board. Gently remove the button module from its socket; if the actuator is not damaged you will not need to remove it to replace the actual module. Figure 4 shows an example of what happens to the button actuators. The actuator on the left is a brand new unit that does not have any damage, while the one on the right shows all four posts broken off on the top and the bottom. This is caused by excessive force being applied to the button while it is depressed. The symptom of this part being defective would be an inoperable button that is still lit up. For the purpose of this article, both the module and the actuator were removed from the controller board. Once that is complete, it should look like figure 5.

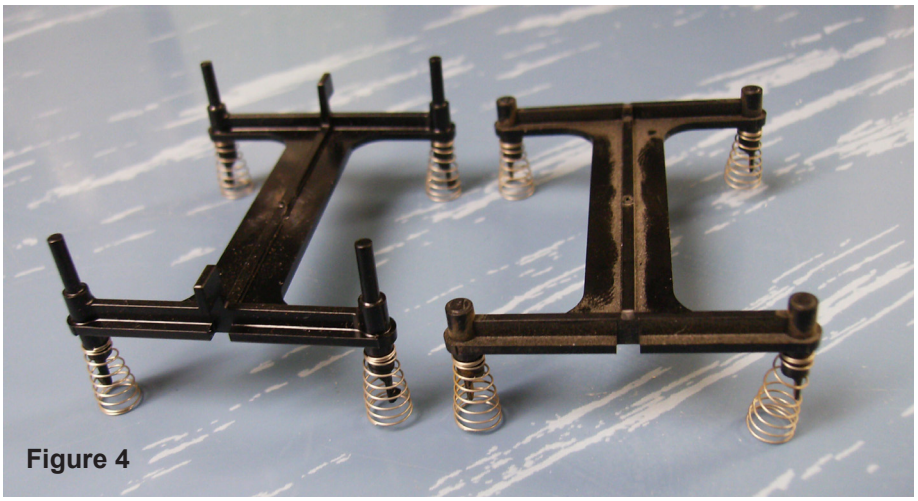
Figure 4

The actuator on the left is a brand new unit that does not have any damage, while the one on the right shows all four posts broken off on the top and the bottom.

To replace each part, you just install them in the same fashion as you removed them. The only variation is that on most panels, there is at least one

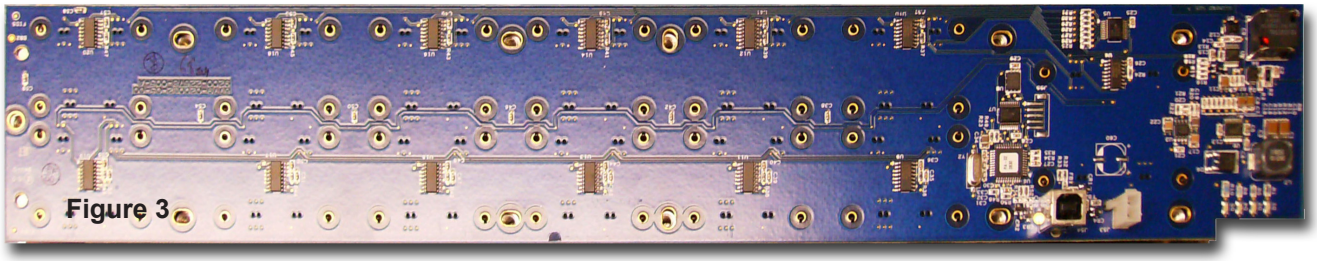
Figure 3

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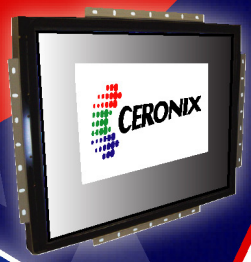

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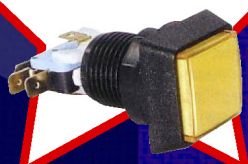

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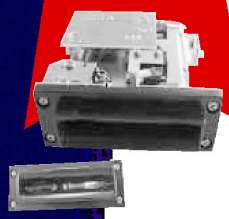

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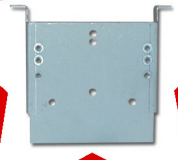

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large button located on the far right of the panel. The process for replacing these parts is the same as the smaller ones. Note: Be careful with the pins on the module itself as well as the posts on the actuator when removing or installing to avoid further damage to the part or controller board.

