Technical Note

# NV8500 v3.6.1 Release Notes

## Overview

ECO 19237 releases NV8500 router applications and firmware that update control cards and IOXM[1] cards. The version assigned to this release is 3.6.1 and its build number is 2942.

This release addresses the following major issues:

## Major Changes

None.

## Bugs Fixed

- [NV8500-1550] Direct control by Sony via ROT16- NV router sends response when command is out of matrix boundaries.
- [NV8500-1490] Rot 16: If R80 is powered up after router is active, the R80 would not receive full router crosspoint status.

## Known Issues

Many of these issues will be resolved in the next general release.

- [NV8500-1430] In an NV8576-Plus expansion frame, the EM0903 card is reported incorrectly in the 'Module Types' page of MRC.
- [NV8500-1365] Input Monitors are not working properly on NV8144.
- [NV8500-1346] NV8144 input monitors not switching as directed by MRC.

  This duplicates NV8500-1365 above.
- [NV8500-1344] Diagnostic tally fails on audio levels with garbage data in extended status.
- [NV8500-1314] Embedded Dolby E occasionally leaves router delayed by 8–15 lines.

  The problem has been found in:

  3Gig SDI EMB 16 COAX OUT
  3Gig SDI DEM/EMB 16 COAX OUT

  and has ***not*** been found in:

  3Gig SDI HYBRID 16 COAX OUT
  3Gig COAX 16 SDI / 2 TDM OUT
  Standard output cards of course
- [NV8500-1275] Serial protocols do not work in v3.3.0.

  Serial protocols were removed in v3.5.0.
- [NV8500-1235] The STD RED XPT EM0676-00 reports a comm error (88) when there is no comm error.
- [NV8500-1221] Audio break-in tally is incorrect if the [partition's] controller input start is not 1.
- [NV8500-1208] There are video glitches when a take is done between the Main and Expansion frames.

1. IOXM is shorthand for Input, Output, Xpt, Monitor and essentially means any NV8500 card that can be read by a control card, in other words any card but a control card. However, the term IOXM does not (yet) apply to standard NV8500 cards.

- [NV8500-1037] There are switching problems in a NV8576 expanded router when using an HRC288 (hybrid redundant crosspoint).

### MRC Changes

There were no changes in MRC for version 3.6.1.

### Requirements

The upgrade has certain requirements.

- A PC running MRC (version 3.5.0 or later). This version of MRC has been used for all testing.
- One or two EM0833 control cards for each router frame you intend to upgrade. (These cards are probably already in use at the site.)
- A boot ROM (IC), with SV1038-05A code, only for EM0833-20 control cards.
- All the firmware files available (on a memory stick or other suitable medium).

  `NV8500_HYB_FW_3.6.1.2942.RF` This is SV1052-48 (A1) of EM0833 firmware.

## Firmware Notes

The following notes list the changes and bug fixes.

### SV0938-1200

File Names: SV0938-1200.bit, .mcs

#### Supported Assemblies

- EM0687-01

  Versions prior to the one above support this code but will not report version information in MRC.

#### Key Features, Additions, or Changes for this Release

Added support for EM0904 (M3) rear.

### SV1033-15

#### Changes from SV1033-14:

1 Added commands to high speed com containing video reference formats. Used on APC2 frame sync cards to report reference information to iControl.

2 Added commands to input cards (particularly the APC2 frame sync card) specifically to turn on select outputs. This normally results in 4 of 5 outputs being on instead of all 5 (per input) in order to save power.

3 Added registers for testing 4K coherent switching.

Although this file has been updated to support frame sync features, the frame sync card does ***not*** work properly with the EM0833-00 cards.

This file is for the EM0833-00 assemblies only.

This version of the FPGA code is ***not*** compatible with SV1040-07 and older applications because of changes in the interrupt registers and address.

