To: Taha Ramy[taha.ramy@dominionvoting.com]
Cc: Nebojsa Cirovic[nebojsa.cirovic@dominionvoting.com]; Aamer
Chaudhry[aamer.chaudhry@dominionvoting.com]; Steve Walker[steve.walker@dominionvoting.com];
Arnold Atienza[Arnold.Atienza@dominionvoting.com]
From: Lonnie Grimes
Sent: Tue 2/4/2020 7:59:29 PM
Subject: RE: SPARE ICE MOTHERBOARDS
ICE MCB - L2 Debug Pile Rev.1 (Mar 20, 2016).xlsx

Hi Taha,

I have about 20 pcb to add to this list but cannot today—swapped at the moment. Will try to finish
updating the list tomorrow and resend.

From: Taha Ramy <taha.ramy@dominionvoting.com>
Sent: Tuesday, February 4, 2020 1:37 PM
To: Lonnie Grimes <lonnie.grimes@dominionvoting.com>
Cc: Nebojsa Cirovic <nebojsa.cirovic@dominionvoting.com>; Aamer Chaudhry
<aamer.chaudhry@dominionvoting.com>; Steve Walker <steve.walker@dominionvoting.com>;
Arnold Atienza <Arnold.Atienza@dominionvoting.com>
Subject: RE: SPARE ICE MOTHERBOARDS

Hi Lonnie,

Can you please send the spreadsheet tracker with the diagnosis for these boards. We can send it off
to Flex and get repair quotes.

Thanks,
Taha

From: Arnold Atienza <Arnold.Atienza@dominionvoting.com>
Sent: February 4, 2020 2:10 PM
To: Lonnie Grimes <lonnie.grimes@dominionvoting.com>; Taha Ramy
<taha.ramy@dominionvoting.com>
Cc: Nebojsa Cirovic <nebojsa.cirovic@dominionvoting.com>; Aamer Chaudhry
<aamer.chaudhry@dominionvoting.com>; Steve Walker <steve.walker@dominionvoting.com>
Subject: RE: SPARE ICE MOTHERBOARDS

Lonnie,
For such request to Flex, please include me on your email so I can follow up with Robin.

Let me reach out to Robin.

Arnold Atienza | **Purchasing Manager**

DOMINION VOTING
215 Spadina Ave. Suite 200, Toronto, ON, M5T2C7
1.416.762.VOTE(8683) | DOMINIONVOTING.COM

416.762.8683 x219 OFFICE
647 338-1739 MOBILE

From: Lonnie Grimes <lonnie.grimes@dominionvoting.com>

Sent: February 4, 2020 2:02 PM
To: Taha Ramy <taha.ramy@dominionvoting.com>; Arnold Atienza
  <Arnold.Atienza@dominionvoting.com>
Cc: Nebojsa Cirovic <nebojsa.cirovic@dominionvoting.com>; Aamer Chaudhry
  <aamer.chaudhry@dominionvoting.com>; Steve Walker <steve.walker@dominionvoting.com>
Subject: SPARE ICE MOTHERBOARDS
Importance: High

Hi Taha/Arnold,

Once again we running out of ICE MCB—only 4 left. Steve is trying to place an order for 50; however, we presently have over 200 bad MCB out in the warehouse. We have tried several times to get a Flextronics repair program started on repairing these PCB, but something always comes up, and it has never materialized. Many of these boards are simple issues. Can we try again to get this repair program started.

Regards,
Lonnie
Lonnie Grimes | SR REPAIR TECHNICIAN

DOMINION VOTING
2010 N. Redbud Blvd., Suite 110, McKinney, TX 75069
1.866.654.9335 | DOMINIONVOTING.COM

214.491.5218, 9335 OFFICE
972.542.3260 FAX

From:	Arnold Atienza
Sent:	Monday, March 9, 2020 3:45 PM
To:	Michael Simmons; David Spitz; Robin Wilson
Cc:	Dejan Marinkovic; Taha Ramy; Nebojsa Cirovic; Aamer Chaudhry
Subject:	FW: ICE Motherboard 2V5 - release fies
Attachments:	111-000125_ICE_MB_2V5_Gerbers_3.zip; ICE_MB_2V5_AssemblyFiles_R3.zip; 111-000125_ICE_MB_2V5_ODB_3.zip

Importance:	High

Hi Mike,
Here's the update for ICE MB 2V5 release addressing two major EOL parts and manufacturing improvements.
Please run final DFM and final quote for 5/10/20 pcs protos and production quantity 500/1000 pcs for standard LT.

To minimize our work, send it to your "Preferred Vendor" that Robin still have to advise.

Thanks,
Arnold

To: Arnold Atienza[Arnold.Atienza@dominionvoting.com]; Nebojsa Cirovic[nebojsa.cirovic@dominionvoting.com]
Cc: Aamer Chaudhry[aamer.chaudhry@dominionvoting.com]; Taha Ramy[taha.ramy@dominionvoting.com]
From: Dejan Marinkovic
Sent: Tue 6/23/2020 9:37:28 PM
Subject: ICE Motherboard 2V5, 160 level assembly files
160-000064_ICE_MB_Rev2V5_assemblyFiles_R3.zip

Arnold, attached is BOM and PickAndPlace for ICE MB 2V5.
I assigned new assembly P/N: 160-000064

DEJAN MARINKOVIC
DOMINION VOTING
416-762-8683 x417 OFFICE
647-951-5819 CELL

To: Taha Ramy[taha.ramy@dominionvoting.com]; Steve Walker[steve.walker@dominionvoting.com]
Cc: Aamer Chaudhry[aamer.chaudhry@dominionvoting.com]; Ryan Almeida[ryan.almeida@dominionvoting.com]; Susan Martin[susan.martin@dominionvoting.com]; Nebojsa Cirovic[nebojsa.cirovic@dominionvoting.com]
From: Lonnie Grimes
Sent: Mon 1/4/2021 6:47:20 PM
Subject: RE: ICE MOTHERBOARDS SHORTAGE
ICE MCB LIST OF PCB NEEDING REPAIR 12 16 2020.xlsx

Hi Taha,

As I mentioned in a previous email, we have almost depleted the bad motherboards from the last Flextronics builds for us. Attached is the list of the few boards we have left in McKinney and their issues. This does not include the boards you have in Toronto. Yes we do have a rework station that is good to go except we still need need a good repair micro scope and we have a paddle for removing ICs but we still need to purchase the solder paddle tips.

From: Taha Ramy <taha.ramy@dominionvoting.com>
Sent: Monday, January 4, 2021 10:59 AM
To: Steve Walker <steve.walker@dominionvoting.com>; Lonnie Grimes <lonnie.grimes@dominionvoting.com>
Cc: Aamer Chaudhry <aamer.chaudhry@dominionvoting.com>; Ryan Almeida <ryan.almeida@dominionvoting.com>; Susan Martin <susan.martin@dominionvoting.com>; Nebojsa Cirovic <nebojsa.cirovic@dominionvoting.com>
Subject: RE: ICE MOTHERBOARDS SHORTAGE

Hi Steve,

Do you have an updated spreadsheet with their info and the type of damage? Does McKinney currently have a rework station?

Thanks,
Taha

From: Steve Walker <steve.walker@dominionvoting.com>
Sent: January 4, 2021 9:24 AM
To: Taha Ramy <taha.ramy@dominionvoting.com>; Lonnie Grimes <lonnie.grimes@dominionvoting.com>
Cc: Aamer Chaudhry <aamer.chaudhry@dominionvoting.com>; Ryan Almeida <ryan.almeida@dominionvoting.com>; Susan Martin <susan.martin@dominionvoting.com>; Nebojsa Cirovic <nebojsa.cirovic@dominionvoting.com>
Subject: RE: ICE MOTHERBOARDS SHORTAGE

Taha,

We have 40+ ICE MCB needing repair.

Regards,

Steve Walker
USN   RET
Inventory and Service Center Manager, McKinney
1.866.654.8683 | DOMINIONVOTING.COM

214.491.5218 X 9334 OFFICE
214.548.7918 MOBILE

From: Taha Ramy <taha.ramy@dominionvoting.com>
Sent: Thursday, December 31, 2020 3:06 PM
To: Lonnie Grimes <lonnie.grimes@dominionvoting.com>
Cc: Aamer Chaudhry <aamer.chaudhry@dominionvoting.com>; Ryan Almeida
<ryan.almeida@dominionvoting.com>; Steve Walker <steve.walker@dominionvoting.com>; Susan
Martin <susan.martin@dominionvoting.com>; Nebojsa Cirovic
<nebojsa.cirovic@dominionvoting.com>
Subject: RE: ICE MOTHERBOARDS SHORTAGE

Hi Lonnie,

I will be working on restoring these boards next week and I will update you once they're ready. In
terms of ordering new motherboards, I believe that could be an option with Avalue in the next few
months. How many damaged ICE motherboards do you currently have? Do you have an updated
spreadsheet with their info and the type of damage? Perhaps repair could also be an option.

We should also prioritize the idea of McKinney having a rework station for simple repair and
diagnostics. Do you currently have a rework station?

Thanks,
Taha

From: Lonnie Grimes <lonnie.grimes@dominionvoting.com>
Sent: December 29, 2020 9:22 AM
To: Nebojsa Cirovic <nebojsa.cirovic@dominionvoting.com>
Cc: Aamer Chaudhry <aamer.chaudhry@dominionvoting.com>; Taha Ramy
<taha.ramy@dominionvoting.com>; Ryan Almeida <ryan.almeida@dominionvoting.com>; Steve
Walker <steve.walker@dominionvoting.com>; Susan Martin <susan.martin@dominionvoting.com>
Subject: ICE MOTHERBOARDS SHORTAGE
Importance: High

Hi Nebojsa,

We need to take some steps now to prevent major delays in ICE Repair later on this next year. We
have been going through over 100 MCB per year for ICE repair. We used up most of our
reserve/spare units in this present presidential election year. We are down to about 21 spare ICE
MCB left at McKinney. We also depleted most of our bad MCB units also this year. We had
Flextronics repair bad MCB twice this year. The second time they repaired MCB most repaired units

were then used by Flextronics to complete our ICE builds since they were out of ICE motherboards. You mention that Taha was setting up a unit to look at the 10 to 12 MCB I sent to Toronto a couple of months ago. I also have some more bad MCB here exhibiting the shutdown at platform starting that I can send to Toronto while Taha is looking at these boards; however, this is not enough for us to make it through the whole year. We probably need to order some new ICE MCB from either Avalue or Flextronics very soon to prevent major repair delays later in this coming year.

Regards,
Lonnie

Lonnie Grimes | SR REPAIR TECHNICIAN
DOMINION VOTING
214.491.5218, 9335 OFFICE
972.542.3260 FAX

To: Lear_Guo(郭忠益)[lear_guo@eversun.com.tw]
Cc: Nebojsa Cirovic[nebojsa.cirovic@dominionvoting.com]; Taha
Ramy[taha.ramy@dominionvoting.com]
From: Ryan Almeida
Sent: Tue 7/27/2021 11:43:50 PM
Subject: ICE Motherboard Repair - Error Message Follow Up
Flex Board Rework
ICE Screenshots for Restoring MFG Settings_27 Jul 21.pptx

Hi Lear,

Regarding the ICE Motherboard error message troubleshooting we discussed in today's
DRT, two things:

> 1. Did your team follow the procedure outlined in Taha's original email (attached)? In
> particular did your team follow Steps 4 and 5 of the repair procedure? ("Press Settings
> " and "Perform a "Restore MFG Settings" to clear the EEPROM"). If you don't recall, I
> have added images of what this process looks like in the PPT attached. (These
> screenshots are taken from pg16-19 of document 129-000547 which you already have
> in FTP). Please confirm if your team followed this procedure.
> 2. Could you also clarify the number count for units that experienced this issue? I
> believe you said 20 in the DRT? So does that mean 20 MBs experienced this issue
> and all others did not? Or did you say there were 20 boards that had yet to undergo
> SW upgrade after board was repaired? Or both? Would appreciate your clarification.

We can discuss any questions in our call tonight. Thanks,

RYAN ALMEIDA | HARDWARE ENGINEER

DOMINION VOTING SYSTEMS
1.866.654.8683 | DOMINIONVOTING.COM

DOM_DC02445448

To: Lear_Guo(郭忠益)[lear_guo@eversun.com.tw]
Cc: Nebojsa Cirovic[nebojsa.cirovic@dominionvoting.com]; Taha Ramy[taha.ramy@dominionvoting.com]; Aamer Chaudhry[aamer.chaudhry@dominionvoting.com]; Joseph Lucchese[josephl@avalue-usa.com]; 'Vincent Hsu'[vincenth@avalue-usa.com]; Arnold Atienza[arnold.atienza@dominionvoting.com]
From: Ryan Almeida
Sent: Fri 7/30/2021 3:55:20 PM
Subject: RE: Avalue ICE Motherboard Repair - Error Message Follow Up
Flex Board Rework
ICE Instructions For Avalue MB Recovery_Locked Units_29 Jul 21.pdf

Hi Lear,

I am following up from our earlier conversation. To ensure we are on the same page, here is a summary of the issues we clarified along with the next steps:

For the 20 units reported with "Corrupted System Component":

1. Your team confirmed Step 4 and 5 in email attached ("Press Settings" and "Perform a "Restore MFG Settings" to clear the EEPROM") was not applied. To resolve this issue on those 20 boards you will have to perform the recovery process attached in the PDF above. Please note: This document is only intended as a one-time use for these 20 MBs. Do not apply this process to any other production or troubleshooting efforts unless stated by DVS.
2. For the 1 unit you did recover by yourself, this was performed by reprogramming the ICs (U4, U18, U78) and then applying Step 4 and 5. Although this is one possible way to resolve the issue, it is not the proper way as it involves extra/unnecessary steps to resolve the issue. Please only use Step 1 above to resolve the issue.

For the other 20 units which successfully upgraded to official SW with no issues:

1. You need to perform **only** Step 1, 2 and 4 of the PDF. Basically,
    a. Take out the CF0 (containing Official SW) from these units and Insert the CF0 from Step 1 into the unit
    b. Boot up unit, perform Step 4 (Reset Lifetime Counters), Shut down unit
    c. Swap out the CF0 back with the original CF0 (containing Official SW)
    d. Unit is ready to be L3 Tested using standard procedures, and inserted into production

For all units being sent to McKinney:

1. While unit is in L0 Testing, perform Step 2, 3 and 4 of PDF. NOTE: No need to insert CF0 from Step 1 of PDF because these units are already running MFG Test SW.

    NOTE: For units that have already passed L0/L1 Test and ready to be shipped to McKinney, please also perform this step, so that ALL boards sent to McKinney will have this step completed.

I hope this helps. If you have any questions, please let me know.

Thanks,

RYAN ALMEIDA | HARDWARE ENGINEER

DOMINION VOTING SYSTEMS
1.866.654.8683 | DOMINIONVOTING.COM

From: Ryan Almeida
Sent: July 27, 2021 7:44 PM
To: Lear_Guo(郭忠益) <lear_guo@eversun.com.tw>
Cc: Nebojsa Cirovic <nebojsa.cirovic@dominionvoting.com>; Taha Ramy <taha.ramy@dominionvoting.com>
Subject: ICE Motherboard Repair - Error Message Follow Up

Hi Lear,

Regarding the ICE Motherboard error message troubleshooting we discussed in today's DRT, two things:

1. Did your team follow the procedure outlined in Taha's original email (attached)? In particular did your team follow Steps 4 and 5 of the repair procedure? ("Press Settings" and "Perform a "Restore MFG Settings" to clear the EEPROM"). If you don't recall, I have added images of what this process looks like in the PPT attached. (These screenshots are taken from pg16-19 of document 129-000547 which you already have in FTP). Please confirm if your team followed this procedure.
2. Could you also clarify the number count for units that experienced this issue? I believe you said 20 in the DRT? So does that mean 20 MBs experienced this issue and all others did not? Or did you say there were 20 boards that had yet to undergo SW upgrade after board was repaired? Or both? Would appreciate your clarification.