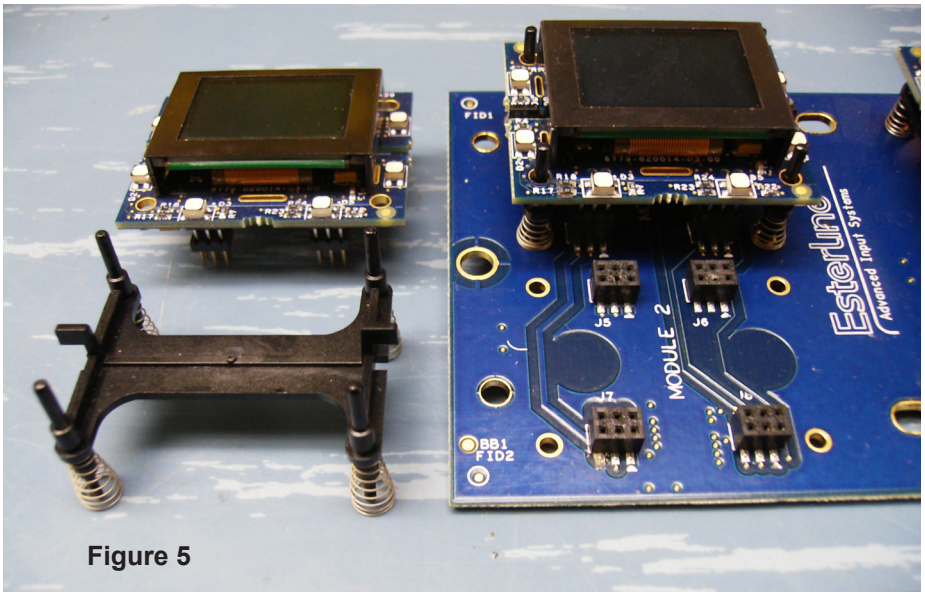
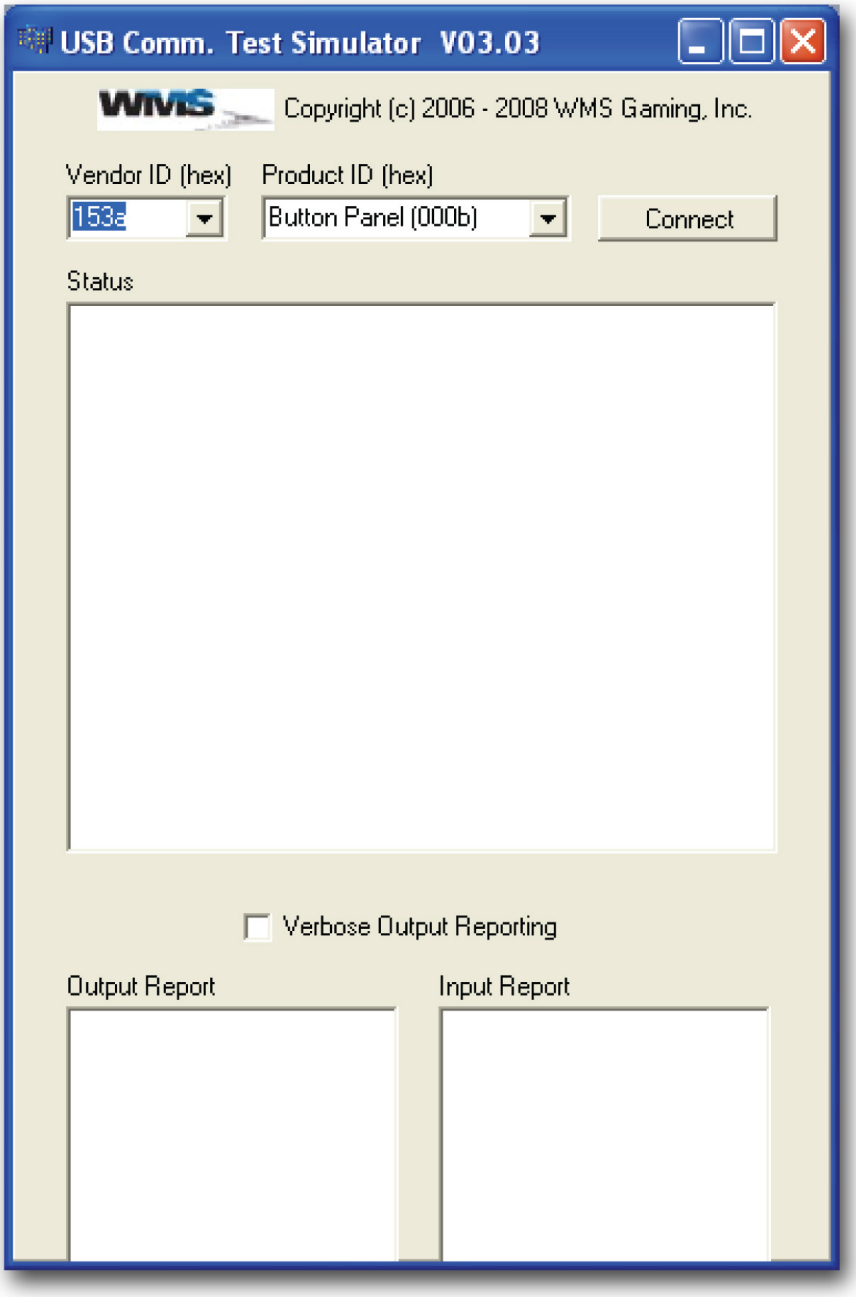
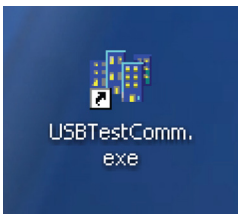


Figure 5

The button panel module replacements do not come pre-programmed from the factory so once you are finished replacing the defective component, you will need to program the button(s) to the appropriate firmware which is determined by the Operation System the game is utilizing. Operating Systems may vary based on your jurisdiction however, in most cases, SSOS-000-14xx series operation systems will use Version 2.xx button/controller firmware, while SSOS-000-15xx or greater will use Version 3.xx button/controller firmware to be compatible. Again, refer to your field service tech or the 24 hour hotline for specifics regarding the firmware as it might be different from casino to casino.