## SV1052-48 Rev A

NV85000 hybrid firmware

File name: NV8500_HYB_FW_3.6.1.2942.RF

This is NV8500_HYB_FW_3.6.1.2942.RF - EM0833 Firmware - May 7, 2014; Version: 3.6.1.2942

| Length | Date | Time | DevType | NamePart# | Version |
|---|---|---|---|---|---|
| 53641 | 05/07/14 | 1:41pm | BOOT | BIN/BOOT | SV0000-00A EM0833Boot May 7 2014 12:00:01 |
| 833977 | 05/07/14 | 1:41pm | APP0 | BIN/APP0 | SV0000-00A EM0833App May 7 2014 11:59:41 |
| 2969683 | 05/07/14 | 1:41pm | PLD0 | PLD/PLD0 | SV1033-15A EM0833PLD 8500 Frames, REL 12/19/13 |
| 3072085 | 05/07/14 | 1:41pm | PLD1 | PLD/PLD1 | SV1072-15A EM0833PLD 8500 Frames, REL 12/19/13 |
| 0 | 05/07/14 | 1:41pm | CPLD | SV105500A | SV1055-00A |
| 0 | 05/07/14 | 1:41pm | CPLD1 | SV105501 | SV1055-01A |
| 163379 | 05/07/14 | 1:41pm | MTRX0 | BIN/MTRX0 | SV0000-00A EM0833Mtrx8144 May 7 2014 12:00:15 |
| 162091 | 05/07/14 | 1:41pm | MTRX1 | BIN/MTRX1 | SV0000-00A EM0833Mtrx8280 May 7 2014 12:00:21 |
| 162747 | 05/07/14 | 1:41pm | MTRX3 | BIN/MTRX3 | SV0000-00A EM0833Mtrx8576 May 7 2014 12:00:29 |
| 162813 | 05/07/14 | 1:41pm | MTRX4 | BIN/MTRX4 | SV0000-00A EM0833Mtrx8576Plus May 7 2014 12:00:36 |
| 160995 | 05/07/14 | 1:41pm | MTRX5 | BIN/MTRX5 | SV0000-00A EM0833Mtrx8140 May 7 2014 12:00:08 |
| 2330470 | 05/07/14 | 1:41pm | OS | BIN/OS | SV0000-00A EM0833OS May 7 2014 12:00:43 |
| 4006296 | 05/07/14 | 1:41pm | IOXM0 | SV0984-1301 | EM0814, SV0984-13, Build: 1 NV8500 3Gig SDI DEM 8 COAX IN |
| 5103005 | 05/07/14 | 1:40pm | IOXM1 | SV0985-0600 | EM0817, SV0985-06, Build: 0 NV8500 288X288 3Gig XPT HYBRID |
| 7799500 | 05/07/14 | 1:40pm | IOXM2 | MRC_SV1036-2000 | EM0815, SV1036-20, Build: 0 NV8500 3Gig SDI EMB 16 COAX OUT |
| 7769204 | 05/07/14 | 1:40pm | IOXM3 | MRC_SV1056-1800 | EM0815, SV1056-18, Build: 0 NV8500 3Gig COAX 16 SDI / 2 TDM OUT |
| 4006296 | 05/07/14 | 1:41pm | IOXM4 | SV1015-1301 | EM0814, SV1015-13, Build: 1 NV8500 3Gig COAX 8 SDI / 1 TDM IN |
| 4529126 | 05/07/14 | 1:40pm | IOXM5 | SV1004-0700 | EM0819, SV1004-07, Build: 0 NV8500 144X144 3Gig XPT HYBRID |
| 232020 | 05/07/14 | 1:40pm | IOXM6 | SV0825-1400 | EM0785, SV0825-14, Build: 0 NV8500 3Gig SDI 18 COAX OUT |
| 235176 | 05/07/14 | 1:41pm | IOXM7 | SV0824-1401_EM0783 | EM0783, SV0824-14, Build: 1 NV8500 3Gig SDI 9 COAX IN |
| 235840 | 05/07/14 | 1:40pm | IOXM8 | SV0854-1301 | EM0662, SV0854-13, Build: 1 NV8500 288x288 3Gig XPT STD |
| 235860 | 05/07/14 | 1:40pm | IOXM9 | SV0975-1100 | EM0678, SV0975-11, Build: 0 NV8500 144x144 3Gig RED XPT STD |
| 210600 | 05/07/14 | 1:40pm | IOXM10 | SV0917-2200_EM0799 | EM0799, SV0917-22, Build: 0 NV8500 144X144 3Gig XPT STD |