We can discuss any questions in our call tonight. Thanks,

RYAN ALMEIDA | HARDWARE ENGINEER

DOMINION VOTING SYSTEMS
1.866.654.8683 | DOMINIONVOTING.COM

From:	Nebojsa Cirovic
Sent:	Thursday, November 18, 2021 4:56 PM
To:	hk.wei(魏晧焜); Joseph Lucchese
Cc:	Lear_Guo(郭忠益); vincenth@avalue-usa.com; Arnold Atienza; Aamer Chaudhry; Ryan Almeida; Taha Ramy; Dejan Marinkovic; Shadow (陳玉婷); Wu (吳朋靛); Brian_Hsu(許怡琳)
Subject:	RE: [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)

Hi HK,

Please note that we are programming flash chip not DDR2. DDR2 module requires new FW that should be preprogrammed into the flash chip.

I have sent you the flash image file that should be programmed, however we don't provide any checksum as we are not using checksums for boot up process. If you need checksum for your programming process, please generate checksum with any algorithm you need for you programmer. The checksum that was provided in the approval form for the older version was provided by the vendor of the preprogrammed chip as they set up their process.

In terms of the label, the proposed label is ok.

In terms of testing, as mentioned in the previous email, I will provide test instructions once board with 124-000048 first article installed is ready for test. I will also provide Test SW that should only be used to verify the first article.

Please note that this whole process is only to set up the programming process and be ready to change from 124-000040 to 124-000048 when we run out of currently used DDR2 module which will happen at some point in 2022. In the meantime, for production please continue using the 124-000040 preprogrammed part and Test SW that was released as part of the MFG Test Software Kit

Regards,

NEBOJSA CIROVIC | HARDWARE ARCHITECT

DOMINION VOTING SYSTEMS
1.866.654.8683 | DOMINIONVOTING.COM

From: hk.wei(魏晧焜) <hk.wei@eversun.com.tw>
Sent: Thursday, November 18, 2021 2:40 AM
To: Nebojsa Cirovic <nebojsa.cirovic@dominionvoting.com>; Joseph Lucchese <josephl@avalue-usa.com>
Cc: Lear_Guo(郭忠益) <Lear_Guo@eversun.com.tw>; vincenth@avalue-usa.com; Arnold Atienza <arnold.atienza@dominionvoting.com>; Aamer Chaudhry <aamer.chaudhry@dominionvoting.com>; Ryan Almeida <ryan.almeida@dominionvoting.com>; Taha Ramy <taha.ramy@dominionvoting.com>; Dejan Marinkovic <dejan.marinkovic@dominionvoting.com>; Shadow (陳玉婷) <shadow@eversun.com.tw>; Wu (吳朋靛) <wu@eversun.com.tw>; Brian_Hsu(許怡琳) <shiu@eversun.com.tw>
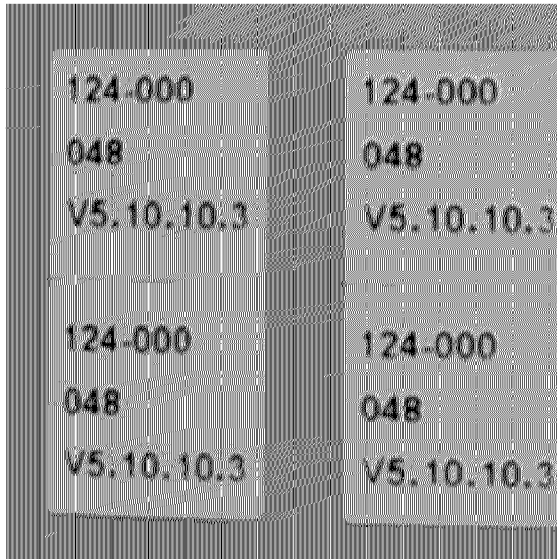**Subject:** [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)

Hi Nebojsa,

DDR2 samples have been got, I am ready to start the IC Programming of the new DDR2 corresponding FW and test, But I check that your 10/30 E-mail does not provide Check Sun, please help provide it.

Does the testing procedure need to be changed?

In addition, the label used to indicate the version on the IC uses a 6x6mm label, then please be able to agree to continue using the 3 line display method.

As shown below:

Best Regards.
****

昶亨科技股份有限公司
Eversun Electranic CO., LTD
HK.Wei 魏晧焜
Engineering Dept.
Tel: 886-7-8152243 #104
高雄市前鎮區東十街6號
****

From: Nebojsa Cirovic [mailto:nebojsa.cirovic@dominionvoting.com]
Sent: Saturday, October 30, 2021 12:45 AM
To: Joseph Lucchese
Cc: Lear_Guo(郭忠益); vincenth@avalue-usa.com; hk.wei(魏晧焜); Arnold Atienza; Aamer Chaudhry; Ryan Almeida; Taha Ramy; Dejan Marinkovic
Subject: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)
Importance: High

Hi Joe,

Please note that we are about to release ECO 100795 to replace ICE DDR module that is EoL.

2

However new DDR module is not going to work with Boot Loader FW that is currently preprogrammed into the ICE Motherboard flash chip (U4 – DVS p/n: 124-000040), hence we need to prepare new preprogrammed part (DVS p/n: 124-000048) to be ready for a switch when we use up the DDR LTB stock.

The attached is the zip archive that contains the new binary file and brief programming and marking instructions. Note that programming process should be the same as for existing 124-000040 except that new input file and new marking are required.
I remember that you had some problems interpreting the input file format previously, so please note that binary file provided contains the binary content of the flash in the same format as "124-000040_bootFlashMFG_v4.14.10.img" file provided for 124-000040 and if you had to make any adjustments to the input file to match your programming device that process is on your side and should be applied again.

Please work with Eversun to setup the 124-000048 preprogramming process and let's get FA approval process going so we can wrap that up in time. I have attached the approval form for 124-000040 for reference.
Once FA sample is ready it can be populated on one ICE motherboard and tested locally by Eversun as per instructions that I will provide later.

Once the FA approval is complete, there will be another ECO (ECO 100796) to introduce new preprogrammed part as well as new Test SW kit that works with new Boot Loader FW and verifies new PCN value for units with new DDR.

If you need any additional info, please let me know.
Regards,

NEBOJSA CIROVIC | HARDWARE ARCHITECT

DOMINION VOTING SYSTEMS
1.866.654.8683 | DOMINIONVOTING.COM

From:	hk.wei(魏晧焜) <hk.wei@eversun.com.tw>
Sent:	Friday, November 19, 2021 9:49 AM
To:	Nebojsa Cirovic; Joseph Lucchese
Cc:	Lear_Guo(郭忠益); vincenth@avalue-usa.com; Arnold Atienza; Aamer Chaudhry; Ryan Almeida; Taha Ramy; Dejan Marinkovic; Shadow (陳玉婷); Wu (吳朋靛); Brian_Hsu(許怡琳); Peter_Tang (唐志海)
Subject:	RE: [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)
Attachments:	First Article Approval Form 124-000048.docx

Hi Nebojsa,

That's right, this question is to pre-test the new FW programming of U4 IC when the DDR2 Module is changed.

Before the DDR2 module is changed, no FW changes will be made.

124-000048 First Article Approval Form has been completed, If there is any question, please let me know.

Because the IC has been programmed and the DDR2 samples have been obtained, we will try to assemble a new combination next week. If the test method needs to be changed, please guide us again to avoid errors during the formal change.

Best Regards.
****

昶亨科技股份有限公司
Eversun Electranic CO., LTD
HK.Wei 魏晧焜
Engineering Dept.
Tel: 886-7-8152243 #104
高雄市前鎮區東十街6號
****

From: Nebojsa Cirovic [mailto:nebojsa.cirovic@dominionvoting.com]
Sent: Friday, November 19, 2021 12:56 AM
To: hk.wei(魏晧焜); Joseph Lucchese
Cc: Lear_Guo(郭忠益); vincenth@avalue-usa.com; Arnold Atienza; Aamer Chaudhry; Ryan Almeida; Taha Ramy; Dejan Marinkovic; Shadow (陳玉婷); Wu (吳朋靛); Brian_Hsu(許怡琳)
Subject: RE: [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)

Hi HK,

1

Please note that we are programming flash chip not DDR2. DDR2 module requires new FW that should be preprogrammed into the flash chip.

I have sent you the flash image file that should be programmed, however we don't provide any checksum as we are not using checksums for boot up process. If you need checksum for your programming process, please generate checksum with any algorithm you need for you programmer. The checksum that was provided in the approval form for the older version was provided by the vendor of the preprogrammed chip as they set up their process.

In terms of the label, the proposed label is ok.

In terms of testing, as mentioned in the previous email, I will provide test instructions once board with 124-000048 first article installed is ready for test. I will also provide Test SW that should only be used to verify the first article.

Please note that this whole process is only to set up the programming process and be ready to change from 124-000040 to 124-000048 when we run out of currently used DDR2 module which will happen at some point in 2022. In the meantime, for production please continue using the 124-000040 preprogrammed part and Test SW that was released as part of the MFG Test Software Kit

Regards,

NEBOJSA CIROVIC | HARDWARE ARCHITECT

DOMINION VOTING SYSTEMS
1.866.654.8683 | DOMINIONVOTING.COM

From: hk.wei(魏晧焜) <hk.wei@eversun.com.tw>
Sent: Thursday, November 18, 2021 2:40 AM
To: Nebojsa Cirovic <nebojsa.cirovic@dominionvoting.com>; Joseph Lucchese <josephl@avalue-usa.com>
Cc: Lear_Guo(郭忠益) <Lear_Guo@eversun.com.tw>; vincenth@avalue-usa.com; Arnold Atienza <arnold.atienza@dominionvoting.com>; Aamer Chaudhry <aamer.chaudhry@dominionvoting.com>; Ryan Almeida <ryan.almeida@dominionvoting.com>; Taha Ramy <taha.ramy@dominionvoting.com>; Dejan Marinkovic <dejan.marinkovic@dominionvoting.com>; Shadow (陳玉婷) <shadow@eversun.com.tw>; Wu (吳朋諚) <wu@eversun.com.tw>; Brian_Hsu(許怡琳) <shiu@eversun.com.tw>
Subject: [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)
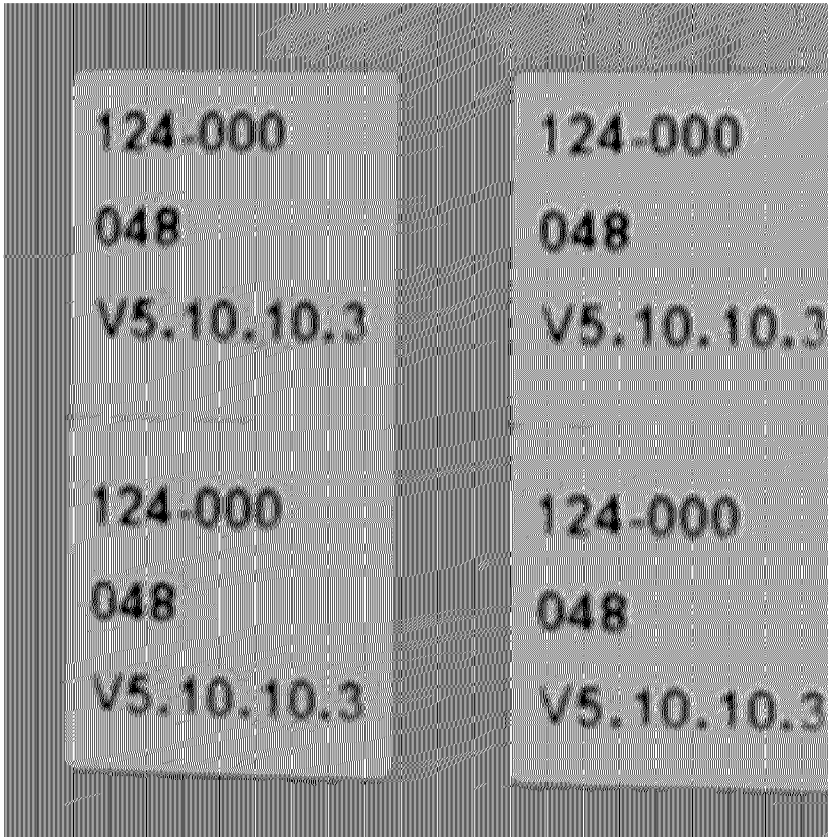
Hi Nebojsa,

DDR2 samples have been got, I am ready to start the IC Programming of the new DDR2 corresponding FW and test, But I check that your 10/30 E-mail does not provide Check Sun, please help provide it.

Does the testing procedure need to be changed?

In addition, the label used to indicate the version on the IC uses a 6x6mm label, then please be able to agree to continue using the 3 line display method.

As shown below:

2

Best Regards.
****

昶亨科技股份有限公司
Eversun Electranic CO., LTD
HK.Wei 魏晧焜
Engineering Dept.
Tel: 886-7-8152243 #104
高雄市前鎮區東十街6號
****

From: Nebojsa Cirovic [mailto:nebojsa.cirovic@dominionvoting.com]
Sent: Saturday, October 30, 2021 12:45 AM
To: Joseph Lucchese
Cc: Lear_Guo(郭忠益); vincenth@avalue-usa.com; hk.wei(魏晧焜); Arnold Atienza; Aamer Chaudhry; Ryan Almeida; Taha Ramy; Dejan Marinkovic
Subject: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)
Importance: High

Hi Joe,

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However new DDR module is not going to work with Boot Loader FW that is currently preprogrammed into the ICE Motherboard flash chip (U4 – DVS p/n: 124-000040), hence we need to prepare new preprogrammed part (DVS p/n: 124-000048) to be ready for a switch when we use up the DDR LTB stock.

3

The attached is the zip archive that contains the new binary file and brief programming and marking instructions. Note that programming process should be the same as for existing 124-000040 except that new input file and new marking are required.

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Please work with Eversun to setup the 124-000048 preprogramming process and let's get FA approval process going so we can wrap that up in time. I have attached the approval form for 124-000040 for reference.

Once FA sample is ready it can be populated on one ICE motherboard and tested locally by Eversun as per instructions that I will provide later.

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If you need any additional info, please let me know.

Regards,

NEBOJSA CIROVIC | HARDWARE ARCHITECT

DOMINION VOTING SYSTEMS
1.866.654.8683 | DOMINIONVOTING.COM

From:	Nebojsa Cirovic
Sent:	Friday, November 19, 2021 6:22 PM
To:	hk.wei(魏晧焜); Joseph Lucchese
Cc:	Lear_Guo(郭忠益); vincenth@avalue-usa.com; Arnold Atienza; Aamer Chaudhry; Ryan Almeida; Taha Ramy; Dejan Marinkovic; Shadow (陳玉婷); Wu (吳朋靛); Brian_Hsu(許怡琳); Peter_Tang (唐志海)
Subject:	RE: [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)

Hi HK,

Great! Thanks for clarification.
I will prepare and upload the test files and brief instructions for verification early next week.

Regards,

NEBOJSA CIROVIC | HARDWARE ARCHITECT

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1.866.654.8683 | DOMINIONVOTING.COM

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Sent: Friday, November 19, 2021 4:49 AM
To: Nebojsa Cirovic <nebojsa.cirovic@dominionvoting.com>; Joseph Lucchese <josephl@avalue-usa.com>
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Hi Nebojsa,

That's right, this question is to pre-test the new FW programming of U4 IC when the DDR2 Module is changed.

Before the DDR2 module is changed, no FW changes will be made.

124-000048 First Article Approval Form has been completed, If there is any question, please let me know.

Because the IC has been programmed and the DDR2 samples have been obtained, we will try to assemble a new combination next week. If the test method needs to be changed, please guide us again to avoid errors during the formal change.