The program you will need to flash button panels is called “WMS USB Test Comm Tool.” It is a proprietary program created by WMS that is specifically used



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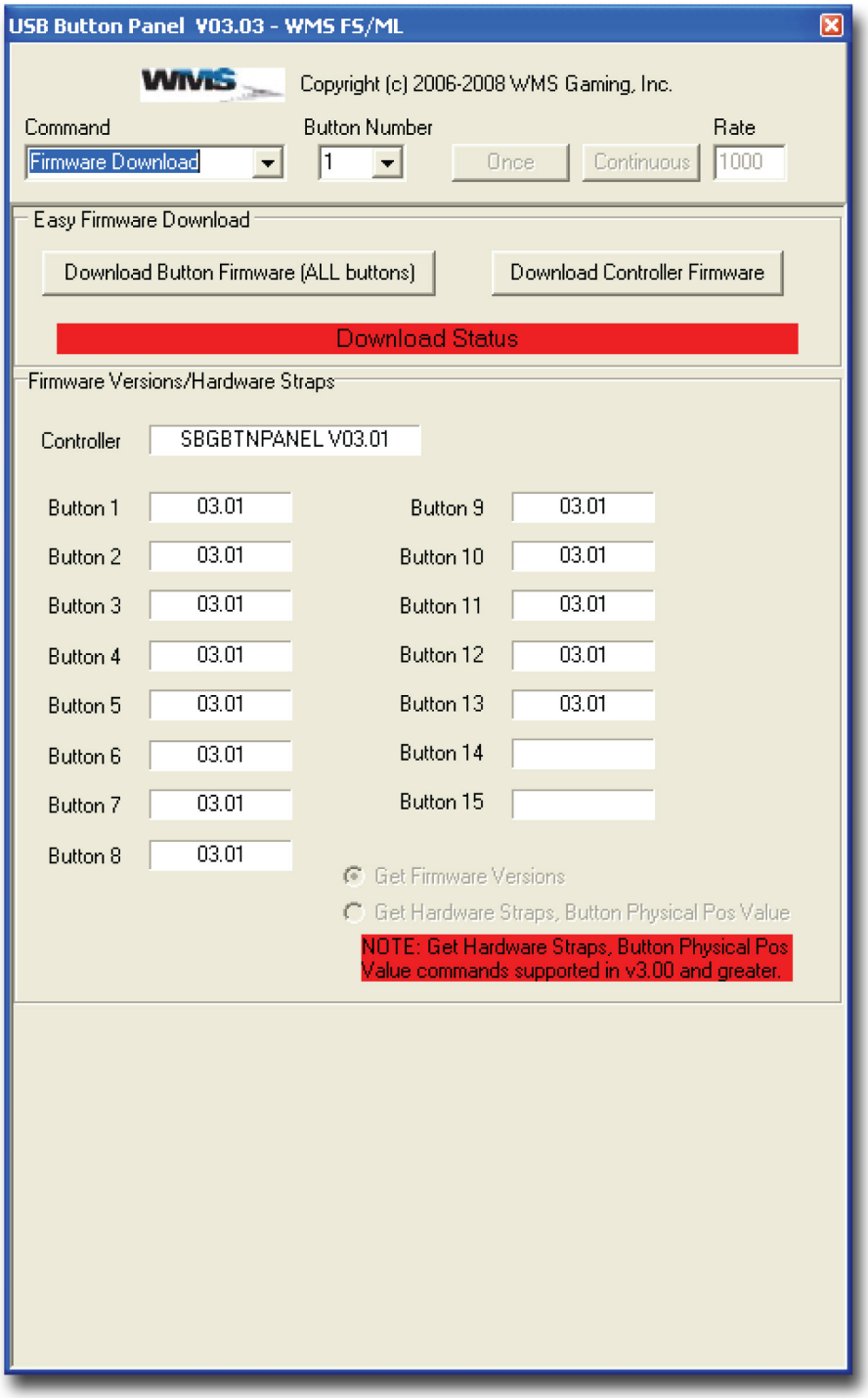
for programming their OLED button panels. You will need to go through WMS to obtain this program or go to their website www.wms.com and then go to their secure site where it is available for customer download.

To program the button panel, you will need to either have it in the game with power applied or you will need to make a jumper harness to hook up to an external power supply. Open the USB test comm tool and then apply power to the button panel with a USB cord attached.

