Digital View Ltd

RM-DN3 Firmware Version 1.6

RELEASE NOTE

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1 RM-DN3 Firmware 1.6

The RM-DN3 is Digital View's flagship Internet-connected MPEG-1/MPEG-2/JPG video and stills player.

This release note, intended for technical users, describes the new version 1.6 firmware for the RM-DN3. This *major new firmware release* rolls all previous releases into one new one, and contains significant new functionality with respect to version 1.5. This new functionality is described in great technical detail in this document. It includes:

- **Various entirely new functions**, including.
  - Optional “playlist scheduling per day”.
  - Merging of previous customer-specific versions.
  - GPRS support
  - Multi-day scheduling
  - ASCII serial output of played filenames

- **Functions that enhance field reliability or supportability**, including:
  - FTP can resume a failed download and continue where it left off.
  - More automatic reboots, e.g. if FTP process hangs due to ISP issue.
  - Better detection and handling of corrupt playlists etc.
  - Reporting of more possible errors, to enhance supportability.
  - Reporting of jumper settings for jumpers that are sometimes set wrong.
  - Reporting of synchronisation status, for synchronised units.

- **Changes, fixes, small additions.**
  - Better FTP timeout handling.
  - Correct JPG handling when erasing all content.
  - Better ways to ensure no continued connections during “do not connect” period.
  - Many other small improvements.

Before upgrading please check with Digital View support. Note: In contrast to previous versions, a player will not automatically reboot after being upgraded unless .INI files are also sent.

This document is meant for technical users. If you do not understand it, please refer to Digital View technical support or your own IT department.

2 Technical Details: New since v1.50

A) Various New Features:

Feature	Description	Done	OK
Merge customer-specific versions	This version supports all functions and modifications created since 1.5 for all customers.	ok	y
Multi-channel audio support	Using a new Sigma driver allows the DN3 to support multi-channel audio formats. (This needs specially formatted content to work; at present DV Studio cannot generate this content so it must be created manually).	ok	y
New option to output the filename to the serial port when the DN3 starts playing a file.	To enable this new function, set below items in netcfg.ini: `FILENAME_TO_SERIAL_BAUDRATE=` [baudrate] (default: 0) If set to 0, the function is disabled. Supported baudrates are: 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200. Output format is: `[filename]<cr><lf>`		
Multi-day scheduling	The RM-DN3 now supports multi-day playlist scheduling; that is, the ability to support different playlist schedules every day of the week. See appendix 1. (NB*:* the old binary schedule format generated by DV_Studio is no longer supported).	ok	y
JPG over MPG overlay function, to get “JPGs with sound”.	The firmware supports “jpeg over mpeg” functionality. If a JPG exists with the same name as an MPG, it will be displayed for the duration *instead of* the MPG, while MPG *sound* plays. To enable this jpeg overlay function: 1. Set ENABLE_JPEG_OVERLAY=1 in netcfg.ini (default value = 0.) 2. Copy the jpg to the CF card with the same filename as the target mpg file. Eg to overlay a jpeg to “123.mpg”, you should copy the jpg file to CF card with filename “123.jpg”. 3. Refer to the .MPG (not the .JPG) in the playlist.		

Feature	Description	Done	OK
GPRS enabled (experimental only)	Support for GPRS router has been added (as an experimental feature only, so far). Set the following in netcfg.ini: MY_ETH=2 MODEM_PORT=2 GPRS_PHONE=***** GPRS_USERNAME=***** GPRS_APN=****** GPRS_PASSWORD=***** GPRS_DISCONNECT=0|1 (Specify whether GPRS needs to disconnect after CIMP Session: 1=Disconnect; 0= Connection always on).		