Best Regards.

1

```
****************************************
昶亨科技股份有限公司
Eversun Electranic CO., LTD
HK.Wei 魏晧焜
Engineering Dept.
Tel: 886-7-8152243 #104
高雄市前鎮區東十街6號
****************************************
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From: Nebojsa Cirovic [mailto:nebojsa.cirovic@dominionvoting.com]
Sent: Friday, November 19, 2021 12:56 AM
To: hk.wei(魏晧焜); Joseph Lucchese
Cc: Lear_Guo(郭忠益); vincenth@avalue-usa.com; Arnold Atienza; Aamer Chaudhry; Ryan Almeida; Taha Ramy; Dejan Marinkovic; Shadow (陳玉婷); Wu (吳朋諪); Brian_Hsu(許怡琳)
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In terms of the label, the proposed label is ok.

In terms of testing, as mentioned in the previous email, I will provide test instructions once board with 124-000048 first article installed is ready for test. I will also provide Test SW that should only be used to verify the first article.

Please note that this whole process is only to set up the programming process and be ready to change from 124-000040 to 124-000048 when we run out of currently used DDR2 module which will happen at some point in 2022. In the meantime, for production please continue using the 124-000040 preprogrammed part and Test SW that was released as part of the MFG Test Software Kit

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NEBOJSA CIROVIC | HARDWARE ARCHITECT

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To: Nebojsa Cirovic <nebojsa.cirovic@dominionvoting.com>; Joseph Lucchese <josephl@avalue-usa.com>
Cc: Lear_Guo(郭忠益) <Lear_Guo@eversun.com.tw>; vincenth@avalue-usa.com; Arnold Atienza

2

DOM_DC04299039

<arnold.atienza@dominionvoting.com>; Aamer Chaudhry <aamer.chaudhry@dominionvoting.com>; Ryan Almeida <ryan.almeida@dominionvoting.com>; Taha Ramy <taha.ramy@dominionvoting.com>; Dejan Marinkovic <dejan.marinkovic@dominionvoting.com>; Shadow (陳玉婷) <shadow@eversun.com.tw>; Wu (吳朋靛) <wu@eversun.com.tw>; Brian_Hsu(許怡琳) <shiu@eversun.com.tw>
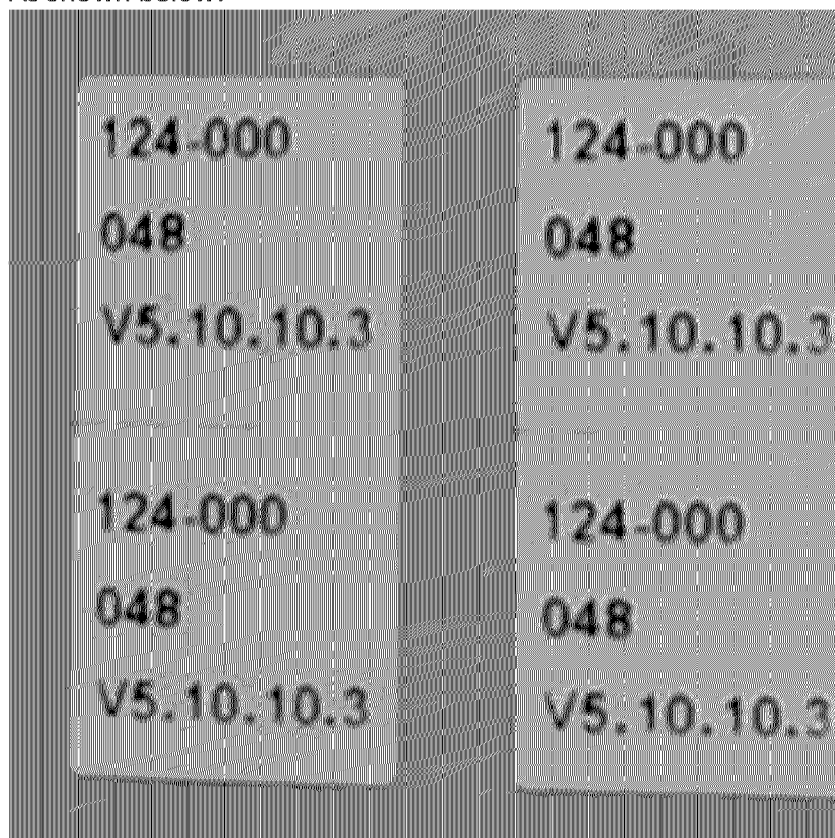**Subject:** [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)

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Does the testing procedure need to be changed?

In addition, the label used to indicate the version on the IC uses a 6x6mm label, then please be able to agree to continue using the 3 line display method.

As shown below:

Best Regards.
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昶亨科技股份有限公司
Eversun Electranic CO., LTD
HK.Wei 魏晧焜
Engineering Dept.
Tel: 886-7-8152243 #104
高雄市前鎮區東十街6號

DOM_DC04299040

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DOM_DC04299041

From:	Nebojsa Cirovic
Sent:	Friday, November 26, 2021 9:08 PM
To:	hk.wei(魏晧焜); Joseph Lucchese
Cc:	Lear_Guo(郭忠益); vincenth@avalue-usa.com; Arnold Atienza; Aamer Chaudhry; Ryan Almeida; 'Taha Ramy'; Dejan Marinkovic; Shadow (陳玉婷); Wu (吳朋靛); Brian_Hsu(許怡琳); Peter_Tang (唐志海)
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In order to approve the FA we need to pass the tests described above and you have to send us the console log that captured the whole process for verification.

If there are any issues at boot-up, please share the console log with us so we can assist with troubleshooting.
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DOMINION VOTING SYSTEMS
1.866.654.8683 | DOMINIONVOTING.COM

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Sent: Thursday, November 18, 2021 2:40 AM
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Cc: Lear_Guo(郭忠益) <Lear_Guo@eversun.com.tw>; vincenth@avalue-usa.com; Arnold Atienza <arnold.atienza@dominionvoting.com>; Aamer Chaudhry <aamer.chaudhry@dominionvoting.com>; Ryan Almeida <ryan.almeida@dominionvoting.com>; Taha Ramy <taha.ramy@dominionvoting.com>; Dejan Marinkovic <dejan.marinkovic@dominionvoting.com>; Shadow (陳玉婷) <shadow@eversun.com.tw>; Wu (吳朋靛) <wu@eversun.com.tw>; Brian_Hsu(許怡琳) <shiu@eversun.com.tw>
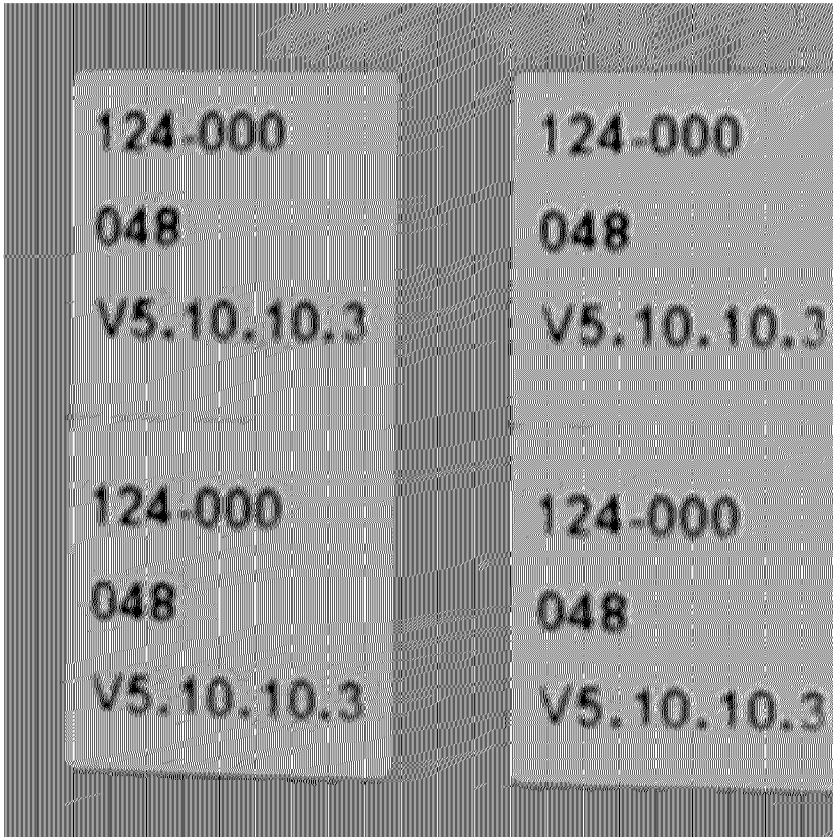**Subject:** [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)

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Engineering Dept.
Tel: 886-7-8152243 #104
高雄市前鎮區東十街6號
****

From: Nebojsa Cirovic [mailto:nebojsa.cirovic@dominionvoting.com]
Sent: Saturday, October 30, 2021 12:45 AM
To: Joseph Lucchese
Cc: Lear_Guo(郭忠益); vincenth@avalue-usa.com; hk.wei(魏晧焜); Arnold Atienza; Aamer Chaudhry; Ryan Almeida; Taha Ramy; Dejan Marinkovic
Subject: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)
Importance: High

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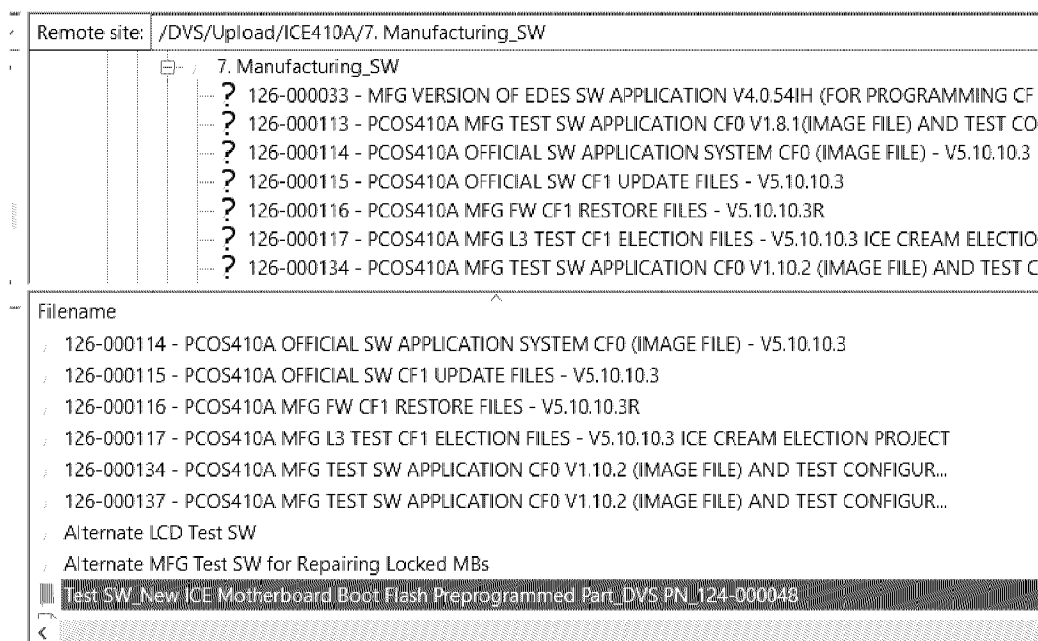Regards,

NEBOJSA CIROVIC | HARDWARE ARCHITECT

DOMINION VOTING SYSTEMS
1.866.654.8683 | DOMINIONVOTING.COM

From:	Ryan Almeida
Sent:	Monday, November 29, 2021 1:46 AM
To:	Nebojsa Cirovic; hk.wei(魏晧焜); Joseph Lucchese
Cc:	Lear_Guo(郭忠益); vincenth@avalue-usa.com; Arnold Atienza; Aamer Chaudhry; Taha Ramy; Dejan Marinkovic; Shadow (陳玉婷); Wu (吳朋靛); Brian_Hsu(許怡琳); Peter_Tang (唐志海)
Subject:	RE: [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)

Hi HK,

Per Nebojsa's email, I have placed the file in this location:

I believe the FTP File transfer was successful this time as I did not receive any error messages, and the file size also looks similar. However, let me know if there are any issues, and I will transfer via Dropbox if need be.

Thanks,

RYAN ALMEIDA | HARDWARE ENGINEER

DOMINION VOTING SYSTEMS
1.866.654.8683 | DOMINIONVOTING.COM

From: Nebojsa Cirovic <nebojsa.cirovic@dominionvoting.com>
Sent: November 26, 2021 4:08 PM
To: hk.wei(魏晧焜) <hk.wei@eversun.com.tw>; Joseph Lucchese <josephl@avalue-usa.com>
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高雄市前鎮區東十街6號
****

From: Nebojsa Cirovic [mailto:nebojsa.cirovic@dominionvoting.com]
Sent: Friday, November 19, 2021 12:56 AM
To: hk.wei(魏晧焜); Joseph Lucchese
Cc: Lear_Guo(郭忠益); vincenth@avalue-usa.com; Arnold Atienza; Aamer Chaudhry; Ryan Almeida; Taha Ramy; Dejan Marinkovic; Shadow (陳玉婷); Wu (吳朋靛); Brian_Hsu(許怡琳)
Subject: RE: [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)

Hi HK,

Please note that we are programming flash chip not DDR2. DDR2 module requires new FW that should be preprogrammed into the flash chip.

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Regards,

NEBOJSA CIROVIC | HARDWARE ARCHITECT

DOMINION VOTING SYSTEMS
1.866.654.8683 | DOMINIONVOTING.COM

From: hk.wei(魏哠焜) <hk.wei@eversun.com.tw>
Sent: Thursday, November 18, 2021 2:40 AM
To: Nebojsa Cirovic <nebojsa.cirovic@dominionvoting.com>; Joseph Lucchese <josephl@avalue-usa.com>
Cc: Lear_Guo(郭忠益) <Lear_Guo@eversun.com.tw>; vincenth@avalue-usa.com; Arnold Atienza <arnold.atienza@dominionvoting.com>; Aamer Chaudhry <aamer.chaudhry@dominionvoting.com>; Ryan Almeida <ryan.almeida@dominionvoting.com>; Taha Ramy <taha.ramy@dominionvoting.com>; Dejan Marinkovic <dejan.marinkovic@dominionvoting.com>; Shadow (陳玉婷) <shadow@eversun.com.tw>; Wu (吳朋靛) <wu@eversun.com.tw>; Brian_Hsu(許怡琳) <shiu@eversun.com.tw>
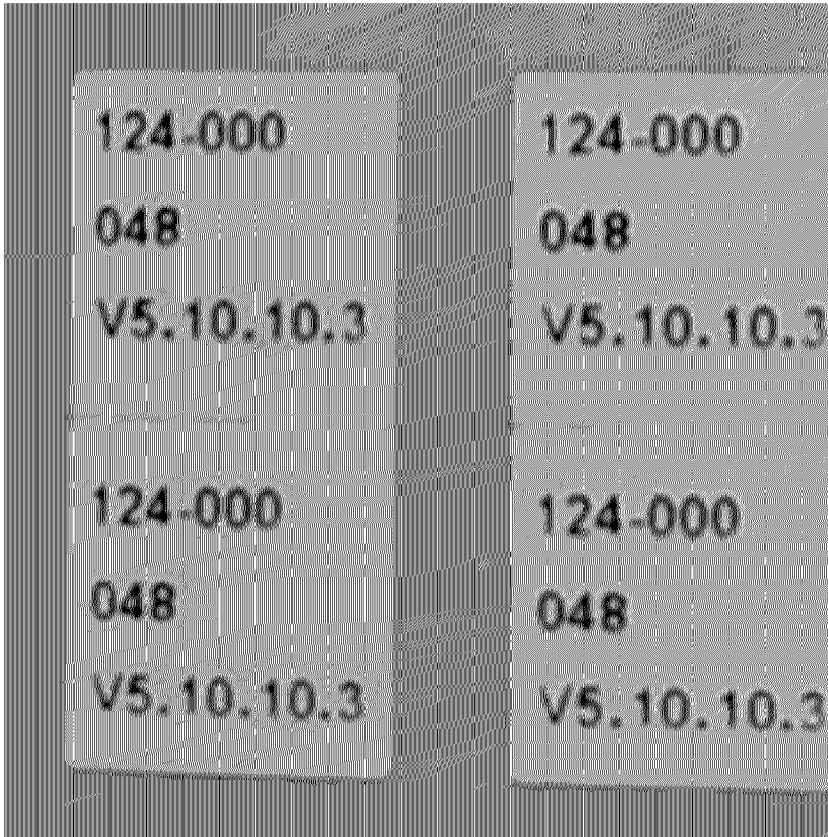**Subject:** [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)

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Does the testing procedure need to be changed?

In addition, the label used to indicate the version on the IC uses a 6x6mm label, then please be able to agree to continue using the 3 line display method.

As shown below:

4

Best Regards.
****
昶亨科技股份有限公司
Eversun Electranic CO., LTD
HK.Wei 魏晧焜
Engineering Dept.
Tel: 886-7-8152243 #104
高雄市前鎮區東十街6號
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From: Nebojsa Cirovic [mailto:nebojsa.cirovic@dominionvoting.com]
Sent: Saturday, October 30, 2021 12:45 AM
To: Joseph Lucchese
Cc: Lear_Guo(郭忠益); vincenth@avalue-usa.com; hk.wei(魏晧焜); Arnold Atienza; Aamer Chaudhry; Ryan Almeida; Taha Ramy; Dejan Marinkovic
Subject: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)
Importance: High

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However new DDR module is not going to work with Boot Loader FW that is currently preprogrammed into the ICE Motherboard flash chip (U4 – DVS p/n: 124-000040), hence we need to prepare new preprogrammed part (DVS p/n: 124-000048) to be ready for a switch when we use up the DDR LTB stock.

The attached is the zip archive that contains the new binary file and brief programming and marking instructions. Note that programming process should be the same as for existing 124-000040 except that new input file and new marking are required.

I remember that you had some problems interpreting the input file format previously, so please note that binary file provided contains the binary content of the flash in the same format as "124-000040_bootFlashMFG_v4.14.10.img" file provided for 124-000040 and if you had to make any adjustments to the input file to match your programming device that process is on your side and should be applied again.

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If you need any additional info, please let me know.
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NEBOJSA CIROVIC | HARDWARE ARCHITECT

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From:	hk.wei(魏晧焜) <hk.wei@eversun.com.tw>
Sent:	Monday, November 29, 2021 3:12 AM
To:	Ryan Almeida; Nebojsa Cirovic; Joseph Lucchese
Cc:	Lear_Guo(郭忠益); vincenth@avalue-usa.com; Arnold Atienza; Aamer Chaudhry; Taha Ramy; Dejan Marinkovic; Shadow (陳玉婷); Wu (吳朋靛); Brian_Hsu(許怡琳); Peter_Tang (唐志海)
Subject:	RE: [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)

Hi Ryan,

Thank you. The file has been downloaded from FTP.
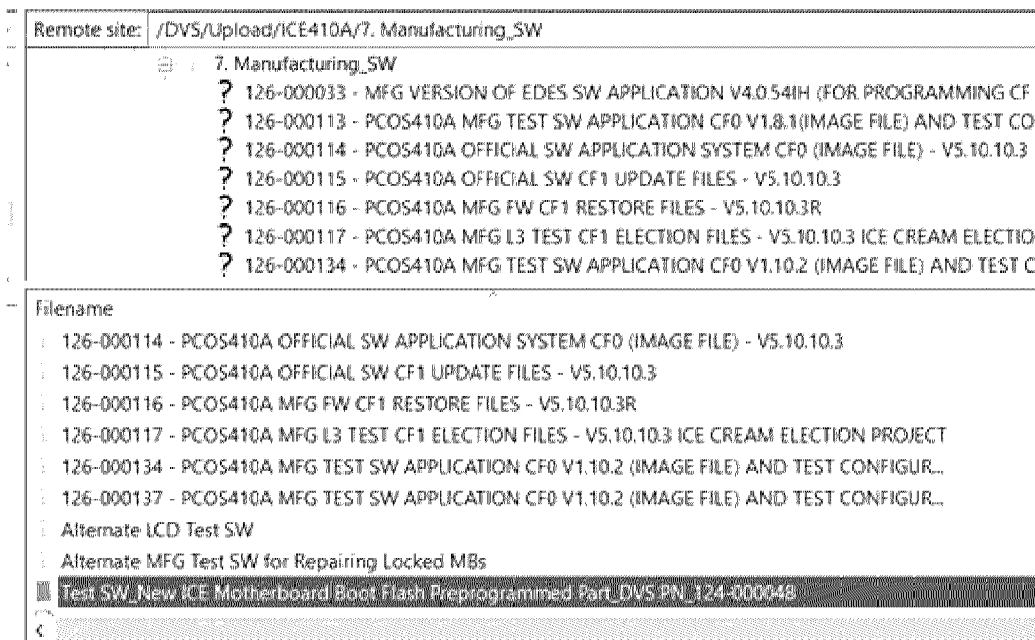We will arrange the test and reply to the console log as soon as possible.

Best Regards.
****
昶亨科技股份有限公司
Eversun Electranic CO., LTD
HK.Wei 魏晧焜
Engineering Dept.
Tel: 886-7-8152243 #104
高雄市前鎮區東十街6號
****

From: Ryan Almeida [mailto:ryan.almeida@dominionvoting.com]
Sent: Monday, November 29, 2021 9:46 AM
To: Nebojsa Cirovic; hk.wei(魏晧焜); Joseph Lucchese
Cc: Lear_Guo(郭忠益); vincenth@avalue-usa.com; Arnold Atienza; Aamer Chaudhry; Taha Ramy; Dejan Marinkovic; Shadow (陳玉婷); Wu (吳朋靛); Brian_Hsu(許怡琳); Peter_Tang (唐志海)
Subject: RE: [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)

Hi HK,

Per Nebojsa's email, I have placed the file in this location:

I believe the FTP File transfer was successful this time as I did not receive any error messages, and the file size also looks similar. However, let me know if there are any issues, and I will transfer via Dropbox if need be.

Thanks,

RYAN ALMEIDA | HARDWARE ENGINEER

DOMINION VOTING SYSTEMS
1.866.654.8683 | DOMINIONVOTING.COM

From: Nebojsa Cirovic <nebojsa.cirovic@dominionvoting.com>
Sent: November 26, 2021 4:08 PM
To: hk.wei(魏晧焜) <hk.wei@eversun.com.tw>; Joseph Lucchese <josephl@avalue-usa.com>
Cc: Lear_Guo(郭忠益) <Lear_Guo@eversun.com.tw>; vincenth@avalue-usa.com; Arnold Atienza <arnold.atienza@dominionvoting.com>; Aamer Chaudhry <aamer.chaudhry@dominionvoting.com>; Ryan Almeida <ryan.almeida@dominionvoting.com>; Taha Ramy <taha.ramy@dominionvoting.com>; Dejan Marinkovic <dejan.marinkovic@dominionvoting.com>; Shadow (陳玉婷) <shadow@eversun.com.tw>; Wu (吳朋靛) <wu@eversun.com.tw>; Brian_Hsu(許怡琳) <shiu@eversun.com.tw>; Peter_Tang (唐志海) <tang@eversun.com.tw>
Subject: RE: [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)

Hi HK,

I have prepared a Test SW CF0 image to support the test of the new preprogrammed part, Ryan will be uploading it shortly on Avalue FTP.

In terms of the test, you need a motherboard with new chip installed placed into L0 MB test station as you would normally for any new board. Once the setup is ready, please use the CF0 with new Test SW (v2.0.1-FlashTest) and connect the console to your PC. Ensure you capture the console log from the moment the unit is turned on.

If the chip is programmed properly, unit should boot up normally and you should be able to enter MFG Tests and select L0 MB Test – Flash where you would have to pass the automated tests that will verify the flash content.

In order to approve the FA we need to pass the tests described above and you have to send us the console log that captured the whole process for verification.

If there are any issues at boot-up, please share the console log with us so we can assist with troubleshooting.
Regards,

NEBOJSA CIROVIC | HARDWARE ARCHITECT

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From: Nebojsa Cirovic
Sent: Friday, November 19, 2021 1:22 PM
To: hk.wei(魏晧焜) <hk.wei@eversun.com.tw>; Joseph Lucchese <josephl@avalue-usa.com>
Cc: Lear_Guo(郭忠益) <Lear_Guo@eversun.com.tw>; vincenth@avalue-usa.com; Arnold Atienza <Arnold.Atienza@dominionvoting.com>; Aamer Chaudhry <aamer.chaudhry@dominionvoting.com>; Ryan Almeida <ryan.almeida@dominionvoting.com>; Taha Ramy <taha.ramy@dominionvoting.com>; Dejan Marinkovic <dejan.marinkovic@dominionvoting.com>; Shadow (陳玉婷) <shadow@eversun.com.tw>; Wu (吳朋靛) <wu@eversun.com.tw>; Brian_Hsu(許怡琳) <shiu@eversun.com.tw>; Peter_Tang (唐志海) <tang@eversun.com.tw>
Subject: RE: [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)

Hi HK,

Great! Thanks for clarification.
I will prepare and upload the test files and brief instructions for verification early next week.

Regards,

NEBOJSA CIROVIC | HARDWARE ARCHITECT

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Hi Nebojsa,

That's right, this question is to pre-test the new FW programming of U4 IC when the DDR2 Module is changed.

Before the DDR2 module is changed, no FW changes will be made.

3

124-000048 First Article Approval Form has been completed, If there is any question, please let me know.

Because the IC has been programmed and the DDR2 samples have been obtained, we will try to assemble a new combination next week. If the test method needs to be changed, please guide us again to avoid errors during the formal change.

Best Regards.
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4

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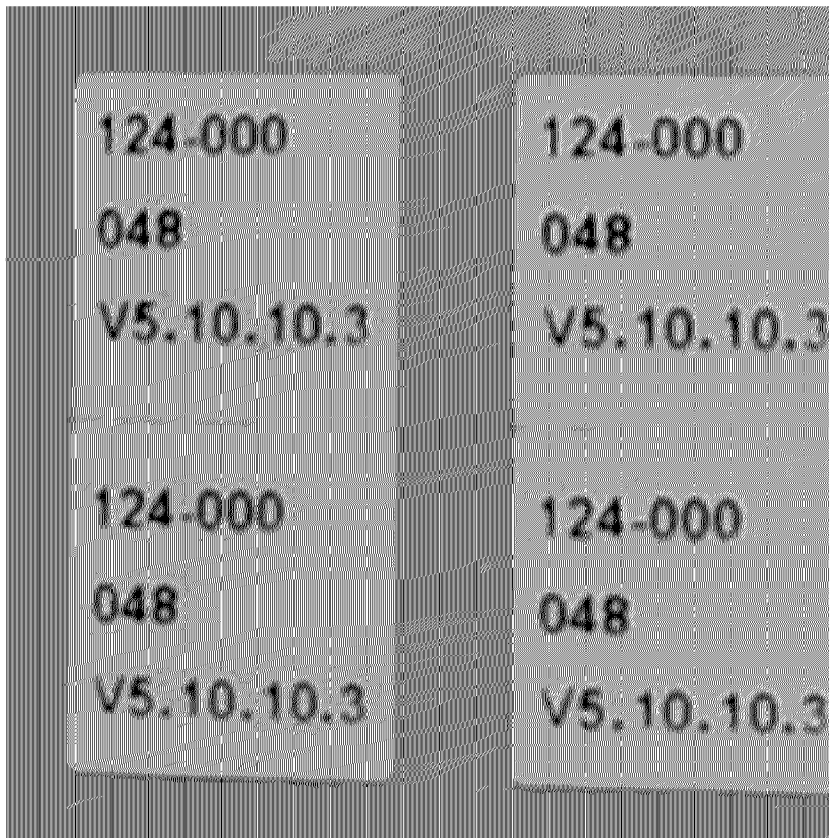
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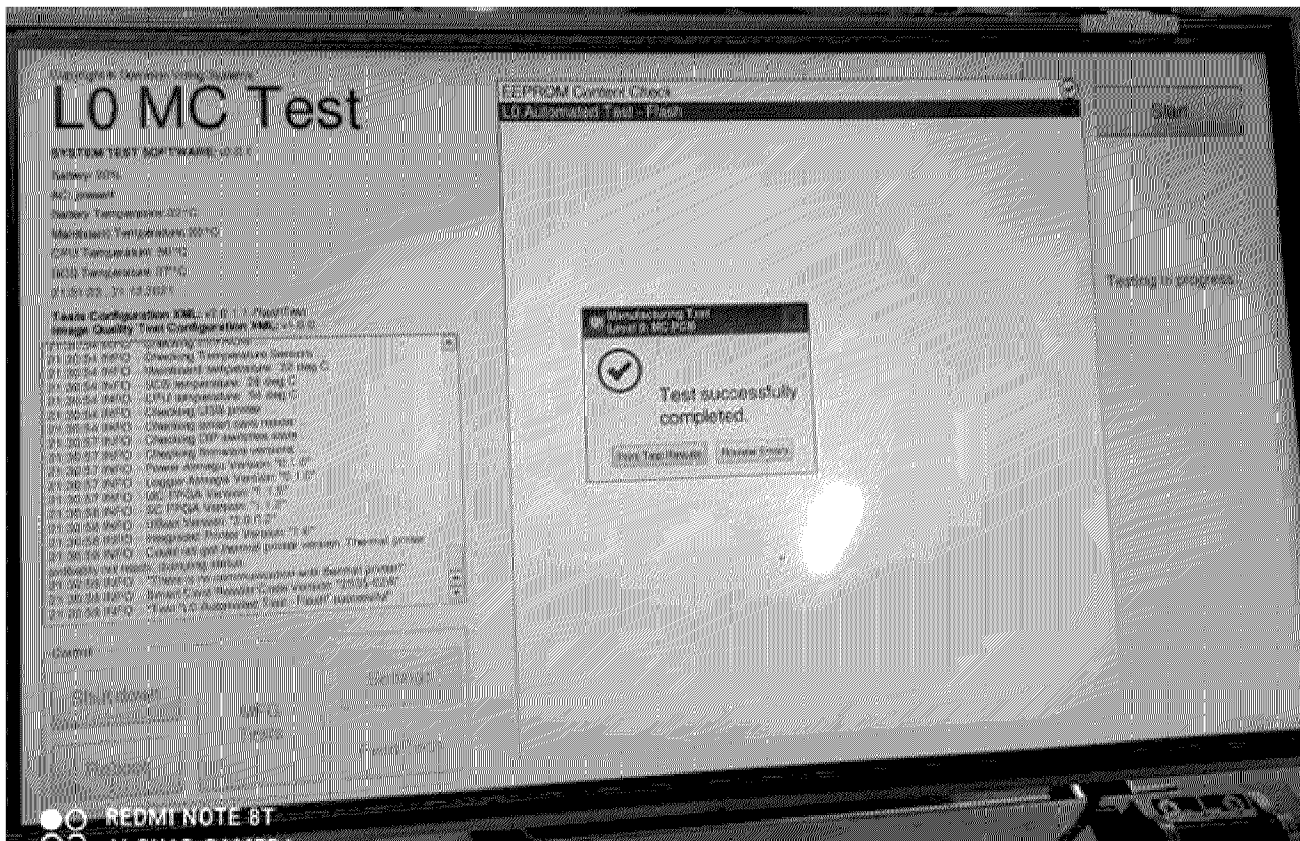If you need any additional info, please let me know.
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DOMINION VOTING SYSTEMS
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6

From:	hk.wei(魏晧焜) <hk.wei@eversun.com.tw>
Sent:	Thursday, December 2, 2021 11:58 AM
To:	Nebojsa Cirovic; Joseph Lucchese
Cc:	Lear_Guo(郭忠益); alex.hsu (許福隆); vincenth@avalue-usa.com; Arnold Atienza; Aamer Chaudhry; Ryan Almeida; Taha Ramy; Dejan Marinkovic; Shadow (陳玉婷); Wu (吳朋錠); Brian_Hsu(許怡琳); Peter_Tang (唐志海)
Subject:	RE: [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)
Attachments:	DDR2 Change console log.txt

Hi Nebojsa,

Our Test team has completed the testing of this DDR2 change.
Please see the picture below for the test completion screen.
console log Please refer to the attached file.
If there is any question, please let me know.

Best Regards.
****
昶亨科技股份有限公司

1

Eversun Electranic CO., LTD
HK.Wei 魏晧焜
Engineering Dept.
Tel: 886-7-8152243 #104
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NEBOJSA CIROVIC | HARDWARE ARCHITECT

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Subject: RE: [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)

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Before the DDR2 module is changed, no FW changes will be made.

124-000048 First Article Approval Form has been completed, If there is any question, please let me know.

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Regards,

NEBOJSA CIROVIC | HARDWARE ARCHITECT

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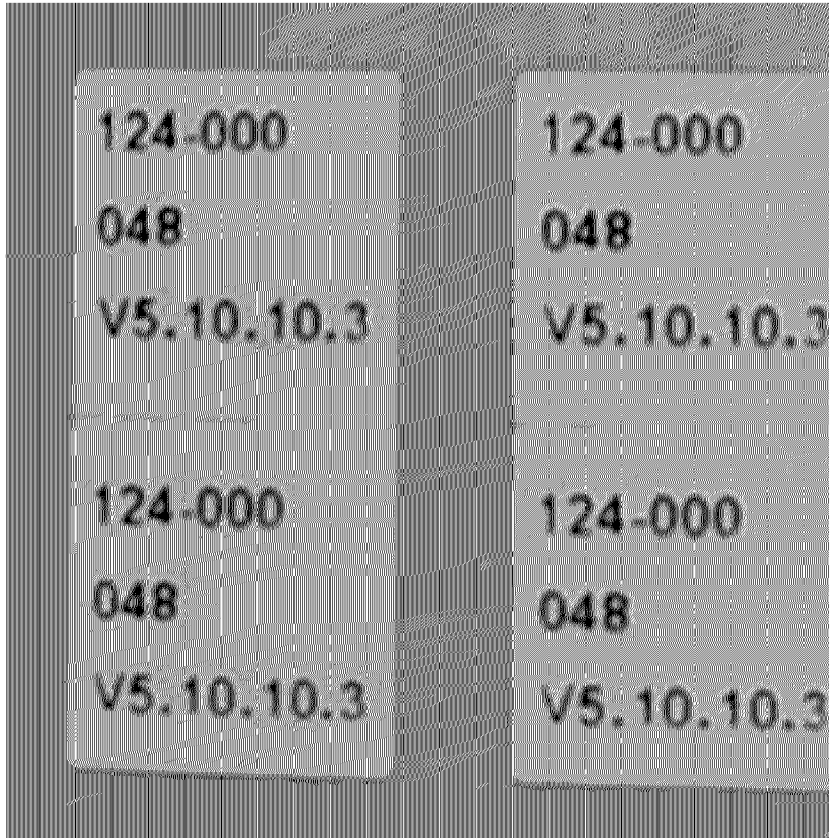