Click the connect button; you should see information pop up in the status box indicating it is connected. You will then click on the radio drop down box and select 'Firmware Download'; you need to do this even if it is highlighted initially. Once you do that, the 'Easy Firmware Download' information will appear in the bottom of box.

When you have established connection with the button panel, you can then select 'Download Controller Firmware.' It will bring you to the folder selection panel where you will then select the firmware version you wish to install. Once you find it, just open it and the program will do the rest. When it is finished, it will indicate that in the download status bar and the version installed will appear in the box next to 'Controller.' Next, you will need to install the button module firmware (yes, they are separate). To do that, you will just click on 'Download Button Firmware (ALL buttons)' and repeat the same process as the controller firmware. Again, you should see the version in all the boxes by the corresponding button boxes. If the controller and the button firmware match, you are now ready to install the panel.



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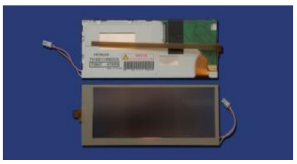

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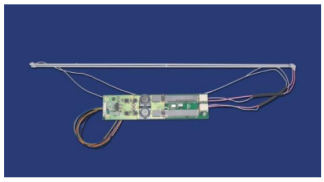

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8680 Single cold cathode lamp assembly for Bally I-View 6.2" Hitachi LCD #TX16D11VM2CCA
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9890 NEW 5 wire touch screen for Bally IView 6.2" Hitachi LCD #TX16D11VM2CCA, DOES NOT include metal base or copper foam grommet
1060 NEW 5 wire touch screen for Bally IView 6.2" “IDW” brand LCD, DOES NOT include metal base or copper foam grommet
8320 Metal housing for Bally Iview “IDW” touch screen
1200 Copper foam grommet for the touch screen on Bally IView 6.2" “IDW” brand LCD
9800 Single output cold cathode lamp inverter for Bally IView 6.2" “IDW” brand LCD
1040 Single output cold cathode lamp inverter for Bally Iview 6.2" Hitachi LCD #TX16D11VM2CCA
9190 Protective Mylar sheet for Bally Iview 6.2 inch “IDW” LCD
9200 Protective Mylar sheet for Bally IView 6.2" Hitachi LCD #TX16D11VM2CCA
1090 Power supply for Bally Iview player tracking system that use the 6.2" “IDW” brand LCD
9250 Single raw cold cathode lamp for 15 inch LCD monitor in Bally games
9080 Single raw cold cathode lamp for 19 inch LCD monitor in Bally games
8770 Single raw cold cathode lamp for 20 inch LCD monitor in Bally games
1130 Single raw cold cathode lamp for 22 inch LCD monitor in Bally games
1140 Single raw cold cathode lamp for 26 inch LCD monitor in Bally games

IGT

8500 Single cold cathode lamp assembly for IGT NexGen 6.2" Hitachi LCD #TX16D11VM2CAA
1430 Single raw cold cathode lamp for IGT NexGen 6.2" Hitachi LCD #TX16D11VM2CAA
8610 Protective Mylar sheet for IGT NexGen 6.2 inch Hitachi LCD #TX16D11VM2CAA
1400 Single output 5 volt cold cathode lamp inverter for 6.2" IGT NexGen Hitachi LCD #TX16D11VM2CAA
8570 NEW 6.2" Hitachi LCD #TX16D11VM2CAA with 4 wire touch screen for IGT NexGen
1310 Used 6.2" Hitachi LCD #TX16D11VM2CAA with attached 4 wire touch screen for IGT NexGen
9090 Single raw cold cathode lamp for 6.2 inch Hitachi LCD #SX16H005-AZA in 1st generation IGT NexGen
9030 Protective Mylar sheet for IGT 1st generation NexGen 6.2" Hitachi LCD #SX16H005-AZA
8480 Single raw cold cathode lamp for IGT game with 10" LCD monitor
8920 Single raw cold cathode lamp for 15 inch LCD monitor in IGT games
9670 Single raw cold cathode lamp for 17 inch LCD monitor in IGT games
9290 Single raw cold cathode lamp for 19 inch LCD monitor in IGT games
1150 Single raw cold cathode lamp for 20 inch LCD monitor in IGT games
1160 Single raw cold cathode lamp for 22 inch LCD monitor in IGT games

KONAMI

8700 Dual cold cathode lamp assembly & 12 volt inverter for Konami belly glass that is edge-lit with cold cathode lamps
9870 12 volt dual output cold cathode lamp inverter for Konami belly glass that is edge-lit
1260 Dual cold cathode lamp assembly for Konami edge-lit belly glass
9240 LED edge- lit panel for belly glass in Konami K2V cabinet
8670 Single RAW cold cathode lamp for Konami belly glass that is back-lit with cold cathode lamps
9780 “L” shaped cold cathode lamp assembly for Konami 7 inch bonus screen LCD
1050 Single raw cold cathode lamp for 15 inch LCD monitor in Konami games
8600 Dual cold cathode lamp assembly for Konami slot machine with 17" LCD monitor
9680 Single raw cold cathode lamp for 17 inch LCD monitor in Konami games
9070 Single raw cold cathode lamp for 19 inch LCD monitor in Konami games
1100 Single raw cold cathode lamp for 22 inch LCD monitor in Konami games
1010 7 inch AU Optronics LCD #070VW01 for Konami bonus screen
1080 Cold cathode lamp inverter for 7" AU Optronics LCD #A070VW01 in Konami bonus screen
8550 Single “U” shaped cold cathode lamp assembly for Konami 7" LCD bonus screen
8590 Single cold cathode lamp assembly for Konami 1.5 video upright denomination back-lit panel