B) Features that can enhance reliability and supportability:

Feature	Description	Done	OK
Delay a second after dropping DTR, then issue +++AT<cr> and ATH<cr> to modem.	Upon reboot, the DN3 drops DTR on the serial port. After dropping DTR, the DN3 unit now pauses and issues another “hangup” to the modem. This can help free “stuck modems”.	ok	y
Only Dialup 2 (hard reboot) triggers “reset mirror number”.	Only a hard reset can trigger a rest of the mirror number.	ok	y
Reboot after cimp.ini or netcfg.ini are downloaded.	The unit now reboots after cimp.ini or netcfg.ini are downloaded. This ensures new settings are activated. The reboot will be triggered after whole cimp session; the DN3 reports “dialup 4” (setting changed) to RT.COM at this next connection.	ok	y
FTP Resume function	An intelligent “FTP resume” function has been added that allows a failed FTP session to resume, if the mirror number is still the same as when the FTP transfer failed.	ok	y
Report JP6 Jumper settings to server.	Via a new setting in CIMP.INI, the unit can report the settings on jumper JP6, “video output”. This allows the user to see how the video output is routed (VGA, Direct Panel Connect or Video Out). *(See CIMP.INI section for settings details)*	ok	y
New Error Codes	The RM-DN3 can issue a number of new error codes for easier error analysis; see section 6.2	ok	y

Feature	Description	Done	OK
Report “bad project file” and “bad playlist” to server	Using this setting, the player reports “bad project file” and “bad playlist” errors to the Remotetransfer server, as error messages, eg msg err021 bad_pll msg err022 bad_prj See section 7 (appendix) for full details.	ok	y
File size reported with keepalive messages	When issuing optional keepalive messages, the unit also reports the file size of the file received so far.	ok	y
FTP Reboot timer added	A timer has been added that forces the DN3 to check its FTP process: if no content has been received for the number of seconds set, the player reboots and issues a “Dialup 11” message to the RT server. (See CIMP.INI section for settings details) *NOTE: using the WGET timeout method instead is recommended.*	ok	y
Added CIMPC heartbeat	Another level of safety added: The CIMPC process (CIMP client) tells the DN3Main process every second that it is still alive. If this ever stops, the player is restarted.	ok	y
Added a way to set MTU size to DN3 data settings	If an ISP uses non-standard MTU sizes, the size can be adjusted here on the RM-DN3. This allows you to use non-standard ISP's.	ok	y
Report Sync Status to CIMP server	If a player plays in synchronised mode, it can now report its synchronisation status (Active/Not Active/Disconnected) to remotetransfer when it dials in – see table 1 below.	ok	y

Table 1: Sync Status report

netcfg.ini	sync status	message
sync_enable=0	n/a	-
sync_enable=1	active	msg sync_active 1
sync_enable=1	not active	msg sync_active 0
sync_enable=1	disconnected	msg sync_active -1

C) Small changes, adjustments and fixes:

Feature	Description	Done	OK
Ensured that volume level is always properly set	Volume level is now properly set and the right defaults are kept even if all of playlist, server and on screen switches try to control player volume. Server and switch settings are now kept as defaults, and playlist volume adjustments affect the played track only. *See the table on page 9 for details.*	ok	y
Added FTP Resume function in Restore mode.	The “restore file” mode now also supports the FTP resume function – this makes file transfers even more reliable.	ok	y
Restore file is recorded when player tries to play a non-existent track	The player did not always send a “restore issued” every time a track was missing, except at startup. Now, the player issues this at every connect.	ok	y
Always display correct OSD message when updating firmware.	The DN3 always displays an OSD message while updating firmware, and clears the OSD message before the kernel update so that we see the correct status of the update on OSD.	ok	y
Bug fix when only one playable file present	RMDN3 now correctly resumes playback after downloading the playable content.	ok	y
Disable player status OSD when info_message=0	Disable player status On Screen Display when info_message is set to 0.	ok	y
Customer Special function: phone call aggregate logging.	Unit can optionally capture "[duration]\r\n" from Comm port with setting 9600,8,N,1 and report datalog to RT.COM in the following format: log log yyyymmdd [time_range] phone_call [duration]. To enable this function, set the following in netcfg.ini: FREEFONE_ENABLE=(0|1) (default is 0)		
Enable / Disable telnet as a setting in netcfg.ini.	The RM-DN3 has a telnet client for internal (LAN only) debugging use. This can be disabled/enabled by adding this to NETCFG.INI: ENABLE_TELNET=0|1 (0 – Disable, 1 – Enable; Default: 0)	ok	y
Ignore tags	CIMP.INI and NETCFG.INI will now ignore tags such as [RMDN3] and [CIMP] at the start – now optional.	ok	y
Display f/w version	Full firmware version is displayed at bootup	ok	y
Remove “Alpha Support” message when using FAT32	The unnecessary “Alpha Support” message will no longer be displayed when using CF cards that have been formatted as FAT32.	ok	y