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DDR2 samples have been got, I am ready to start the IC Programming of the new DDR2 corresponding FW and test, But I check that your 10/30 E-mail does not provide Check Sun, please help provide it.

Does the testing procedure need to be changed?

In addition, the label used to indicate the version on the IC uses a 6x6mm label, then please be able to agree to continue using the 3 line display method.

As shown below:

Best Regards.
****
昶亨科技股份有限公司
Eversun Electranic CO., LTD
HK.Wei 魏晧焜
Engineering Dept.
Tel: 886-7-8152243 #104
高雄市前鎮區東十街6號
****

From: Nebojsa Cirovic [mailto:nebojsa.cirovic@dominionvoting.com]
Sent: Saturday, October 30, 2021 12:45 AM
To: Joseph Lucchese
Cc: Lear_Guo(郭忠益); vincenth@avalue-usa.com; hk.wei(魏晧焜); Arnold Atienza; Aamer Chaudhry; Ryan Almeida; Taha Ramy; Dejan Marinkovic
Subject: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)
Importance: High

Hi Joe,

Please note that we are about to release ECO 100795 to replace ICE DDR module that is EoL.

5

However new DDR module is not going to work with Boot Loader FW that is currently preprogrammed into the ICE Motherboard flash chip (U4 – DVS p/n: 124-000040), hence we need to prepare new preprogrammed part (DVS p/n: 124-000048) to be ready for a switch when we use up the DDR LTB stock.

The attached is the zip archive that contains the new binary file and brief programming and marking instructions. Note that programming process should be the same as for existing 124-000040 except that new input file and new marking are required.
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Please work with Eversun to setup the 124-000048 preprogramming process and let's get FA approval process going so we can wrap that up in time. I have attached the approval form for 124-000040 for reference.
Once FA sample is ready it can be populated on one ICE motherboard and tested locally by Eversun as per instructions that I will provide later.

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If you need any additional info, please let me know.
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NEBOJSA CIROVIC | HARDWARE ARCHITECT

DOMINION VOTING SYSTEMS
1.866.654.8683 | DOMINIONVOTING.COM

From:	Nebojsa Cirovic
Sent:	Thursday, December 2, 2021 3:23 PM
To:	hk.wei(魏晧焜); Joseph Lucchese
Cc:	Lear_Guo(郭忠益); alex.hsu (許福隆); vincenth@avalue-usa.com; Arnold Atienza; Aamer Chaudhry; Ryan Almeida; Taha Ramy; Dejan Marinkovic; Shadow (陳玉婷); Wu (吳朋靛); Brian_Hsu(許怡琳); Peter_Tang (唐志海)
Subject:	RE: [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)

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This looks promising but the console log that you provided is incomplete, it just has the part where the test results are printed. I have asked for the console log from the moment the unit is tuned on as that would provide a log data from bootloader, kernel and test SW all at once so I can verify that everything is ok. Please repeat the test and provide the complete console log so I can approve the FA samples.
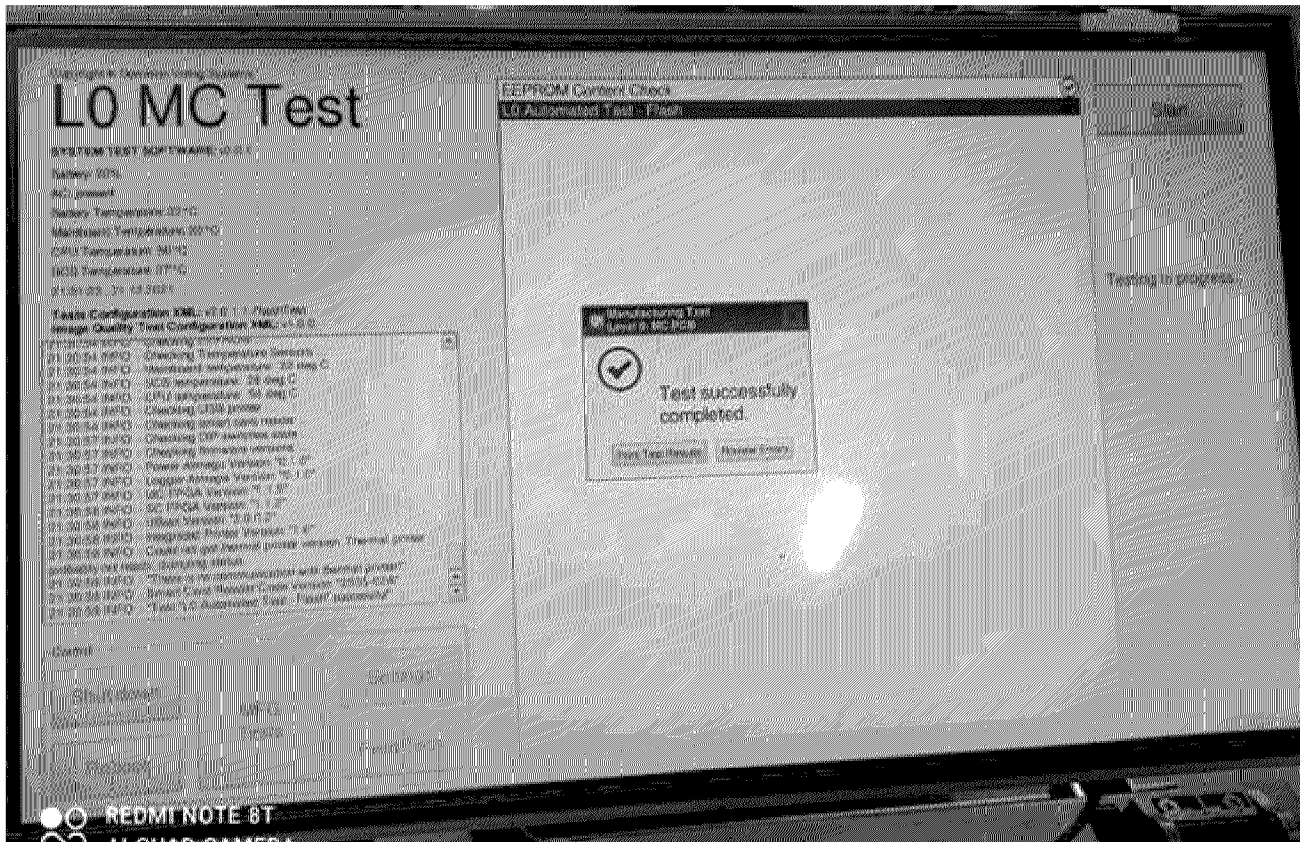
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Sent: Thursday, December 2, 2021 6:58 AM
To: Nebojsa Cirovic <nebojsa.cirovic@dominionvoting.com>; Joseph Lucchese <josephl@avalue-usa.com>
Cc: Lear_Guo(郭忠益) <Lear_Guo@eversun.com.tw>; alex.hsu (許福隆) <alex.hsu@eversun.com.tw>; vincenth@avalue-usa.com; Arnold Atienza <arnold.atienza@dominionvoting.com>; Aamer Chaudhry <aamer.chaudhry@dominionvoting.com>; Ryan Almeida <ryan.almeida@dominionvoting.com>; Taha Ramy <taha.ramy@dominionvoting.com>; Dejan Marinkovic <dejan.marinkovic@dominionvoting.com>; Shadow (陳玉婷) <shadow@eversun.com.tw>; Wu (吳朋靛) <wu@eversun.com.tw>; Brian_Hsu(許怡琳) <shiu@eversun.com.tw>; Peter_Tang (唐志海) <tang@eversun.com.tw>
Subject: RE: [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)

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Our Test team has completed the testing of this DDR2 change.
Please see the picture below for the test completion screen.
console log Please refer to the attached file.
If there is any question, please let me know.

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Hi HK,

I have prepared a Test SW CF0 image to support the test of the new preprogrammed part, Ryan will be uploading it shortly on Avalue FTP.

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In terms of the test, you need a motherboard with new chip installed placed into L0 MB test station as you would normally for any new board. Once the setup is ready, please use the CF0 with new Test SW (v2.0.1-FlashTest) and connect the console to your PC. Ensure you capture the console log from the moment the unit is turned on.

If the chip is programmed properly, unit should boot up normally and you should be able to enter MFG Tests and select L0 MB Test – Flash where you would have to pass the automated tests that will verify the flash content.

In order to approve the FA we need to pass the tests described above and you have to send us the console log that captured the whole process for verification.

If there are any issues at boot-up, please share the console log with us so we can assist with troubleshooting.
Regards,

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Subject: RE: [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)

Hi HK,

Great! Thanks for clarification.
I will prepare and upload the test files and brief instructions for verification early next week.

Regards,

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Subject: RE: [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)

Hi Nebojsa,

3

That's right, this question is to pre-test the new FW programming of U4 IC when the DDR2 Module is changed.

Before the DDR2 module is changed, no FW changes will be made.

124-000048 First Article Approval Form has been completed, If there is any question, please let me know.

Because the IC has been programmed and the DDR2 samples have been obtained, we will try to assemble a new combination next week. If the test method needs to be changed, please guide us again to avoid errors during the formal change.

Best Regards.
****
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Eversun Electranic CO., LTD
HK.Wei 魏晧焜
Engineering Dept.
Tel: 886-7-8152243 #104
高雄市前鎮區東十街6號
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From: Nebojsa Cirovic [mailto:nebojsa.cirovic@dominionvoting.com]
Sent: Friday, November 19, 2021 12:56 AM
To: hk.wei(魏晧焜); Joseph Lucchese

Cc: Lear_Guo(郭忠益); vincenth@avalue-usa.com; Arnold Atienza; Aamer Chaudhry; Ryan Almeida; Taha Ramy; Dejan Marinkovic; Shadow (陳玉婷); Wu (吳朋諚); Brian_Hsu(許怡琳)
Subject: RE: [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)

Hi HK,

Please note that we are programming flash chip not DDR2. DDR2 module requires new FW that should be preprogrammed into the flash chip.

I have sent you the flash image file that should be programmed, however we don't provide any checksum as we are not using checksums for boot up process. If you need checksum for your programming process, please generate checksum with any algorithm you need for you programmer. The checksum that was provided in the approval form for the older version was provided by the vendor of the preprogrammed chip as they set up their process.

In terms of the label, the proposed label is ok.

In terms of testing, as mentioned in the previous email, I will provide test instructions once board with 124-000048 first article installed is ready for test. I will also provide Test SW that should only be used to verify the first article.

Please note that this whole process is only to set up the programming process and be ready to change from 124-000040 to 124-000048 when we run out of currently used DDR2 module which will happen at some point in 2022. In the

4

meantime, for production please continue using the 124-000040 preprogrammed part and Test SW that was released as part of the MFG Test Software Kit

Regards,

NEBOJSA CIROVIC | HARDWARE ARCHITECT

DOMINION VOTING SYSTEMS
1.866.654.8683 | DOMINIONVOTING.COM

From: hk.wei(魏晧焜) <hk.wei@eversun.com.tw>
Sent: Thursday, November 18, 2021 2:40 AM
To: Nebojsa Cirovic <nebojsa.cirovic@dominionvoting.com>; Joseph Lucchese <josephl@avalue-usa.com>
Cc: Lear_Guo(郭忠益) <Lear_Guo@eversun.com.tw>; vincenth@avalue-usa.com; Arnold Atienza <arnold.atienza@dominionvoting.com>; Aamer Chaudhry <aamer.chaudhry@dominionvoting.com>; Ryan Almeida <ryan.almeida@dominionvoting.com>; Taha Ramy <taha.ramy@dominionvoting.com>; Dejan Marinkovic <dejan.marinkovic@dominionvoting.com>; Shadow (陳玉婷) <shadow@eversun.com.tw>; Wu (吳朋黷) <wu@eversun.com.tw>; Brian_Hsu(許怡琳) <shiu@eversun.com.tw>
Subject: [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)
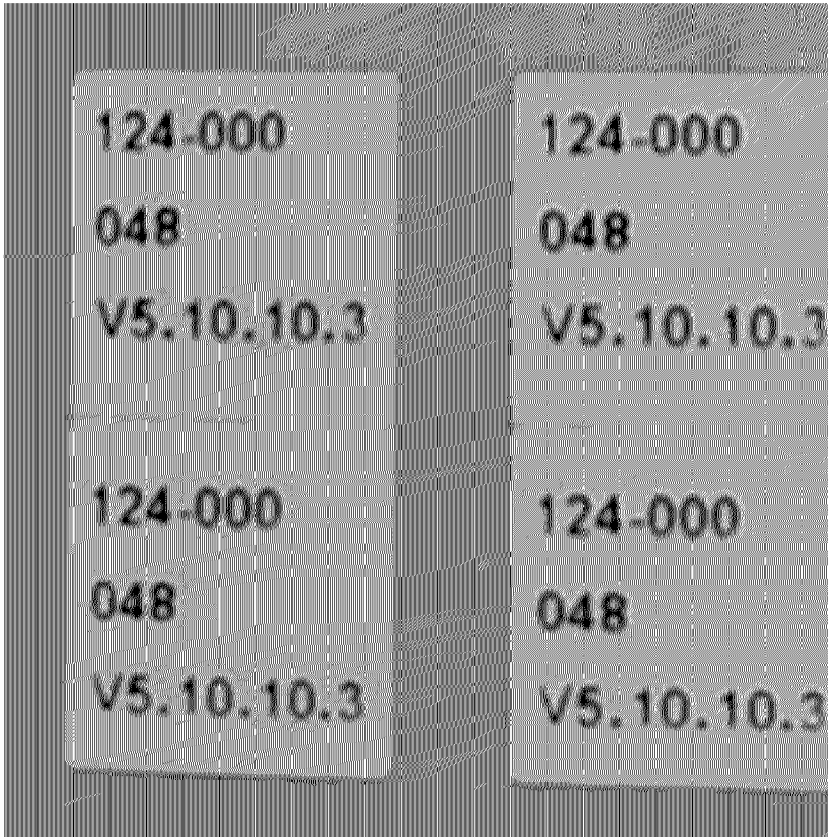
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As shown below:

Best Regards.
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Eversun Electranic CO., LTD
HK.Wei 魏晧焜
Engineering Dept.
Tel: 886-7-8152243 #104
高雄市前鎮區東十街6號
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Sent: Saturday, October 30, 2021 12:45 AM
To: Joseph Lucchese
Cc: Lear_Guo(郭忠益); vincenth@avalue-usa.com; hk.wei(魏晧焜); Arnold Atienza; Aamer Chaudhry; Ryan Almeida; Taha Ramy; Dejan Marinkovic
Subject: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)
Importance: High

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However new DDR module is not going to work with Boot Loader FW that is currently preprogrammed into the ICE Motherboard flash chip (U4 – DVS p/n: 124-000040), hence we need to prepare new preprogrammed part (DVS p/n: 124-000048) to be ready for a switch when we use up the DDR LTB stock.

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DOMINION VOTING SYSTEMS
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From:	Nebojsa Cirovic
Sent:	Friday, December 3, 2021 8:18 PM
To:	hk.wei(魏晧焜); Joseph Lucchese
Cc:	Lear_Guo(郭忠益); alex.hsu (許福隆); vincenth@avalue-usa.com; Arnold Atienza; Aamer Chaudhry; Ryan Almeida; Taha Ramy; Dejan Marinkovic; Shadow (陳玉婷); Wu (吳朋靛); Brian_Hsu(許怡琳); Peter_Tang (唐志海)
Subject:	RE: [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)
Attachments:	124-000048 Avalue FA Approval Signed.pdf

Hi HK,

The preprogrammed FA sample is approved, please find the attached form.
We are now ready for new DDR when we run out of the old one. ECO that changes the preprogrammed part and provides new test SW for production will be released later when the switch to new DDR module gets closer.

For planning purpose make sure you match the number of the old DDR2 modules in stock and old preprogrammed part flash chips.
Let me know if you need any additional info.

Regards,

NEBOJSA CIROVIC | HARDWARE ARCHITECT

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1.866.654.8683 | DOMINIONVOTING.COM

From: hk.wei(魏晧焜) <hk.wei@eversun.com.tw>
Sent: Friday, December 3, 2021 3:17 AM
To: Nebojsa Cirovic <nebojsa.cirovic@dominionvoting.com>; Joseph Lucchese <josephl@avalue-usa.com>
Cc: Lear_Guo(郭忠益) <Lear_Guo@eversun.com.tw>; alex.hsu (許福隆) <alex.hsu@eversun.com.tw>; vincenth@avalue-usa.com; Arnold Atienza <arnold.atienza@dominionvoting.com>; Aamer Chaudhry <aamer.chaudhry@dominionvoting.com>; Ryan Almeida <ryan.almeida@dominionvoting.com>; Taha Ramy <taha.ramy@dominionvoting.com>; Dejan Marinkovic <dejan.marinkovic@dominionvoting.com>; Shadow (陳玉婷) <shadow@eversun.com.tw>; Wu (吳朋靛) <wu@eversun.com.tw>; Brian_Hsu(許怡琳) <shiu@eversun.com.tw>; Peter_Tang (唐志海) <tang@eversun.com.tw>
Subject: RE: [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)

Hi Nebojsa,

Re-provide console log according to your instructions.
console log file please refer to the attached file.
If there is any question, please let me know.

Best Regards.

****

昶亨科技股份有限公司

Eversun Electranic CO., LTD

HK.Wei 魏晧焜

Engineering Dept.

Tel: 886-7-8152243 #104

高雄市前鎮區東十街6號

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From: Nebojsa Cirovic [mailto:nebojsa.cirovic@dominionvoting.com]
Sent: Thursday, December 2, 2021 11:23 PM
To: hk.wei(魏晧焜); Joseph Lucchese
Cc: Lear_Guo(郭忠益); alex.hsu (許福隆); vincenth@avalue-usa.com; Arnold Atienza; Aamer Chaudhry; Ryan Almeida;
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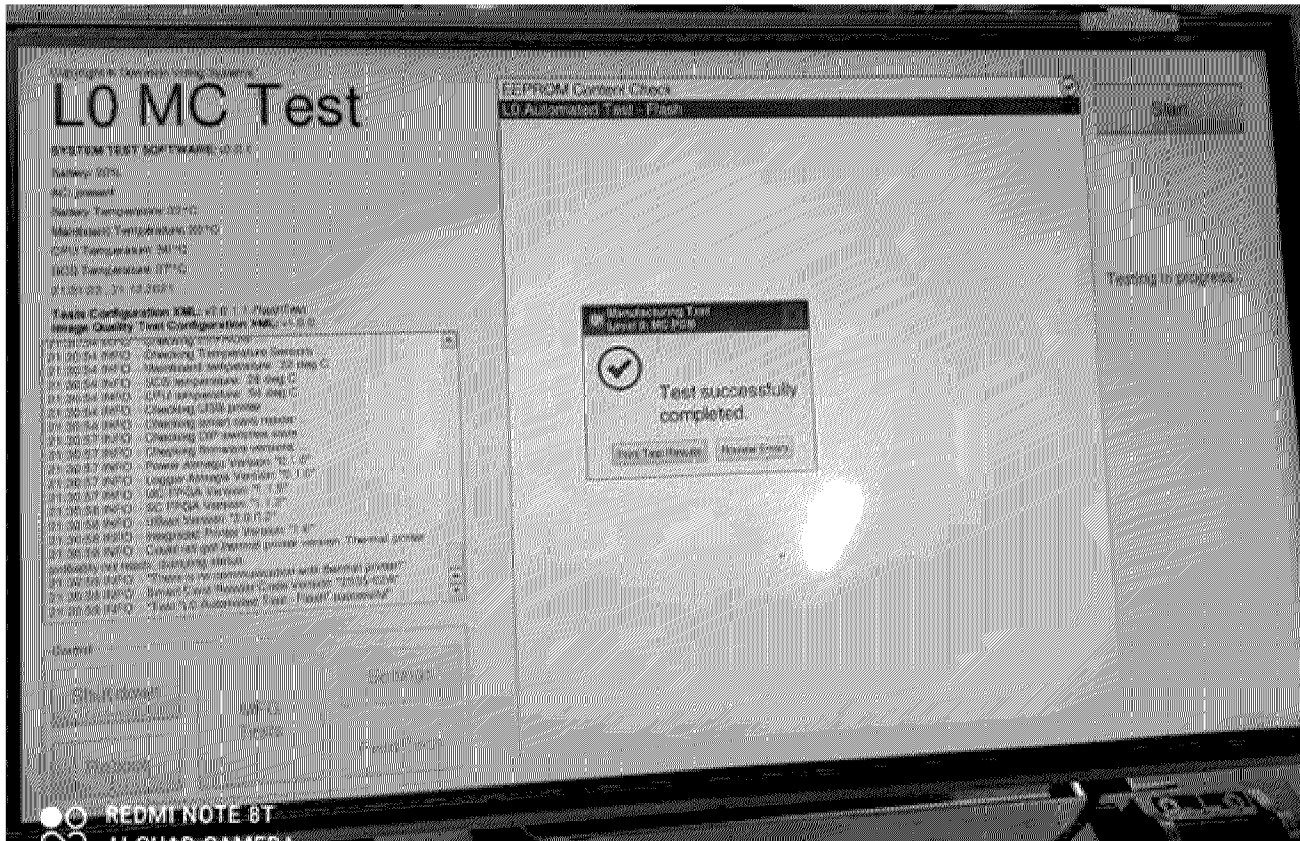<taha.ramy@dominionvoting.com>; Dejan Marinkovic <dejan.marinkovic@dominionvoting.com>; Shadow (陳玉婷)
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Great! Thanks for clarification.
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Regards,

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Cc: Lear_Guo(郭忠益) <Lear_Guo@eversun.com.tw>; vincenth@avalue-usa.com; Arnold Atienza <arnold.atienza@dominionvoting.com>; Aamer Chaudhry <aamer.chaudhry@dominionvoting.com>; Ryan Almeida <ryan.almeida@dominionvoting.com>; Taha Ramy <taha.ramy@dominionvoting.com>; Dejan Marinkovic <dejan.marinkovic@dominionvoting.com>; Shadow (陳玉婷) <shadow@eversun.com.tw>; Wu (吳朋靛)

4

<wu@eversun.com.tw>; Brian_Hsu(許怡琳) <shiu@eversun.com.tw>; Peter_Tang (唐志海) <tang@eversun.com.tw>
Subject: RE: [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)

Hi Nebojsa,

That's right, this question is to pre-test the new FW programming of U4 IC when the DDR2 Module is changed.

Before the DDR2 module is changed, no FW changes will be made.

124-000048 First Article Approval Form has been completed, If there is any question, please let me know.

Because the IC has been programmed and the DDR2 samples have been obtained, we will try to assemble a new combination next week. If the test method needs to be changed, please guide us again to avoid errors during the formal change.

Best Regards.
****
昶亨科技股份有限公司
Eversun Electranic CO., LTD
HK.Wei 魏晧焜
Engineering Dept.
Tel: 886-7-8152243 #104
高雄市前鎮區東十街6號
****

From: Nebojsa Cirovic [mailto:nebojsa.cirovic@dominionvoting.com]
Sent: Friday, November 19, 2021 12:56 AM
To: hk.wei(魏晧焜); Joseph Lucchese
Cc: Lear_Guo(郭忠益); vincenth@avalue-usa.com; Arnold Atienza; Aamer Chaudhry; Ryan Almeida; Taha Ramy; Dejan Marinkovic; Shadow (陳玉婷); Wu (吳朋靛); Brian_Hsu(許怡琳)
Subject: RE: [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)

Hi HK,

Please note that we are programming flash chip not DDR2. DDR2 module requires new FW that should be preprogrammed into the flash chip.

I have sent you the flash image file that should be programmed, however we don't provide any checksum as we are not using checksums for boot up process. If you need checksum for your programming process, please generate checksum with any algorithm you need for you programmer. The checksum that was provided in the approval form for the older version was provided by the vendor of the preprogrammed chip as they set up their process.

In terms of the label, the proposed label is ok.

5

In terms of testing, as mentioned in the previous email, I will provide test instructions once board with 124-000048 first article installed is ready for test. I will also provide Test SW that should only be used to verify the first article.

Please note that this whole process is only to set up the programming process and be ready to change from 124-000040 to 124-000048 when we run out of currently used DDR2 module which will happen at some point in 2022. In the meantime, for production please continue using the 124-000040 preprogrammed part and Test SW that was released as part of the MFG Test Software Kit

Regards,

NEBOJSA CIROVIC | HARDWARE ARCHITECT

DOMINION VOTING SYSTEMS
1.856.654.8683 | DOMINIONVOTING.COM

From: hk.wei(魏晧焜) <hk.wei@eversun.com.tw>
Sent: Thursday, November 18, 2021 2:40 AM
To: Nebojsa Cirovic <nebojsa.cirovic@dominionvoting.com>; Joseph Lucchese <josephl@avalue-usa.com>