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Pacific Illumination Replacement Parts List

MULTIMEDIA

9700 Single raw cold cathode lamp for 15 inch LCD monitor in Multimedia games
9710 Single raw cold cathode lamp for 17 inch LCD monitor in Multimedia games
9720 Single raw cold cathode lamp for 19 inch LCD monitor in Multimedia games
9850 Single raw cold cathode lamp for 23 inch LCD monitor in Multi Media games

SPIELO

9740 Single raw cold cathode lamp for 15 inch LCD monitor in Spielo games
9750 Single raw cold cathode lamp for 17 inch LCD monitor in Spielo games
9760 Single raw cold cathode lamp for 19 inch LCD monitor in Spielo games

WMS

8490 NEW 6.4" LG LCD #LB064V02 (TD)(01) for WMS Bluebird bonus screen **(does NOT come with touch screen)**
8470 Single cold cathode lamp assembly for 6.4" LG LCD #LB064V02 (TD)(01) in WMS Bluebird bonus screen
8510 Triple cold cathode lamp assembly for WMS Bluebird 17" LCD monitor
8520 Triple cold cathode lamp assembly for WMS Bluebird 18" LCD monitor
9300 Single raw cold cathode lamp for 19 inch LCD monitor in WMS games
9830 Single raw cold cathode lamp for 22 inch LCD monitor in WMS games

Lamp Testers

9220 Bench top cold cathode lamp tester **(includes A/C adapter & power strip with ON/OFF switch)**
9840 Bench top dual ccfl inverter & lamp tester

Miscellaneous

1280 Raw cold cathode lamp 2.0mm X 250mm
1320 Single raw cold cathode lamp 2.4mm X 245mm
1420 Raw cold cathode lamp 2.6mm X 294mm
1290 Raw cold cathode lamp 2.0mm X 300mm
9910 Raw cold cathode lamp 2.0mm X 310mm
9970 Raw cold cathode lamp 2.6mm X 316mm
1190 Single raw cold cathode lamp 2.6mm X 342mm
8420 Raw cold cathode lamp, color white, size 2.4mm x 381mm
1330 Single raw cold cathode lamp 2.6mm X 385mm
1340 Raw cold cathode lamp, color white, size 2.6mm x 390mm
8400 Raw cold cathode lamp, color white, size 2.4mm x 394mm
1350 Single raw cold cathode lamp 2.6mm X 420mm
1020 Single raw cold cathode lamp, **purple color,** 4.0mm X 580mmRaw
1070 Single raw cold cathode lamp for Wells Gardner 6.4" LCD
8450 Single raw cold cathode lamp for 15" LCD in Touchtunes Maestro Monitor
9920 Single raw cold cathode lamp for 15 inch LCD in Touchtunes Genesis General Touch monitor
9960 Single raw cold cathode lamp for 17 inch ELO LCD
8440 Single raw cold cathode lamp for 19" LCD in MackVision LCD Monitor
1210 Silicone end cap for 2.6mm cold cathode lamp
1220 Single "O" ring for 2.6mm cold cathode lamp
1230 Figure 8 "O" ring for 2.6mm cold cathode lamp
9980 24v single output ccfl inverter for Aristocrat Viridian belly light
1250 Sharp 7" LCD #LQ070T3AG02
1380 One set of touch screen tape for 6.2 inch LCD Includes 2 long pieces and 2 short pieces of tape
8620 24 volt single output cold cathode lamp Piezo inverter

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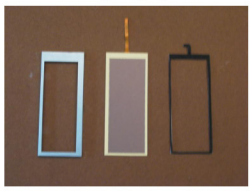
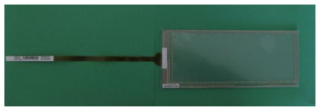
#8650 – Single cold cathode lamp assembly for "IDW" display
#8950 - 5 wire touch screen kit for "IDW" display (touch screen, copper foam grommet & metal housing)
#1200 - Copper foam grommet for touch screen on "IDW" display
#8320 – Metal housing for touch screen on "IDW" display
#1060 – New 5 wire touch screen for "IDW" display (touch screen only)
#9800 –Inverter for cold cathode lamp in "IDW" display

Replacement parts for the "HITACHI" display

#1240 – Used Hitachi 6.2 inch display with 5 wire touch screen attached
#8680 – Single cold cathode lamp assembly for "HITACHI" display
#1040 – Inverter for cold cathode lamp in "HITACHI" display
#9890 – New 5 wire touch screen for "HITACHI" display (touch screen only)

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(LAS VEGAS, NV) – ATRONIC and SPIELO are offering new products that combine experience, performance, and innovation to International casino customers at Booth #1783 at the Global Gaming Expo (G2E) at the Las Vegas Convention Center from Nov. 16 to 18, 2010. ATRONIC and SPIELO's commercial casino line-up includes the launch of a brandnew cabinet and product range, as well as exciting linked, progressive, and community games, proven core game titles, three hot new family brands, and flexible systems solutions.

