

# Firmware Program Release Notes

## Basic Information

Program Type (General or Customized)	General
Applicable Receiving Card	A8s-N
PCB Version	S9C_D3

## Chip List

Program Package	Driver IC	Decoding Chip	Note
DATA_A8s-N_V4.9.0.0	<p><i>MBI series: MBI5124 (excluding MBI5124DPWM), MBI502x, MBI5034~MBI5039, MBI5264, MBI5268, MBI502X, MBI503X, MBI505X, MBI5124, MBI5125, MBI5034B</i></p> <p><i>MY series: MY9862</i></p> <p><i>ICN series: ICN2038S, ICN2047, DP5125H (ICN2038S), ICN2055/ICN2065/ICN2069 (FM6565), ICN1065, ICN1065S (ICN2065), ICN3065, ICN2153s, ICN2055s (ICN2055), ICN3069</i></p> <p><i>SM series: SM16207, SM16237, SM16389SF, SM16389, SM16169SH (SM16380SH), SM16380SW (SM16380SH), SM16169SW (SM16380SH), SM16386 (SM16380SH)</i></p> <p><i>DP series: DP3246, DP3264, DP3265, DP3368, DP3256 (DP3264), DP3356 (DP3265), DP3364 (DP3265), DP3254, DP3252 (DP3254), DP3153 (DP3254), DP3269s</i></p> <p><i>CFD series: CFD555A, CFD555B, CFD535A (CFD555B), C8385, CFD955B, CS2066</i></p> <p><i>HX series: HX8863, HX8864, HX8865, HX8964 (HX8864 + number of register groups)</i></p> <p><i>FM series: FM6864 (MBI5264)</i></p> <p><i>Others: common chips, RT5938ss_Common</i></p>	<p><i>Static, direct, 138, 5958, 5953, 595, SM5266, SM5366, SM5368, DP32020, DP32019, D7266, HX6158H, FM7519, CFD2138s</i></p> <p><i>ICN2018, ICN2019, ICN3018, RT5958, RT5988, RT5960, RT5990, RT5992, RT5929</i></p>	<p><i>The 16169SH series does not support special modes.</i></p>
DATA_A8s-N_V4.9.0.3	<p><i>MY series: MY9266, MY9269, MY9366</i></p> <p><i>MBI series: MBI5030, MBI5031, MBI5041 (B), MBI5043, MBI505x, MBI5252, MBI5353, MBI5153</i></p>	<p><i>Static, direct, 138, 5958, 5953, 595, SM5266, SM5366,</i></p>	<p><i>ICN2263 does not support dead pixel removal.</i></p>

	<p>(FM6153), MBI5353B, MBI5253B, MBI5754B</p> <p>ICN series: ICN2153 (FM6353), ICN2159, ICN2263</p> <p>SM series: SM16169, SM16380, SM16388, SM16369, SM16359</p> <p>CFD series: CFD435A, CFD455A, CFD335A</p> <p>CS series: CS2033</p> <p>Others: TLC5958, TLC59581, SCL8060</p>	<p>SM5368, DP32020, DP32019, D7266, HX6158H, FM7519, CFD2138s</p> <p>ICN2018, ICN2019, ICN3018, RT5958, RT5988, RT5960, RT5990, RT5992, RT5929</p>	<p>ICN2263 does not support low latency.</p>
DATA_A8s-N_V4.9.0.4	<p>LS9917, LS9919, LS9920, LS9926, LS9928, LS9929, LS9930, LS9931, LS9935, LS9935B, LS9936, LS9961</p>		

## Features

Supported Features	Note
Maximum load capacity: 384x512 pixels (PWM IC); 384x384 (Common IC/LS99xx)	For the module design, a standard horizontal layout is required. Irregular layouts, such as column scanning, folding, or skipping pixels, can impact the maximum load, typically causing variations of around 10% to 15%. You can evaluate this based on a 512*320 resolution.
Up to 1/64 scan	
Up to 32 groups of parallel data. 64 groups of serial data (expandable to 128 groups of serial data)	Refer to logical load capacity. Support 8, 16, or 32 groups of parallel data. Support 16, 32, or 64 groups of serial data. Support dual clock extension by default.
Color management	
Precise grayscale	
22bit+	
Pixel level brightness and chroma calibration	
Quick seam correction	Support displaying test pattern when there is no signal source.
Seam correction with mobile phones	Require working with asynchronous sending card and VNNOX Care
Low latency	Common chips do not support low latency, and LS99XX series chips do not support low latency either. DCLK continuous chips need to be customized to support low latency.