Cc: Lear_Guo(郭忠益) <Lear_Guo@eversun.com.tw>; vincenth@avalue-usa.com; Arnold Atienza <arnold.atienza@dominionvoting.com>; Aamer Chaudhry <aamer.chaudhry@dominionvoting.com>; Ryan Almeida <ryan.almeida@dominionvoting.com>; Taha Ramy <taha.ramy@dominionvoting.com>; Dejan Marinkovic <dejan.marinkovic@dominionvoting.com>; Shadow (陳玉婷) <shadow@eversun.com.tw>; Wu (吳朋靛) <wu@eversun.com.tw>; Brian_Hsu(許怡琳) <shiu@eversun.com.tw>
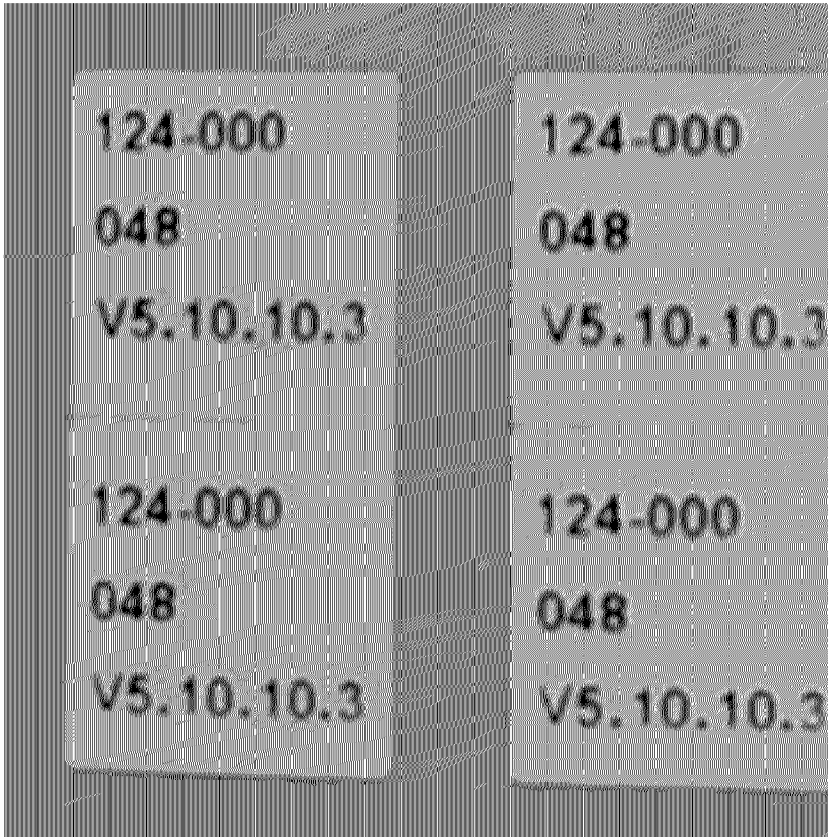**Subject:** [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)

Hi Nebojsa,

DDR2 samples have been got, I am ready to start the IC Programming of the new DDR2 corresponding FW and test, But I check that your 10/30 E-mail does not provide Check Sun, please help provide it.

Does the testing procedure need to be changed?

In addition, the label used to indicate the version on the IC uses a 6x6mm label, then please be able to agree to continue using the 3 line display method.

As shown below:

6

Best Regards.
****

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Eversun Electranic CO., LTD
HK.Wei 魏晧焜
Engineering Dept.
Tel: 886-7-8152243 #104
高雄市前鎮區東十街6號
****

From: Nebojsa Cirovic [mailto:nebojsa.cirovic@dominionvoting.com]
Sent: Saturday, October 30, 2021 12:45 AM
To: Joseph Lucchese
Cc: Lear_Guo(郭忠益); vincenth@avalue-usa.com; hk.wei(魏晧焜); Arnold Atienza; Aamer Chaudhry; Ryan Almeida; Taha Ramy; Dejan Marinkovic
Subject: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)
Importance: High

Hi Joe,

Please note that we are about to release ECO 100795 to replace ICE DDR module that is EoL.
However new DDR module is not going to work with Boot Loader FW that is currently preprogrammed into the ICE Motherboard flash chip (U4 – DVS p/n: 124-000040), hence we need to prepare new preprogrammed part (DVS p/n: 124-000048) to be ready for a switch when we use up the DDR LTB stock.

7

Confidential

DOM_DC04299099

The attached is the zip archive that contains the new binary file and brief programming and marking instructions. Note that programming process should be the same as for existing 124-000040 except that new input file and new marking are required.

I remember that you had some problems interpreting the input file format previously, so please note that binary file provided contains the binary content of the flash in the same format as "124-000040_bootFlashMFG_v4.14.10.img" file provided for 124-000040 and if you had to make any adjustments to the input file to match your programming device that process is on your side and should be applied again.

Please work with Eversun to setup the 124-000048 preprogramming process and let's get FA approval process going so we can wrap that up in time. I have attached the approval form for 124-000040 for reference.

Once FA sample is ready it can be populated on one ICE motherboard and tested locally by Eversun as per instructions that I will provide later.

Once the FA approval is complete, there will be another ECO (ECO 100796) to introduce new preprogrammed part as well as new Test SW kit that works with new Boot Loader FW and verifies new PCN value for units with new DDR.

If you need any additional info, please let me know.
Regards,

NEBOJSA CIROVIC | HARDWARE ARCHITECT

DOMINION VOTING SYSTEMS
1.866.654.8683 | DOMINIONVOTING.COM

To: Nebojsa Cirovic[nebojsa.cirovic@dominionvoting.com]; Joseph Lucchese[josephl@avalue-usa.com]
Cc: Lear_Guo(郭忠益)[Lear_Guo@eversun.com.tw]; alex.hsu (許福隆)[alex.hsu@eversun.com.tw]; vincenth@avalue-usa.com[vincenth@avalue-usa.com]; Arnold Atienza[arnold.atienza@dominionvoting.com]; Aamer Chaudhry[aamer.chaudhry@dominionvoting.com]; Ryan Almeida[ryan.almeida@dominionvoting.com]; Taha Ramy[taha.ramy@dominionvoting.com]; Dejan Marinkovic[dejan.marinkovic@dominionvoting.com]; Shadow (陳玉婷)[shadow@eversun.com.tw]; Wu (吳朋靛)[wu@eversun.com.tw]; Brian_Hsu(許怡琳)[shiu@eversun.com.tw]; Peter_Tang (唐志海)[tang@eversun.com.tw]
From: hk.wei(魏晧焜)
Sent: Fri 12/3/2021 8:17:18 AM
Subject: RE: [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)
DDR2 Change console log＿20211203.txt

Hi Nebojsa,

Re-provide console log according to your instructions.
console log file please refer to the attached file.
If there is any question, please let me know.

Best Regards.
****
昶亨科技股份有限公司
Eversun Electranic CO., LTD
HK.Wei 魏晧焜
Engineering Dept.
Tel: 886-7-8152243 #104
高雄市前鎮區東十街6號
****

From: Nebojsa Cirovic [mailto:nebojsa.cirovic@dominionvoting.com]
Sent: Thursday, December 2, 2021 11:23 PM
To: hk.wei(魏晧焜); Joseph Lucchese
Cc: Lear_Guo(郭忠益); alex.hsu (許福隆); vincenth@avalue-usa.com; Arnold Atienza; Aamer Chaudhry; Ryan Almeida; Taha Ramy; Dejan Marinkovic; Shadow (陳玉婷); Wu (吳朋靛); Brian_Hsu(許怡琳); Peter_Tang (唐志海)
Subject: RE: [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)

Hi HK,

This looks promising but the console log that you provided is incomplete, it just has the part where the test results are printed. I have asked for the console log from the moment the unit is tuned on as that would provide a log data from bootloader, kernel and test SW all at once so I can verify that

everything is ok. Please repeat the test and provide the complete console log so I can approve the FA samples.

Regards,

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From: hk.wei(魏晧焜) <hk.wei@eversun.com.tw>
Sent: Thursday, December 2, 2021 6:58 AM
To: Nebojsa Cirovic <nebojsa.cirovic@dominionvoting.com>; Joseph Lucchese <josephl@avalue-usa.com>
Cc: Lear_Guo(郭忠益) <Lear_Guo@eversun.com.tw>; alex.hsu (許福隆) <alex.hsu@eversun.com.tw>; vincenth@avalue-usa.com; Arnold Atienza <arnold.atienza@dominionvoting.com>; Aamer Chaudhry <aamer.chaudhry@dominionvoting.com>; Ryan Almeida <ryan.almeida@dominionvoting.com>; Taha Ramy <taha.ramy@dominionvoting.com>; Dejan Marinkovic <dejan.marinkovic@dominionvoting.com>; Shadow (陳玉婷) <shadow@eversun.com.tw>; Wu (吳朋靛) <wu@eversun.com.tw>; Brian_Hsu(許怡琳) <shiu@eversun.com.tw>; Peter_Tang (唐志海) <tang@eversun.com.tw>
Subject: RE: [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)
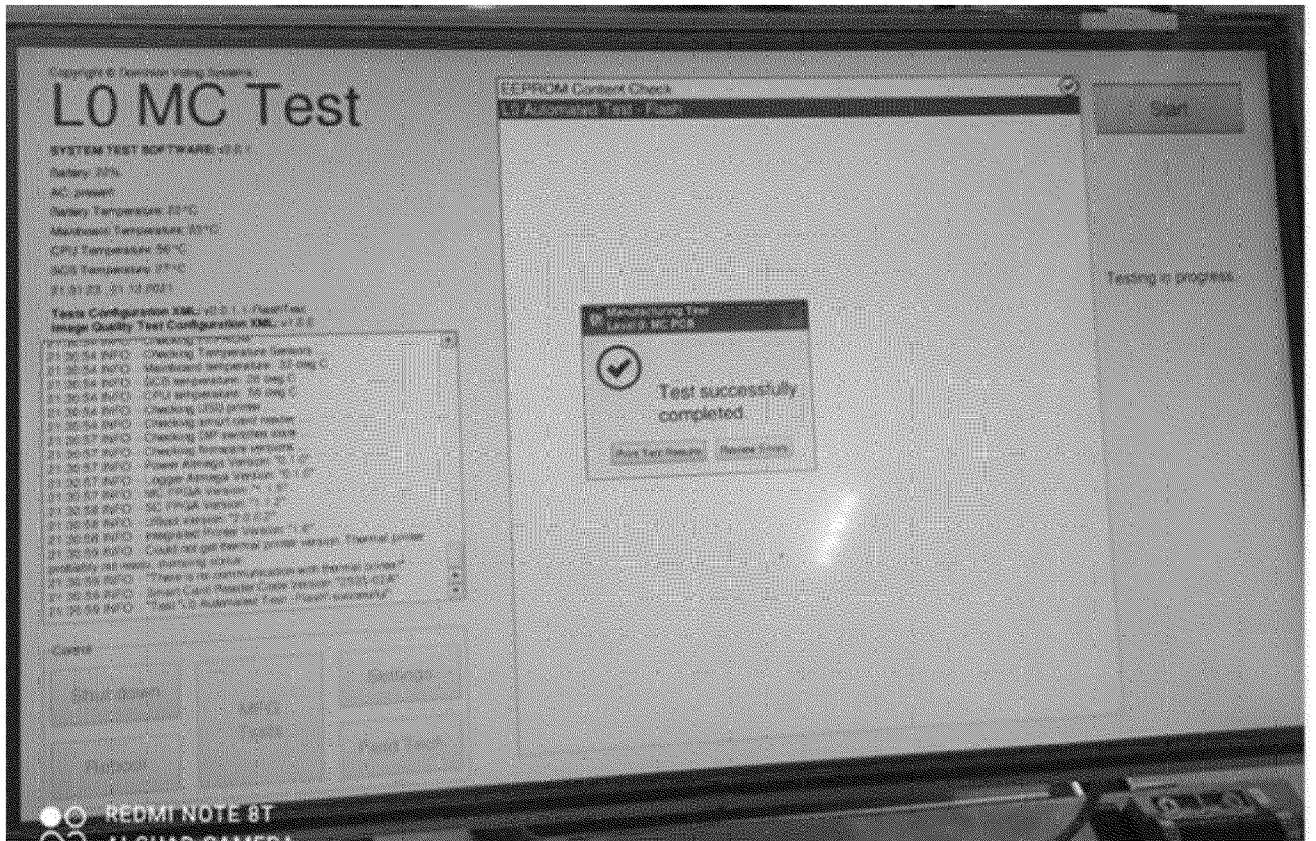
Hi Nebojsa,

Our Test team has completed the testing of this DDR2 change.
Please see the picture below for the test completion screen.
console log Please refer to the attached file.
If there is any question, please let me know.

Best Regards.
****

昶亨科技股份有限公司
Eversun Electranic CO., LTD
HK.Wei 魏晧焜
Engineering Dept.
Tel: 886-7-8152243 #104
高雄市前鎮區東十街6號
****

From: Nebojsa Cirovic [mailto:nebojsa.cirovic@dominionvoting.com]
Sent: Saturday, November 27, 2021 5:08 AM
To: hk.wei(魏晧焜); Joseph Lucchese
Cc: Lear_Guo(郭忠益); vincenth@avalue-usa.com; Arnold Atienza; Aamer Chaudhry; Ryan Almeida; Taha Ramy; Dejan Marinkovic; Shadow (陳玉婷); Wu (吳朋靛); Brian_Hsu(許怡琳); Peter_Tang (唐志海)
Subject: RE: [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)

Hi HK,

I have prepared a Test SW CF0 image to support the test of the new preprogrammed part, Ryan will be uploading it shortly on Avalue FTP.

In terms of the test, you need a motherboard with new chip installed placed into L0 MB test station as you would normally for any new board. Once the setup is ready, please use the CF0 with new Test SW (v2.0.1-FlashTest) and connect the console to your PC. Ensure you capture the console log from the moment the unit is turned on.

If the chip is programmed properly, unit should boot up normally and you should be able to enter MFG Tests and select L0 MB Test – Flash where you would have to pass the automated tests that will verify the flash content.

In order to approve the FA we need to pass the tests described above and you have to send us the console log that captured the whole process for verification.

If there are any issues at boot-up, please share the console log with us so we can assist with troubleshooting.
Regards,

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1.866.654.8683 | DOMINIONVOTING.COM

From: Nebojsa Cirovic
Sent: Friday, November 19, 2021 1:22 PM
To: hk.wei(魏晧焜) <hk.wei@eversun.com.tw>; Joseph Lucchese <josephl@avalue-usa.com>
Cc: Lear_Guo(郭忠益) <Lear_Guo@eversun.com.tw>; vincenth@avalue-usa.com; Arnold Atienza <Arnold.Atienza@dominionvoting.com>; Aamer Chaudhry <aamer.chaudhry@dominionvoting.com>; Ryan Almeida <ryan.almeida@dominionvoting.com>; Taha Ramy <taha.ramy@dominionvoting.com>; Dejan Marinkovic <dejan.marinkovic@dominionvoting.com>; Shadow (陳玉婷) <shadow@eversun.com.tw>; Wu (吳朋靛) <wu@eversun.com.tw>; Brian_Hsu(許怡琳) <shiu@eversun.com.tw>; Peter_Tang (唐志海) <tang@eversun.com.tw>
Subject: RE: [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)

Hi HK,

Great! Thanks for clarification.
I will prepare and upload the test files and brief instructions for verification early next week.

Regards,

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1.866.654.8683 | DOMINIONVOTING.COM

From: hk.wei(魏晧焜) <hk.wei@eversun.com.tw>
Sent: Friday, November 19, 2021 4:49 AM
To: Nebojsa Cirovic <nebojsa.cirovic@dominionvoting.com>; Joseph Lucchese <josephl@avalue-usa.com>
Cc: Lear_Guo(郭忠益) <Lear_Guo@eversun.com.tw>; vincenth@avalue-usa.com; Arnold Atienza <arnold.atienza@dominionvoting.com>; Aamer Chaudhry <aamer.chaudhry@dominionvoting.com>; Ryan Almeida <ryan.almeida@dominionvoting.com>; Taha Ramy <taha.ramy@dominionvoting.com>; Dejan Marinkovic <dejan.marinkovic@dominionvoting.com>; Shadow (陳玉婷) <shadow@eversun.com.tw>; Wu (吳朋靛) <wu@eversun.com.tw>; Brian_Hsu(許怡琳) <shiu@eversun.com.tw>; Peter_Tang (唐志海) <tang@eversun.com.tw>
Subject: RE: [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)

Hi Nebojsa,

That's right, this question is to pre-test the new FW programming of U4 IC when the DDR2 Module is changed.

Before the DDR2 module is changed, no FW changes will be made.

124-000048 First Article Approval Form has been completed, If there is any question, please let me know.

Because the IC has been programmed and the DDR2 samples have been obtained, we will try to assemble a new combination next week. If the test method needs to be changed, please guide us again to avoid errors during the formal change.

Best Regards.
****
昶亨科技股份有限公司
Eversun Electranic CO., LTD
HK.Wei 魏晧焜
Engineering Dept.
Tel: 886-7-8152243 #104
高雄市前鎮區東十街6號
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From: Nebojsa Cirovic [mailto:nebojsa.cirovic@dominionvoting.com]
Sent: Friday, November 19, 2021 12:56 AM
To: hk.wei(魏晧焜); Joseph Lucchese
Cc: Lear_Guo(郭忠益); vincenth@avalue-usa.com; Arnold Atienza; Aamer Chaudhry; Ryan Almeida;

Taha Ramy; Dejan Marinkovic; Shadow (陳玉婷); Wu (吳朋靛); Brian_Hsu(許怡琳)
Subject: RE: [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)

Hi HK,

Please note that we are programming flash chip not DDR2. DDR2 module requires new FW that should be preprogrammed into the flash chip.

I have sent you the flash image file that should be programmed, however we don't provide any checksum as we are not using checksums for boot up process. If you need checksum for your programming process, please generate checksum with any algorithm you need for you programmer. The checksum that was provided in the approval form for the older version was provided by the vendor of the preprogrammed chip as they set up their process.

In terms of the label, the proposed label is ok.

In terms of testing, as mentioned in the previous email, I will provide test instructions once board with 124-000048 first article installed is ready for test. I will also provide Test SW that should only be used to verify the first article.

Please note that this whole process is only to set up the programming process and be ready to change from 124-000040 to 124-000048 when we run out of currently used DDR2 module which will happen at some point in 2022. In the meantime, for production please continue using the 124-000040 preprogrammed part and Test SW that was released as part of the MFG Test Software Kit

Regards,

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From: hk.wei(魏晧焜) <hk.wei@eversun.com.tw>
Sent: Thursday, November 18, 2021 2:40 AM
To: Nebojsa Cirovic <nebojsa.cirovic@dominionvoting.com>; Joseph Lucchese <josephl@avalue-usa.com>
Cc: Lear_Guo(郭忠益) <Lear_Guo@eversun.com.tw>; vincenth@avalue-usa.com; Arnold Atienza <arnold.atienza@dominionvoting.com>; Aamer Chaudhry <aamer.chaudhry@dominionvoting.com>; Ryan Almeida <ryan.almeida@dominionvoting.com>; Taha Ramy <taha.ramy@dominionvoting.com>; Dejan Marinkovic <dejan.marinkovic@dominionvoting.com>; Shadow (陳玉婷) <shadow@eversun.com.tw>; Wu (吳朋靛) <wu@eversun.com.tw>; Brian_Hsu(許怡琳) <shiu@eversun.com.tw>
Subject: [EXTERNAL] RE: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)
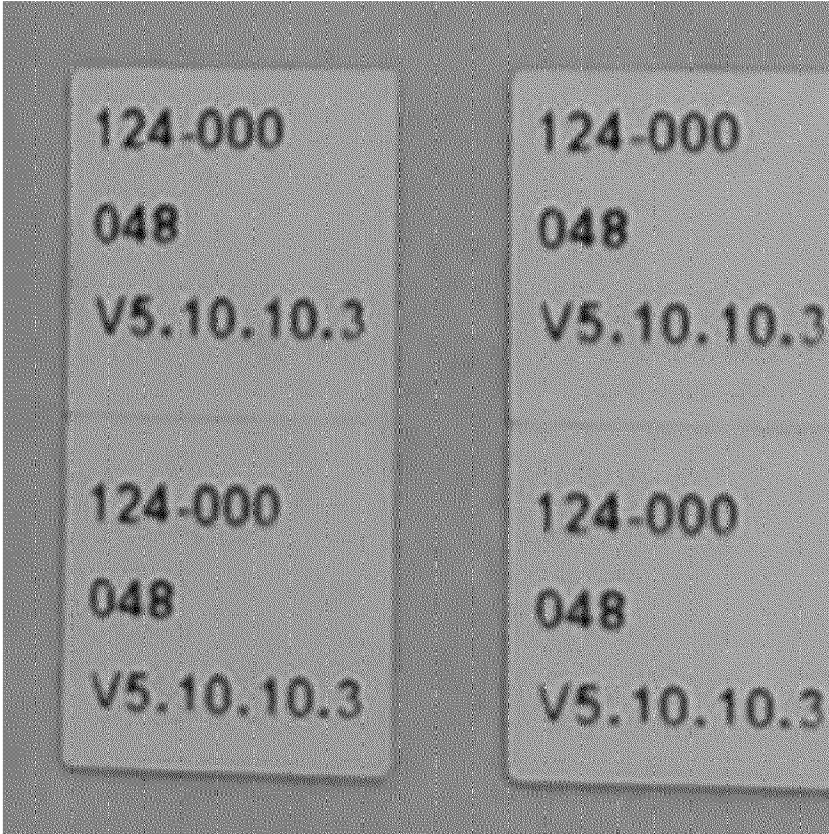
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DDR2 samples have been got, I am ready to start the IC Programming of the new DDR2

corresponding FW and test, But I check that your 10/30 E-mail does not provide Check Sun, please help provide it.

Does the testing procedure need to be changed?

In addition, the label used to indicate the version on the IC uses a 6x6mm label, then please be able to agree to continue using the 3 line display method.

As shown below:

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昶亨科技股份有限公司
Eversun Electranic CO., LTD
HK.Wei 魏晧焜
Engineering Dept.
Tel: 886-7-8152243 #104
高雄市前鎮區東十街6號
****

Sent: Saturday, October 30, 2021 12:45 AM
To: Joseph Lucchese
Cc: Lear_Guo(郭忠益); vincenth@avalue-usa.com; hk.wei(魏晧焜); Arnold Atienza; Aamer Chaudhry; Ryan Almeida; Taha Ramy; Dejan Marinkovic
Subject: New ICE Motherboard Boot Flash Preprogrammed Part (DVS p/n:124-000048)
Importance: High

Hi Joe,

Please note that we are about to release ECO 100795 to replace ICE DDR module that is EoL. However new DDR module is not going to work with Boot Loader FW that is currently preprogrammed into the ICE Motherboard flash chip (U4 – DVS p/n: 124-000040), hence we need to prepare new preprogrammed part (DVS p/n: 124-000048) to be ready for a switch when we use up the DDR LTB stock.

The attached is the zip archive that contains the new binary file and brief programming and marking instructions. Note that programming process should be the same as for existing 124-000040 except that new input file and new marking are required.
I remember that you had some problems interpreting the input file format previously, so please note that binary file provided contains the binary content of the flash in the same format as "124-000040_bootFlashMFG_v4.14.10.img" file provided for 124-000040 and if you had to make any adjustments to the input file to match your programming device that process is on your side and should be applied again.

Please work with Eversun to setup the 124-000048 preprogramming process and let's get FA approval process going so we can wrap that up in time. I have attached the approval form for 124-000040 for reference.
Once FA sample is ready it can be populated on one ICE motherboard and tested locally by Eversun as per instructions that I will provide later.

Once the FA approval is complete, there will be another ECO (ECO 100796) to introduce new preprogrammed part as well as new Test SW kit that works with new Boot Loader FW and verifies new PCN value for units with new DDR.

If you need any additional info, please let me know.
Regards,

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```
ICE Screenshots for Restore MFG Settings - MB Repairs
Ryan Almeida/ Hardware Engineer
27 Jul 21
Reference: 129-000547_ImageCast®_PCOS-400_Series_Restore_Manufacturing_Settings_Procedure_v2.0
Reference: 129-000547_ImageCast®_PCOS-400_Series_Restore_Manufacturing_Settings_Procedure_v2.0
Reference: 129-000547_ImageCast®_PCOS-400_Series_Restore_Manufacturing_Settings_Procedure_v2.0
Reference: 129-000547_ImageCast®_PCOS-400_Series_Restore_Manufacturing_Settings_Procedure_v2.0
```