Feature	Description	Done	OK
Suspend auto reboot timer when not within cimp_effective_date_time	Ensure that the auto reboot timer is suspended outside the “do not dial” time. This avoids a reboot happening immediately on entering the dial-allowed period. *(See CIMP.INI section)*	ok	y
Fix “panel on audio muted” issue for installations with both audio and optional panel on/off switching	New order: - Panel On - Unmute - Play next video	ok	y
Add “Sound off” to “Panel Off”, for installations with both audio and optional panel on/off switching.	When the panel is turned off, the sound is also turned off.	ok	y
Erase JPGs too on “R 0 0 0” command.	Erase .JPG files as well, when receiving an erase command. In previous versions these were left on the card.	ok	y
DN3 no longer takes mirror number from “restore file”.	DN3 should not take its mirror number from a “restore file” interaction, whether successful or not – it should just be ignored.	ok	y
Reboot the DN3 when FTP connection still active at end of active connect time.	The DN3 is now rebooted automatically if an FTP connection is still active at the end of the active_connect time.	ok	y
Better WGET handling during fast data transfers	The unit issues disk-synchronisation commands and disk flush commands regularly to avoid very fast (>5 mbps) data downloads from hanging the unit.	ok	y
DN3 sets proper default values when no netcfg.ini or cimp.ini exist	The DN3 correctly sets all its default values as defined in the DN3 configuration document when no .ini files exist.	ok	y
Occasional incorrect “uptime” reporting fixed	Uptime reporting was sometimes wrong: a reboot would occasionally report a long uptime instead of zero uptime. This has been fixed.	ok	y
Set which FTP address should be used	This fixes an issue when a unit connects while it is synchronised: The unit now knows correctly which FTP server to use, as in the table below:	ok	y

Table 1: Synchronised FTP Server Usage

netcfg.ini	sync status	FTP server
sync_enable=0	n/a	CIMP_FTP_IP
sync_enable=1	active	SYNC_FTP_IP
sync_enable=1	not active	SYNC_FTP_IP
sync_enable=1	disconnected	CIMP_FTP_IP

Section 4 of this note describes the new .ini file settings associated with this firmware release.

Volume settings: volume control is best done in one place at a time: on th eserver, or via the play list.

When in contrast to this volume settings are done in multiple locations (the server, the playlist, and the on-screen or player-mounted mute button and volume control), conflicts, or at least a lack of obvious logic, may result. This table therefore explicitly states how all settings are handled in this latest firmware:

Setting	Current Player Volume	Default Player Volume
PRESET_VOLUME in netcfg.ini	Affected	Affected
Volume up/down button pressed	Affected	Affected
Mute button pressed	Affected	Not affected
Preset volume in tracks	Affected	Not Affected
Volume control by CIMP server	Affected	Affected
Volume configured by “Startup Menu”	Affected	Affected
Persist after system reboot?	No	Yes
Which volume level will be used when preset volume in a track is “no change”?	-	This one!

3 Upgrading

3.1 Software for the RM-DN3

To check your current firmware version: if your OSD (on screen display) is turned on, the unit normally reports firmware upon startup. Also, every unit reports its firmware version to the RemoteTransfer server every time it connects, and you can read the last reported firmware for each connected player on remotetransfer.com.