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210600  05/07/14  1:40pm    IOXM11  SV0917-2200_EM0894 EM0894, SV0917-22, Build: 0 NV8500
                                                      144X144 3Gig XPT STD
210600  05/07/14  1:40pm    IOXM12  SV0917-2200_EM0895 EM0895, SV0917-22, Build: 0 NV8140
                                                      144x144 3Gig RED XPT STD
229372  05/07/14  1:40pm    IOXM13  SV0935-1100        EM0676, SV0935-11, Build: 0 NV8500
                                                      288x288 3Gig RED XPT STD
236232  05/07/14  1:41pm    IOXM14  SV0960-1400_EM0783 EM0783, SV0960-14, Build: 0 NV8144
                                                      3Gig SDI 9 COAX IN
235840  05/07/14  1:40pm    IOXM15  SV1108-1101        EM0785, SV1108-11, Build: 1 NV8500
                                                      HD SDI 18 COAX OUT
231608  05/07/14  1:41pm    IOXM16  SV1110-1400_EM0783 EM0783, SV1110-14, Build: 0 NV8500
                                                      HD SDI 9 COAX IN
235840  05/07/14  1:40pm    IOXM17  SV1109-1000        EM0785, SV1109-10, Build: 0 NV8144
                                                      HD SDI 18 COAX OUT
207212  05/07/14  1:40pm    IOXM18  SV1111-1000        EM0783, SV1111-10, Build: 0 NV8144
                                                      HD SDI 9 COAX IN
235840  05/07/14  1:41pm    IOXM19  SV0961-1000        EM0785, SV0961-10, Build: 0 NV8144
                                                      3Gig SDI 18 COAX OUT
235840  05/07/14  1:40pm    IOXM20  SV0826-1200        EM0787, SV0826-12, Build: 0 NV8500
                                                      3Gig SDI 9 COAX OUT+EXP
235840  05/07/14  1:41pm    IOXM21  SV1112-1000        EM0787, SV1112-10, Build: 0 NV8500
                                                      HD SDI 9 COAX OUT+EXP
235840  05/07/14  1:40pm    IOXM22  SV0977-1200        EM0697, SV0977-12, Build: 0 NV8500
                                                      3Gig SDI 18 FIBER OUT
235840  05/07/14  1:40pm    IOXM23  SV1113-1000        EM0692, SV1113-10, Build: 0 NV8500
                                                      3Gig SDI EXP FILLER OUT
341600  05/07/14  1:40pm    IOXM24  SV0939-1100        EM0688, SV0939-11, Build: 0 NV8500
                                                      AES ASYNC 18 OUT
235840  05/07/14  1:41pm    IOXM25  SV0978-1000        EM0695, SV0978-10, Build: 0 NV8500
                                                      3Gig SDI 9 FIBER OUT+EXP
235840  05/07/14  1:40pm    IOXM26  SV0976-1000        EM0693, SV0976-10, Build: 0 NV8500
                                                      3Gig SDI 9 FIBER IN
341600  05/07/14  1:41pm    IOXM27  SV0938-1200        EM0687, SV0938-12, Build: 0 NV8500
                                                      AES ASYNC 9 IN
235840  05/07/14  1:40pm    IOXM28  SV0872-1101        EM0663, SV0872-11, Build: 1 NV8500
                                                      3Gig SDI 2 Monitor
3968228 05/07/14  1:41pm    IOXM29  SV1088-0015        EM0869, SV1088-00, Build: 15
                                                      NV8500 3Gig XR SDI DEM 8 COAX IN
3240140 05/07/14  1:40pm    IOXM30  SV1089-0001        EM0869, SV1089-00, Build: 1 NV8500
                                                      3Gig XR COAX 8 SDI / 1 TDM IN
6880152 05/07/14  1:40pm    IOXM31  SV1082-0800        EM0816, SV1082-08, Build: 0 NV8500