ICE Instructions for Avalue Motherboard Recovery – Locked Units DVS Hardware Engineering 29 Jul 21 NOTE: This procedure is a one-time procedure to recover the locked units reported by Avalue on WE-29 DRT as part of the McKinney MB Repair initiative. This procedure should not be applied to any future production or troubleshooting efforts, unless explicitly stated by DVS Hardware Engineering. During upgrade process from MFG Test SW to Official SW Update, if you see this error message: Step 1: Unzip and Create Image of the PCOS410A_TestSW_CF_v1.8.1_Config_v1.8.1.2_Signed.vhd.7z onto a blank CF0 Card, using the EDES Station. Once programmed, insert the card into CF0 slot of ICE. Insert Blank CF1 and CF2 into the CF1 and CF2 slot. Step 2: Turn Unit ON using the Service Switch. Press the Settings button then type in the passcode: 55552288 Step 3: Press the Restore MFG Settings button to clear the main controller board EEPROM content. Press the Yes button when prompted for confirmation. When complete, a pop-up message: "EEPROM keys successfully deleted" will appear. Press OK Step 4: Press the Reset Lifetime Counters button to reset the ballot count. Press the Yes button when prompted for confirmation. When complete, a pop-up message: "Machine lifetime counters have been successfully reset" will appear. Press OK. Then Press Close Step 5: Press Shut Down. Turn Service Switch OFF Step 6: Create an image of the Official SW Application System CF0 – V5.10.10.3 file onto a blank, FAT 32 Formatted CF0 Card, using the EDES Station: Step 7: Create CF1 Card with contents from Official SW CF1 Update Files –V5.10.10.3 by copying these files to the root of a FAT 32 Formatted CF1 Card: Step 8: Insert CF0 and CF1 Cards from Step 5 and 6 into ICE. Insert Blank CF2 Card in CF2 slot. Turn unit on using the Service Switch. Wait for the contents to load. Step 9: An error message will appear. Press OK Step 10: At this screen, insert the ICE Technician Key into the iButton Reader Step 11: Insert credentials.   Username: Admin Password: 12345678   Press OK Step 12: Press System Update Step 13: Press Firmware Update Step 14: Inspect All 4 components for Updates. You should not see any components requiring Update. However, If any component displays "Update is Required" then Update that particular component. Then Press Back 1 2 3 4 Step 15: Press Software Update Step 16: Update all Components shown, despite no message displaying "Update is Required" NOTE: You will have to press the Update button twice in order to successfully update each component. The first time you Press Update, each component will display a message indicating "component is up to date, press the button again to force update. Press Update again Once all components have been updated, you will see a message for each component indicating "Update Complete". NOTE: Some components may take several minutes to complete update. Step 17: Shut down the unit by pressing the Shut Down Icon on top right of screen. Then Press Shut Down Wait a few seconds for the unit to shut down. Once the screen goes blank, turn the Service Switch OFF Step 18: Turn the unit on again by pressing the Service Switch ON. Wait for the contents to load. Repeat Steps 9 - 11 Step 19: Press Diagnostics Step 20: Press System Information Step 21: Press Print Step 22: Inspect the Results Tape and ensure the information is consistent with the table below. If correct, Repeat Step 16 to safely Shut Down unit. The Unit is now recovered and ready to be L3 Tested using standard procedures, and inserted into production If there are any discrepancies, please contact DVS Hardware Engineering