To upgrade the player from version 1.5, you need:

- The new firmware: file ram2rom.dn3.
- (Optional: a new kernel: file kernel.dn3 – not needed for 1.5 to 1.6 firmware upgrade. The recommended kernel for 1.50.00 and above is kernel version 2.4.20.05).
- A working RM-DN3 player.
- Reliable power that will not go off during the upgrade.

Once you have that, proceed as follows:

1. Upload the ram2rom.dn3 file (and the optional kernel.dn3 file) at the same time via Remotetransfer, or put the ram2rom.dn3 (and optional kernel.dn3) on a CF card and start the player.
2. Do not touch the player while the upgrade is in progress. This can take a minute.
3. After the update, the player should start playing normally. Now reboot the player, and check that it restarts correctly with firmware version 1.6. You can confirm that on screen and on remotetransfer.com.

NOTE: Before upgrading please check with Digital View support. Note: In contrast to previous versions, a player will not automatically reboot after being upgraded: a reboot must be done manually (or a group reboot command issued by DV support).

3.2 Associated software for the Digital View CentrePoint

CentrePoint software associated with this release is:

- Sync Daemon: dn3syncd v0.01.54 or higher (earlier versions if used with firmware 1.6 had a problem syncing MPEG stills.)
- CIMP client: cimpc v0.00.32 or higher.

Note: the RM-DN3 must be upgraded first. It is backward compatible. 'CentrePoint cimp' is not backward compatible (i.e. the new version requires the latest version of RM-DN3.) After upgrading a CentrePoint, check that it has upgraded correctly (check the server logs).

We recommend upgrading the CentrePoint cimpc to version 0.00.32 after upgrading the RM-DN3. Please contact Digital View Systems Administration or Digital View RemoteTransfer PROMS support (rtsupport@digitalview.com) for CentrePoint upgrade instructions, or in North America, call 1-866-DV PROMS.

4 New RM-DN3 Settings

4.1 cimp.ini

This file contains most of the “remotetransfer” settings. It is read every time the player connects (i.e. at time interval determined by “cimp interval” setting).

Note: some CIMP settings are only read at bootup, so to strictly ensure that all settings take effect a reboot is necessary after changing this file.

This file is not erased from the CF card on the player, even when the player is “reset”. Nevertheless, it is good practice to always have this file present in the group, as (a) a player could be replaced, and (b) without this, it is impossible to know a player's settings without physically going to the player.

NEW SETTINGS:

Section	Setting	Value
CIMP	ENABLE_FTP_CUTOFF=0|1	When this setting is enabled, any FTP transfers in progress when the end of the “dialup time” (DL_ACTIVE time) is reached are killed (we accomplish this with a system reboot).
CIMP	SUSPEND_AUTO_REBOOT_TIMER=0|1	Pause the auto reboot timer during the “do not dial up” period. 0 = do not suspend 1 = suspend Default: 1.
CIMP	JP6_STATUS_MSG=0|1	Should the JP6 jumper setting be reported to the server? 0 = do not report jumper setting 1 = report jumper setting Default: 0 Message format is "msg jumper bbbb" ...where each “b” can be “1” (shorted) or “0” (open)
CIMP	FTP_REBOOT_TIMER=n	During an FTP file transfer, number of seconds of no FTP activity to wait until rebooting the unit. If this timer is configured, the DN3 will check the file modified date of the FTP tempfile every n seconds (where n is the no. of seconds). If the modified date is the same on 2 consecutive checks, the DN3 is rebooted with a subsequent message of “Dial 10” to the RT server. Value of n in seconds. Default: 0 (disable).

4.2 netcfg.ini

This file contains most of the “network” and various other player settings. It is read every time the player connects (i.e. at time interval determined by “cimp interval” setting). No reboot is necessary after changing this file.