                                                      3Gig SDI EMB 8 COAX OUT+EXP
6738412 05/07/14  1:41pm    IOXM32  SV1083-0800        EM0816, SV1083-08, Build: 0 NV8500
                                                      3Gig COAX 8 SDI / 1 TDM OUT+EXP
3120264 05/07/14  1:40pm    IOXM33  SV1095-0700        EM0816, SV1095-07, Build: 0 NV8500
                                                      3Gig HYBRID OUT+EXP FILLER
5347409 05/07/14  1:41pm    IOXM34  MRC_SV1092-0100 EM0818, SV1092-01, Build: 0 NV8500
                                                      288X288 3Gig RED XPT HYBRID
423490  05/07/14  1:40pm    IOXM35  SV1094-0200        EM0818, SV1094-02, Build: 0 NV8500
                                                      288X288 3Gig RED XPT HYBRID
4527051 05/07/14  1:40pm    IOXM36  SV1114-0301        EM0820, SV1114-03, Build: 1 NV8500
                                                      144X144 3Gig RED XPT HYBRID
227820  05/07/14  1:41pm    IOXM37  SV1115-0302        EM0820, SV1115-03, Build: 2 NV8500
                                                      144X144 3Gig RED XPT HYBRID
235840  05/07/14  1:40pm    IOXM38  SV1138-0101        EM0887, SV1138-01, Build: 1 NV8140
                                                      3Gig SDI 18 COAX IN
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 4566094  05/07/14  1:41pm    IOXM39  SV1164-0200_EM0899 EM0899, SV1164-02, Build: 0 NV8500
                                                        144X144 3Gig XPT HYBRID
 4566094  05/07/14  1:41pm    IOXM40  SV1164-0200_EM0900 EM0900, SV1164-02, Build: 0 NV8140
                                                        144X144 3Gig RED XPT HYBRID
 3996376  05/07/14  1:41pm    IOXM41  SV1162-0102        EM0898, SV1162-01, Build: 2 NV8140
                                                        3Gig SDI DEM 18 COAX IN
 3996376  05/07/14  1:40pm    IOXM42  SV1163-0102        EM0898, SV1163-01, Build: 2 NV8140
                                                        3Gig COAX 16 SDI / 2 TDM IN
  235840  05/07/14  1:41pm    IOXM43  SV1159-0100        EM0887, SV1159-01, Build: 0 NV8140
                                                        HD SDI 18 COAX IN
  235840  05/07/14  1:40pm    IOXM44  SV1169-0100        EM0892, SV1169-01, Build: 0 NV8140
                                                        3Gig SDI 18 FIBER IN
  235840  05/07/14  1:40pm    IOXM45  SV1149-0200        EM0896, SV1149-02, Build: 0 NV8500
                                                        288x288 3Gig XPT STD
13756032  05/07/14  1:41pm    IOXM46  MRC_SV1126-1902 EM0878, SV1126-19, Build: 2 NV8500
                                                        3Gig SDI DEM/EMB 16 COAX OUT
  235176  05/07/14  1:41pm    IOXM47  SV0824-1401_EM0902 EM0902, SV0824-14, Build: 1 NV8500
                                                        3Gig SDI 9 COAX IN
  236232  05/07/14  1:41pm    IOXM48  SV0960-1400_EM0902 EM0902, SV0960-14, Build: 0 NV8144
                                                        3Gig SDI 9 COAX IN
  231608  05/07/14  1:41pm    IOXM49  SV1110-1400_EM0902 EM0902, SV1110-14, Build: 0 NV8500
                                                        HD SDI 9 COAX IN
 4006296  05/07/14  1:40pm    IOXM50  SV1172-0401        EM0903, SV1172-04, Build: 1 NV8500
                                                        3Gig SDI DEM 8 COAX IN
 4006296  05/07/14  1:41pm    IOXM51  SV1173-0401        EM0903, SV1173-04, Build: 1 NV8500