Supported Features	Note
3D	Load capacity reduced by half.
Individual gamma adjustment for RGB	
90° image rotation	
Display of 3-color 16-point serial input	
Smart module	Dedicated firmware required.
Automatic module calibration	
Stable uploading of calibration coefficients	Calibration acceleration supported.
Quick uploading of calibration coefficients	
Module flash management	
One click to apply calibration coefficients in module flash.	
Mapping1.1	
Settings of a stored image in the receiving card	
Temperature & voltage monitoring	
Cabinet LCD	Support for a 5-Pin LCD.
Bit error detection	No checking for errors when the Ethernet cable is unplugged.
Status detection of dual power supplies	
Firmware program readback	
Configuration parameter readback	
Dual card backup and status monitoring	Support seamless switching.
Loop backup	
Dual backup of configuration parameters	
Dual program backup	
No rectangle restriction	Require working with all-in-one products.
Adjustable EMC	
10bit/12bit input source	Load capacity reduced by half (does not support 10bit/12bit when working with COEX card-based controllers).

## Others

1. Removed the brightness adjustment feature in grayscale preferred mode.
2. ICN2053 experiences brightness attenuation issues beyond 13-bit grayscale and requires a custom program for

- support.
3. Added support for active-low gamma on DP3264, DP3265, and SM16389SF.
  4. ICN1063 (ICN2263) does not support dead pixel removal and requires a custom program for support.
  5. ICN1063 (ICN2263) only supports active-low gamma and must be used with NovaLCT version 5.6.0 or later.
  6. SM16389SF, SM16609, and SM16169SH (SM16380SH) do not support extended attribute special modes (photo optimization) and require a custom program for support.
  7. Version 4.9.0.4 uses the LS E0 kernel.
  8. Added support for using image files for packaging.
  9. Does not support the display of 3-color 1-point serial input and requires a custom program for support.

## Change History

Change History		
Program Version	Release Date	Description
V4.8.1.0	2022-12-12	
V4.9.0.0		

## V4.9.0.0 Updates

New Features
<ul style="list-style-type: none"> <li>Added manual frame multiplication feature.</li> <li>Added SDRAM spread spectrum function.</li> <li>Added an option to enable or disable auto removal of dead pixels upon power-on.</li> <li>Implemented a new power-on parameter validation mechanism to prevent system crashes caused by incorrect parameters saved in the hardware.</li> <li>Added a 90° rotation feature compatible with COEX MX series products.</li> </ul>
Improvements
<ul style="list-style-type: none"> <li>Changed the system clock to PHY1.</li> <li>Optimized the power-on sequence for PWM and common ICs.</li> <li>Improved the gradual power-on functionality.</li> <li>Improved the 18bit display quality for active-low chips.</li> <li>Improved the redundant backup switching performance.</li> <li>Improved the dual-card backup capability.</li> <li>Optimized the decoding timing for DP32020.</li> <li>Increased the maximum number of module flash to 64.</li> </ul>

### Bug Fixes

- Fixed display issues with 5040 chip series under certain settings.
- Fixed occasional synchronization problems with brightness adjustments.
- Fixed screen distortion issues when displaying pre-stored images without an Ethernet connection after power-reset.
- Fixed abnormal display of pre-stored images when there is no signal source.
- Fixed display anomalies for 128 extended data groups in certain modes.
- Fixed no output issue with DCLK at 25M in certain modes.
- Fixed serial IC register configuration errors.
- Fixed occasional issue where the self-test mode is entered with a single press of the self-test button upon power-on.
- Fixed abnormal flash ID sequence issue in module cascading scenarios.
- Fixed module ID anomalies in certain modes.
- Fixed the issue where the version number would not refresh correctly after a power-reset following program updates.
- Fixed screen distortion issues in certain parallel modes.
- Fixed screen distortion issues in certain serial modes.
- Fixed occasional ineffectiveness in multi-batch adjustments.
- Fixed one-click read-back error of module flash calibration coefficients when the Ethernet cable is disconnected.
- Fixed boundary issues in data groups during the exchange of gamma tables across irregular cabinets.

## V4.8.1.0 Updates

### New Features

- Added adjustable EMC.
- Added camera seam correction (requires NovaLCT version 5.4.4.6 or later).

### Improvements

- Optimized the logic for saving flash data.
- Optimized the module flash feature.
- Improved Ethernet port communication stability.
- Improved error detection capabilities.
- Optimized the image booster precise grayscale feature.

### Bug Fixes

- Fixes known issues.