From: Lear_Guo(郭忠益) [lear_guo@eversun.com.tw]
Sent: 7/30/2021 5:27:33 PM
To: Ryan Almeida [ryan.almeida@dominionvoting.com]
CC: Nebojsa Cirovic [nebojsa.cirovic@dominionvoting.com]; Taha Ramy [taha.ramy@dominionvoting.com]; Aamer Chaudhry [aamer.chaudhry@dominionvoting.com]; Joseph Lucchese [josephl@avalue-usa.com]; Vincent Hsu [vincenth@avalue-usa.com]; Arnold Atienza [arnold.atienza@dominionvoting.com]; alex.hsu (許福隆) [alex.hsu@eversun.com.tw]; Sam_Wu(吳家昇) [sam_wu@eversun.com.tw]; Roye_Wu (吳弘文) [roye_wu@eversun.com.tw]; Juno_Hsu(許崇霞) [juno@eversun.com.tw]; Leo (曾慶航) [leo@eversun.com.tw]; Ting.wu (吳雅婷) [ting.wu@eversun.com.tw]; Lee (李俊賢) [lee@eversun.com.tw]; Brian_Hsu(許怡琳) [shiu@eversun.com.tw]; jacob.yen (閆傳申) [jacob.yen@eversun.com.tw]; Allen.Wu (吳宗晉) [allen.wu@eversun.com.tw]; Wu (吳朋靛) [wu@eversun.com.tw]; hk.wei(魏晧焜) [hk.wei@eversun.com.tw]; Ada.Lin (林鄉邑) [Ada.lin@eversun.com.tw]; Peter_Tang (唐志海) [tang@eversun.com.tw]; Lear_Guo(郭忠益) [Lear_Guo@eversun.com.tw]
Subject: [EXTERNAL] RE: Avalue ICE Motherboard Repair - Error Message Follow Up