As a highlight of the show, DEAL OR NO DEAL™ TV host Howie Mandel is making a special appearance at the booth on Tuesday, Nov. 16, from 2:30 p.m. to 4:30 p.m. to promote the North American launch of DEAL OR NO DEAL Join'N Play™, a linked community version of the game, and the first game under the successful licensed brand to feature Mandel.

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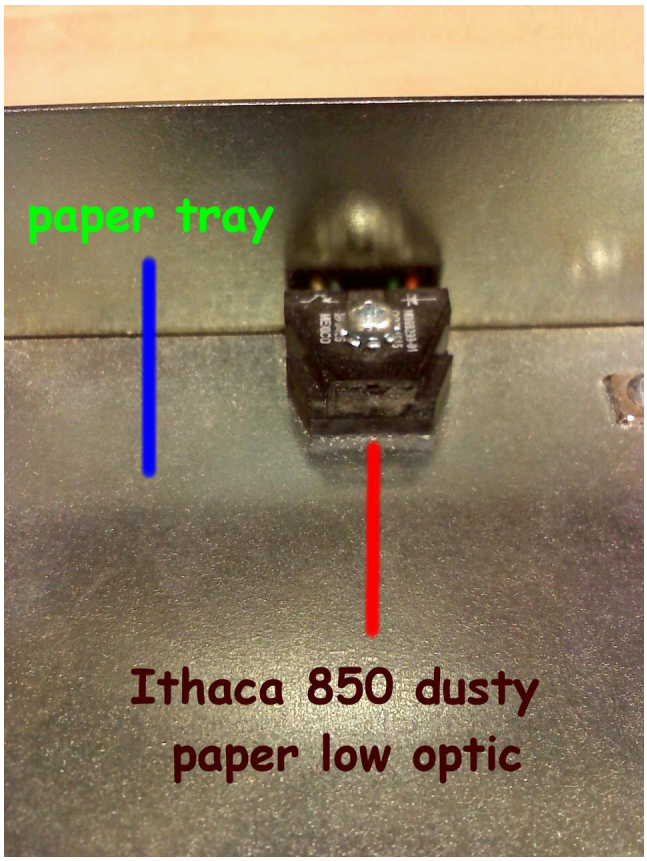
Quick & Simple Repairs #68

By Pat Porath

Ithaca 850 Paper Low Tilts

On the ticket printer bench, there was an Ithaca 850 with a note on it that read "keeps sending paper low tilts to dispatch." Under normal circumstances, this means that the printer thinks it is low on paper and a paper fill will be needed soon. In this case, the printer repeatedly sent "paper low" errors to our slot dispatch computer and a slot attendant would have to go and card the game along with entering a failure code. If a game does this, it can get irritating quite quickly so the slot tech simply swapped out the problem printer with a spare and the problem was solved. My question was, why did the printer keep sending error signals to the dispatch computer? I haven't heard of it with the Ithaca 850s. During a quick inspection it became obvious what the problem was. The paper low optic was dusty and dirty. I used a printer cleaning pen, then a dry Q-tip to clean it and the problem was solved.



Ithaca 950 Ticket Printer Specs and Basics

At the casino I work at we don't have a lot of them, but some. I would guess in the area of 40, give or take (never really counted them). Overall, in my personal opinion, they run very well. We have some that came with new Bally and Konami games. Thus far, the only issues that I have run into were figuring out what "firmware" (flash memory printer software) that went to which manufacturer of game when it was time to get spares tested. A couple had gotten a dust bunny in them and only needed the optics cleaned.

Some of the printer specifications are as follows:
Type of printing- direct thermal
Printing resolution-496 dots per line
Print speed (text)-5 seconds per inch
Print speed (2 color)-2.5 seconds per inch
Weight- 3.8 lbs.
Power requirement-24vdc

What firmware goes with what game? Well, what I did was walk up to say a Konami game, open the