This file is not erased from the CF card on the player, even when the player is “reset”. Nevertheless, it is good practice to always have this file present in the group, as (a) a player could be replaced, and (b) without this, it is impossible to know a player's settings without physically going to the player.

NEW SETTINGS:

Section	Setting	Value
RMDN3	GPRS_PHONE=***** GPRS_APN=****** GPRS_USERNAME=***** GPRS_PASSWORD=***** GPRS_DISCONNECT=0|1	Support for GPRS router has been added (as an experimental feature only, so far). To use GPRS, set the following in netcfg.ini: MY_ETH=2 MODEM_PORT=2 GPRS_PHONE=***** GPRS_USERNAME=***** GPRS_APN=****** GPRS_PASSWORD=***** GPRS_DISCONNECT=0|1 (This specifies whether GPRS needs to disconnect after CIMP Session: 1=Disconnect; 0= Connection always on).
RMDN3	FREEFONE_ENABLE=(0|1)	Customer Special function: phone call aggregate logging. DN3 can optionally capture "[duration] \r\n" from Comm port with setting 9600,8,N,1 and report datalog to RT.COM in the following format: **log yyyymmdd [time_range] phone_call [duration].** Active when set to 1. (Default is 0).
RMDN3	ENABLE_JPEG_OVERLAY=(0|1)	The firmware supports “jpeg over mpeg” functionality. If a JPG exists with the same name as an MPG, it will be displayed for the duration instead of the MPG (while MPG sound plays). To enable this jpeg overlay function, you need: 1. Set ENABLE_JPEG_OVERLAY=1 in netcfg.ini (default value = 0). Then copy the jpg to the CF card with the same filename as the target mpg file. Eg if you want to overlay a jpeg to “123.mpg”, then you should copy the jpeg file to CF card with filename “123.jpg”.
RMDN3	WGET_TIMEOUT=	Timeout time (in seconds) of a wget download. This means the transfer is killed after n seconds of non-activity. Default=300. (When Wget does not receive a block of data for WGET_TIMEOUT seconds, CIMPC kills wget and restarts it a total of WGET_RETRY times. After that, it resumes normal CIMP functionality.)

Section	Setting	Value
RMDN3	DEFAULT_PROJECT_FILE= [Project name]	The default value is DEFAULT.PRJ. If [Project name] is set to 0, ("DEFAULT_PROJECT_FILE=0'), then the DN3 will not load any project files and will not issue error messages when no project file is present. *NOTE: this has been renamed from earlier versions.*
RMDN3	ENABLE_SIMPLE_PLAYBACK=(1|0)	This enables (1) or disables (0) simple playback mode (i.e. Use without a playlist). Default is 1.
RMDN3	WGET_RETRY=	Number of retries after a wget timeout. Default=1. (When Wget does not receive a block of data for WGET_TIMEOUT seconds, CIMPC kills wget and restarts it a total of WGET_RETRY times. After that, it resumes normal CIMP functionality.)
RMDN3	ENABLE_TELNET=(0|1) 0 -- Disable 1 -- Enable Default: 0	The RM-DN3 has a telnet client for internal (LAN only) debugging use. This can be disabled/enabled by adding this to NETCFG.INI. Values: 0 -- Disable 1 -- Enable Default: 0
RMDN3	DIRECT_KB_ENABLE=(0|1)	Custom function: direct USB keyboard capture (support for custom application where a keyboard is used to press "any button"). Default 0. NOTE: this setting is effective only when kernel version 2.4.20.07 is used.
RMDN3	OSD_KERNEL_VERSION=(1|0)	Add OSD message: display kernel version of player (default: 1)
RMDN3	MTU_SIZE=xxxx xxxx = MTU size; Default: 0 (follow Linux default value, currently 1500)	A way to adjust MTU Size of any connection. This setting is useful when using non-standard ISPs. MTU_SIZE=xxxx, where xxxx is the MTU size, and its default is 0, which means follows Linux default value (currently 1500).