Hi Ryan,

Thanks for your information, we will implement your guide as below to ensure all the units returning as default settings.

Sincerely.
Lear Guo
TEL: +886-7-815-2243 #201
Mobile: +886-933-639-657

From: Ryan Almeida [mailto:ryan.almeida@dominionvoting.com]
Sent: Friday, July 30, 2021 11:55 PM
To: Lear_Guo(郭忠益)
Cc: Nebojsa Cirovic; Taha Ramy; Aamer Chaudhry; Joseph Lucchese; 'Vincent Hsu'; Arnold Atienza
Subject: RE: Avalue ICE Motherboard Repair - Error Message Follow Up

Hi Lear,

I am following up from our earlier conversation. To ensure we are on the same page, here is a summary of the issues we clarified along with the next steps:

For the 20 units reported with "Corrupted System Component":

1.	Your team confirmed Step 4 and 5 in email attached ("Press Settings" and "Perform a "Restore MFG Settings" to clear the EEPROM") was not applied. To resolve this issue on those 20 boards you will have to perform the recovery process attached in the PDF above. Please note: This document is only intended as a one-time use for these 20 MBs. Do not apply this process to any other production or troubleshooting efforts unless stated by DVS.
2.	For the 1 unit you did recover by yourself, this was performed by reprogramming the ICs (U4, U18, U78) and then applying Step 4 and 5. Although this is one possible way to resolve the issue, it is not the proper way as it involves extra/unnecessary steps to resolve the issue. Please only use Step 1 above to resolve the issue.

For the other 20 units which successfully upgraded to official SW with no issues:

1.	You need to perform **only** Step 1, 2 and 4 of the PDF. Basically,
a.	Take out the CF0 (containing Official SW) from these units and Insert the CF0 from Step 1 into the unit
b.	Boot up unit, perform Step 4 (Reset Lifetime Counters), Shut down unit

c.   Swap out the CF0 back with the original CF0 (containing Official SW)
d.   Unit is ready to be L3 Tested using standard procedures, and inserted into production

<u>For all units being sent to McKinney:</u>

1.   While unit is in L0 Testing, perform Step 2, 3 and 4 of PDF. NOTE: No need to insert CF0 from Step 1 of PDF because these units are already running MFG Test SW.
NOTE: For units that have already passed L0/L1 Test and ready to be shipped to McKinney, please also perform this step, so that ALL boards sent to McKinney will have this step completed.

I hope this helps. If you have any questions, please let me know.

Thanks,

RYAN ALMEIDA | HARDWARE ENGINEER

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From: Ryan Almeida
Sent: July 27, 2021 7:44 PM
To: Lear_Guo(郭忠益) <lear_guo@eversun.com.tw>
Cc: Nebojsa Cirovic <nebojsa.cirovic@dominionvoting.com>; Taha Ramy <taha.ramy@dominionvoting.com>
Subject: ICE Motherboard Repair - Error Message Follow Up

Hi Lear,

Regarding the ICE Motherboard error message troubleshooting we discussed in today's DRT, two things:

1.   Did your team follow the procedure outlined in Taha's original email (attached)? In particular did your team follow Steps 4 and 5 of the repair procedure? ("Press Settings" and "Perform a "Restore MFG Settings" to clear the EEPROM"). If you don't recall, I have added images of what this process looks like in the PPT attached. (These screenshots are taken from pg16-19 of document 129-000547 which you already have in FTP). Please confirm if your team followed this procedure.
2.   Could you also clarify the number count for units that experienced this issue? I believe you said 20 in the DRT? So does that mean 20 MBs experienced this issue and all others did not? Or did you say there were 20 boards that had yet to undergo SW upgrade after board was repaired? Or both? Would appreciate your clarification.

We can discuss any questions in our call tonight. Thanks,

RYAN ALMEIDA | HARDWARE ENGINEER

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From:	Taha Ramy [taha.ramy@dominionvoting.com]
Sent:	6/15/2021 11:18:31 PM
To:	Vincent Hsu [vincenth@avalue-usa.com]; Joseph Lucchese [josephl@avalue-usa.com]
CC:	Aamer Chaudhry [aamer.chaudhry@dominionvoting.com]; Lear_Guo(郭忠益) [lear_guo@eversun.com.tw]; Ryan Almeida [ryan.almeida@dominionvoting.com]; Dejan Marinkovic [dejan.marinkovic@dominionvoting.com]; Nebojsa Cirovic [nebojsa.cirovic@dominionvoting.com]
Subject:	ICE Motherboard 2V3A R3 Review
Attachments:	ICE-MainController_rev2V3A_SCH_R3_for verification.pdf; Freescale_MPC8347EEC.pdf; MPC8347EAEC.pdf; MPC8347EAEC_datasheet.pdf; MPC8349ECE_errata.pdf; AN2931_2011.pdf

Hi Joe & Vincent,

We've made changes to the ICE 2V3A schematic and now should have a final edit. Aamer has mentioned that your team can help us review the third revision of the ICE motherboard, and especially the circuits pertaining to the CPU (U1) and all of its peripherals. I attached the latest schematic and reference documents for the CPU, please let me know if you have any questions.

Thank you,

TAHA RAMY | HARDWARE ENGINEER

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