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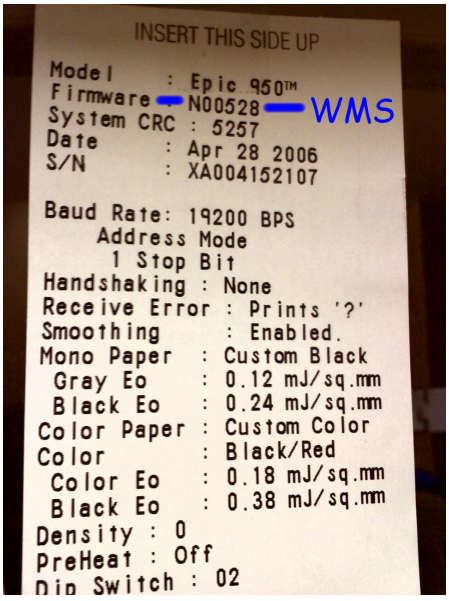
door and simply press and hold the feed button for a couple of seconds. A ticket should print similar to the one shown. On the ticket, it will display "firmware." ONLY certain firmware goes with certain games. So far, this is what I have found out:
Firmware N00528 is for WMS Bluebird
Firmware S03524 is for Bally Cinevision and Cinereel
Firmware S00124 is for Konami Advantage games

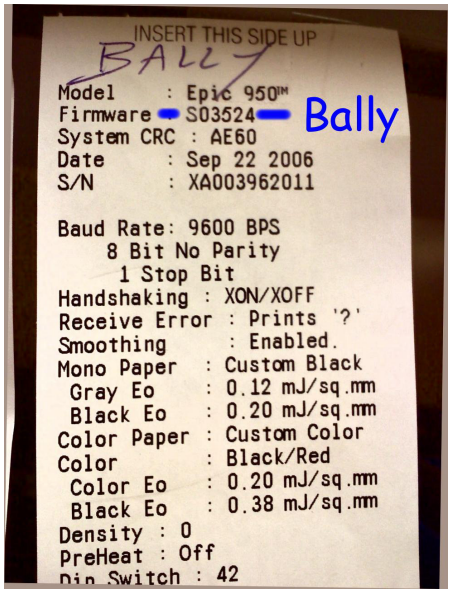
More information can be found at www.TRANSACT-TECH.com

Bally 6000 Monte Carlo-Code 24 & 51 Wouldn't Clear

It seemed like it didn't matter what I did to the game, error codes 24 and 51 would not clear. For starters, how could a totally coinless Bally game even display a code 24? For those that don't remember or don't know, a code 24 on a Bally 6000 is a coin-in problem and a code 51 means the game thinks a door is open. I checked the coin-in optic for any obstructions such as a dust bunny and I removed the "prism" (yes, there is a coin-in prism; it can be seen with belly door open) to check if it was dirty. That part of the game looked fine.

What about the door open code? Connections were checked at the belly door switch, the main door switch and the bill acceptor door switch. They all looked OK too. I was thinking of grabbing a multimeter to make sure the switches were, in fact good, but not quite yet. The main processor board was reseated and connectors were checked





on the backplane board. They looked to be in place too. I thought to myself, where might other door switches be located? Then it hit me, THE TOP BOX area! With slight pressure, I pushed on the top door that was in front of the bonus wheel and it pressed inward significantly. Next, the main slot door was closed then PRESTO! The game showed all doors closed and NO error codes. In the top area, the door came open just enough to trip the switch to show a door open code on the game display. I re-locked the top door to make sure that it was snug and the game worked great.

IGT Smoked Motherboard

In our log book, I read about an IGT "4-in 1" game that had been diagnosed as having a bad motherboard. Seeing that I had a little time on my hands, why not check it out for myself? As soon as I turned the game on, smoke started to come from the motherboard area. Yes, I would definitely say the motherboard is fried. I was asked to remove the board from the game so it could be looked at. It was kind of a job taking it out. The ticket printer and printer frame had to be removed, along with the entire bill acceptor assembly and other odds and ends. It was much more difficult than removing a motherboard from an S2000 upright game, in my opinion anyway. Not really difficult per se, maybe time consuming. If you ever see one, there are A LOT of connectors on it. Once removed, there were obvious black burn marks in a couple of areas on the board. How did the board fry? I was told that someone was performing a paper fill and when the printer was pushed back in its home position, smoke started. Somehow the printer cable (a GEN 2 Universal) got pinched and shorted out the game, which brings up another question: Was anything else fried? After the motherboard was installed along with a replacement ticket printer and cable, the game was turned on. A RAM clear was preformed, game options were selected, and the game was ready to be tested. After everything looked good it was put back in play. Luck-

Editor's Note: LOOK! New Neuron Ad!

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Is your casino totally self-sufficient in repairing monitors, power supplies, bill validators and ticket printers or are you throwing away hundreds or thousands of dollars purchasing replacement units? While it is not exactly a "hidden" cost to your department, some slot managers simply accept the price of replacements as the "cost of doing business" while it progressively nibbles away at the casino's bottom line. IT DOESN'T HAVE TO BE THIS WAY.

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About Randy Fromm: I am the publisher of Slot Tech Magazine. First published in 2001, Slot Tech Magazine is a monthly trade journal focusing on casino slot machine repair. I have been repairing electronics for the gaming industry since 1972. I really enjoy what I do and I love showing others how easy it can be. ***No previous knowledge of electronics is required.***

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ily nothing else was fried.