                                                        3Gig COAX 8 SDI / 1 TDM IN
 6878208  05/07/14  1:40pm    IOXM52  SV1174-0800        EM0816, SV1174-08, Build: 0 NV8500
                                                        3Gig SDI DEM/EMB 8 COAX OUT+EXP
10960900  05/07/14  1:40pm    IOXM53  SV1123-0401        EM0886, SV1123-04, Build: 1 NV8500
                                                        3Gig SDI FRAMESYNC 8 COAX IN
  391240  05/07/14  1:41pm    IOXM54  SV1189-0100        EM0919, SV1189-01, Build: 0 NV8500
                                                        288x288 3Gig RED XPT STD
  424079  05/07/14  1:40pm    IOXM55  SV1190-0100        EM0919, SV1190-01, Build: 0 NV8500
                                                        288x288 3Gig RED XPT STD
 4250631  05/07/14  1:41pm    IOXM56  SV1187-0101        EM0920, SV1187-01, Build: 1 NV8500
                                                        144X144 3Gig RED XPT STD
  227916  05/07/14  1:40pm    IOXM57  SV1188-0101        EM0920, SV1188-01, Build: 1 NV8500
                                                        144X144 3Gig RED XPT STD
  232324  05/07/14  1:40pm    IOXM58  SV1203-0000        EM0785, SV1203-00, Build: 0 NV8500
                                                        3Gig SDI 16 M3 / 2 COAX OUT
       0  05/07/14  1:41pm    ROM     SV103804           SV1038-04A EM0833ROM Oct1 2010
                                                        09:37:32
       0  05/07/14  1:41pm    ROM1    SV1038-05          SV1038-05A EM0833ROMJun 10 2011
                                                        11:40:33
   72088  05/07/14  1:41pm    APP     MADI_APP           SV1073-06AVersion 6.1.0.58
    8382  05/07/14  1:41pm    BOOT    MADI_BOOT          SV0770-01A0 Version 1.2.0.0
 1484404  05/07/14  1:41pm    PLD     MADI_FROM_AA       SV1066-04A0; NV8900-AA->MADI
 1484404  05/07/14  1:41pm    PLD     MADI_FROM_AES SV1066-02A0; NV8900-AES(Coax)->MADI,
                                                        NV8900-AES(Bal)->MADI
 1484404  05/07/14  1:41pm    PLD     MADI_TO_AA         SV1067-05A0; NV8900-MADI->AA
 1484404  05/07/14  1:41pm    PLD     MADI_TO_AES        SV1067-02A0; NV8900-MADI-
                                                        >AES(Coax), NV8900-MADI->AES(Bal)
    4838  05/07/14  2:23pm    DB/RF.VER
```

The following frames are supported by this RF file:

NV8576
NV8280
NV8144
NV8576 Plus
NV8140

## SV1072-15

### Changes from SV1072-14

1 Added commands to high speed com containing video reference formats. Used on APC2 frame sync cards to report reference information to iControl.

2 Added commands to input cards (particularly the APC2 frame sync card) specifically to turn on select outputs. This normally results in 4 of 5 outputs being on instead of all 5 (per input) in order to save power.

3 Added registers for testing 4K coherent switching.

There are no known errata.

This file is for the EM0833-10 assemblies and newer.

## SV1203-0000

File Names: SV1203-0000.bit, .mcs

### Supported Assemblies

- EM0785-01

  Versions prior to the one above support this code but will not report version information in MRC.

### Key Features, Additions, or Changes for this Release

- New code to support M3 rear only.  Will not pass video when other rears are used.
- Uses same EM0785 as other standard output cards

## Other Changes

There were no changes in any other component.