IGT Trimline Blue Screen Error

We recently had a Trimline game with the program "Fish in a Barrel" that would send an error signal to our slot dispatch that stated "serial communications down." When the attendant or tech would go to the game, there would be a blue screen displayed along with something like "reset error with key." Sure, a key reset worked but not for very long. It seemed like every half hour, the game would tilt. After a few more errors, there wasn't a doubt the game had an issue. Numerous items were checked such as connectors, game options, and Sentinel communication. Everything looked to be OK. From experience, if a Trimline or an AVP re-boots itself or acts kind of weird, it may lead to one of two items: A bad power supply or a bad cooling fan on the video card that is located in the brain box (main processor board area). Once the brain box cover was removed and I could see the fan, I tried to give it a spin. It did not spin free and easy like it was supposed to so I replaced the complete video card assembly, turned the game back on, and waited. So far so good. I haven't seen or heard of any problems with the game since (three days and counting. lol)

WMS 550 Main Door Open Problem

While testing out the ticket printer on an upright WMS 550, the game thought that the main slot door came open and displayed "main door open" in the monitor. I slightly pushed on the door and it would show closed. A slight pull on it, and it would show open again. After the main door was physically opened, I saw the problem right away. On the door side, the middle door latch was very loose. I tightened the screws for it and the problem was resolved. With a slight push and slight pull on the door, the door switch remained in the closed position. Simply tightening the loose door latch on the door side fixed the problem. Could this be why I had a few ticket printer complaints on the game? If the printer is in the middle of printing out a ticket and the door switch pops open, there is a good chance that the printing quality of ticket may be interrupted such as it only printing a partial ticket. Only time will tell for sure. I cashed out around ten test tickets and didn't have any problems. We'll see.

- Pat Porath
pporath@slot-techs.com

TechFest 21 was a really fun event at a beautiful property in the "Four Corners" area of the USA. In response to my call for "Where would you like a TechFest?" in a previous issue of Slot Tech Magazine, I received an e-mail from Sky Ute Casino's James Hardman, offering up their first-class facilities for the event and promising me a dozen attendees. The offer was too good to refuse, regardless of the fact that Sky Ute is, more-or-less, in the middle of nowhere in the Great American Southwest. Luckily, they have a sweet little regional airport in nearby Durango, Colorado although Suzo-Happ's David Oldham (road warrior and my personal hero) rented a Bitchin' Camaro and, undoubtedly fueled by cigarettes and Red Bull, made the drive from Las Vegas one day after work and drove back after his presentation on FutureLogic printers and MEI CashFlow bill validators the next day.

Also presenting at TechFest 21 were Tray Nofziger of Ceronix on LCD monitors, Russ Wigé of Transact Technologies on their Epic ticket printers and Dan Petersen of JCM on bill acceptors. TechFest 22 is back at Mystic Lake Casino in May 2011. - **Randy Fromm**

TechFest 21 was held at the Sky Ute Casino in Ignacio, Colorado

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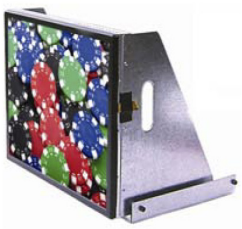

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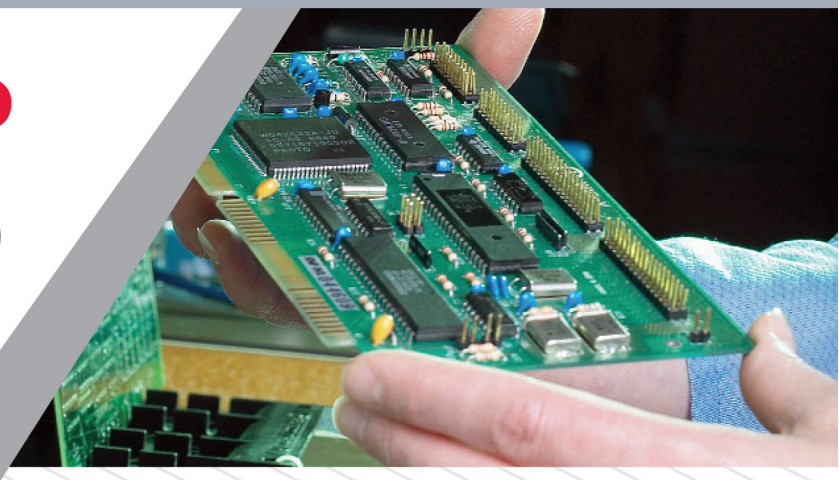

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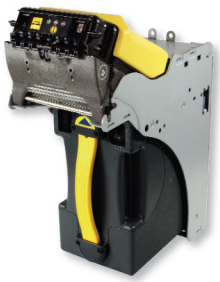

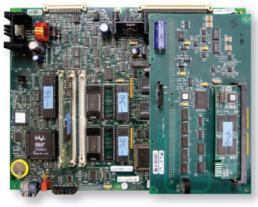

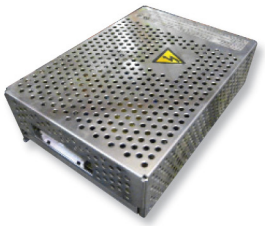

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