5 Appendix: schedule.ini file format

This appendix describes the format of the optional new schedule.ini file.

Background: DV Studio can generate a schedule.ini file that tells the player to play different playlists at different times of day. This old DV-studio generated format schedule file is no longer supported. Instead, an ASCII-format file must be generated (manually, at present). The format of that file is described here.

IMPORTANT NOTES:

1. With the new 1.6 firmware, DO NOT use schedule files generated by DV-Studio directly. These are not supported anymore. Make sure you have written a schedule file manually.
2. DO NOT use Task Names with more than 10 characters.
3. DO NOT add any character before the open bracket character " [" on a task tag, unless you want to disable that task.
4. DO NOT use the PANEL_ON_TIME / PANEL_OFF_TIME settings in netcfg.ini when you are using CMD:PANEL_ON / CMD:PANEL_OFF in schedule.ini.

5.1 How to set up a scheduled RM-DN3 based player:

1. Use DV Studio to create a number of playlists, and add a schedule task.
2. Export the files to CF card.
3. Using an ASCII editor like Notepad, edit the *.sch file for the advanced scheduling functions you require. (the format of new sch file is shown below)
4. Plug the CF card to DN3 and reboot it.

5.2 Format of the file:

The schedule file is a file named “schedule.ini”. It is an ASCII file containing tasks, like this:

```
# Optional Comment
[TASK_N]
ACTION={playlist_name|command_name}
START_TIME=HHMMSS
WEEKDAY={0|1|2|3|4|5|6}
```

Where:

- [TASK_N] : the name of task.
- ACTION: either playlist file name or the command name. Command supported now - CMD:PANEL_ON / CMD:PANEL_OFF only.
- START_TIME: the time to trigger the playlist.
- WEEKDAY (optional): the specified weekday for this task. Sunday=0, Monday=1, etc. If this item is not set, the task will be scheduled every day.

Note: To use the Panel Commands, please don't use with the PANEL_ON_TIME and PANEL_OFF_TIME at the same time in netcfg.ini.

Example:

```
# Example schedule.ini File
# Created March 2004

[Task1]
ACTION=PListA.pll
START_TIME=100000
WEEKDAY=2

[Task2]
ACTION=PListB.pll
START_TIME=153000

[Task3]
ACTION=CMD:PANEL_ON
START_TIME=180000
WEEKDAY=4
```

This example schedule file will:

i. Start playing PListA.pll at 10:00:00 every Tuesday.
ii. Start playing PListB.pll at 15:30:00 (3:30pm) every day.
iii. Turn on the smart panel at 18:00:00 (6pm) every Thursday.

Notes:
– The schedule file generated by DV Studio is no longer supported. Replace it by the new file.
– When turned on, the system deduces “where it should be” and plays the appropriate content.

6 Appendix: dialup and error messages

6.1 RM-DN3 Dialup Messages

When the RM-DN3 dials up or reboots, it tells the server the reason for that event (powered on, regular connect, auto reboot, etc).

Dialup reasons can be:

Dialup 1	Interval Dialup (Regular connect as set in CIMP.INI)
Dialup 2	Dialup after Hard Reboot (Connect due to power off/on reboot)
Dialup 3	Was Server Issued Reboot – now see Dialup 8
Dialup 4	Dialup after Settings Change
Dialup 5	Dialup after Error in last CIMP session
Dialup 6	Callback requested
Dialup 7	Dialup after Auto Reboot
Dialup 8	DN3 rebooted by CIMP server
Dialup 9	Dialup after reboot due to Firmware upgrade
Dialup 10	Dialup due to FTP Reboot - (Data Timeout)
Dialup 11	Dialup due to FTP Reboot – (Session Timeout)
Dialup 12	Dialup due to CIMP Reboot – (Session Timeout)

6.2 RM-DN3 Error Messages

When the RM-DN3 encounters an error, it sends the CIMP server an error message when it next connects. The full list of these error messages follows:

CODE	MEANING	NEW IN
err003	Unknown FTP error	1.5
err004	WGet no response	1.5
err005	Disk Full	1.5
err006	File not exist on FTP Server	1.5
err007	MD5 Error	1.5
err008	FTP connection broken	1.5
err009	FTP login fail	1.5

err015	CF card not found	1.5
err016	FTP Server not found	1.52.04
err017	Passive mode not supported in FTP Server	1.52.04
err018	Write to CF card fail while FTP	1.52.04
err020	Missing project	1.52.05
err021	No project but playlist(s) exist.	1.52.05
err022	Corrupted project	1.52.05
err023	No Playlist inside project	1.52.05
err030	Missing playlist	1.52.05
err031	Corrupted playlist	1.52.05
err032	All tracks in playlist are absent	1.52.05
err033	Not enough memory	1.52.05

7 Appendix: playlist error handling

Test Seq.	en-able_si mple_ play-back	default_proj ect_file name?	prj	pll	*playback*	*Message reported*
1	1	yyyyyy.prj	missing	missing	Simple playback mode	msg simple_playback_enabled 1 err020 yyyyyy.prj
2	1	yyyyyy.prj	missing	Good or corrupted	Simple playback mode	msg simple_playback_enabled 1 err020 yyyyyy.prj
3	1	yyyyyy.prj	good	missing	Simple playback mode	msg simple_playback_enabled 1 err030 zzzzzz.pll
4	1	yyyyyy.prj	good	Corrupted	Simple playback mode	msg simple_playback_enabled 1 case “corrupted playlist”: err031 zzzzzz.pll case “all tracks in playlist are absent”: err032 zzzzzz.pll case “not enough memory”: err033 zzzzzz.pll
5	1	yyyyyy.prj	good	good	Normal playback by yyyyyy.prj	N/A
6	1	yyyyyy.prj	corrupt-ed	Good, missing or corrupted	Simple playback mode	msg simple_playback_enabled 1 case “corrupted project”: err022 yyyyyy.prj case “no playlist inside project”: err023 yyyyyy.prj
7	1	0	ANY	ANY	Simple playback mode	msg simple_playback_enabled 1
8	0	yyyyyy.prj	missing	missing	Screen hold	err099 err020 yyyyyy.prj
9	0	yyyyyy.prj	missing	good	Screen hold	err099 err021 yyyyyy.prj
10	0	yyyyyy.prj	missing	corrupted	Screen hold	err099 err021 yyyyyy.prj

11	0	yyyyyy.prj	good	missing	Screen hold	err099 err030 zzzzzz.pll
12	0	yyyyyy.prj	good	Corrupted	Screen hold	err099 case “corrupted playlist”: err031 zzzzzz.pll case “all tracks in playlist are absent”: err032 zzzzzz.pll case “not enough memory”: err033 zzzzzz.pll
13	**0**	**yyyyyy.prj**	**good**	**good**	**Normal playback by yyyyyy.prj**	**N/A**
14	0	yyyyyy.prj	corrupt-ed	Good, missing or corrupted	Screen hold	err099 case “corrupted project”: err022 yyyyyy.prj case “no playlist inside project”: err023 yyyyyy.prj
	0	0	ANY	ANY	Screen hold	err099

8 Appendix: OSD messages

These are the possible OSD (on screen display) messages in version 1.6 of the firmware (only visible if OSD is enabled in the firmware and if you are using a connection interface that supports OSD – see the RM-DN3 manual).

“info messages” are displayed in -----> INFO area, CIMP area
“debug messages” are displayed in -----> DEBUG area
“boot messages” are displayed in -----> BOOT area.

8.1 Possible messages in INFO area:

- Play info:

```
PLAY
PAUSE
STOP
VOL: XX
REPEAT ON
REPEAT OFF
```

8.2 Possible Messages in CIMP Area:

- Data transfer info:

```
No JPEG/MPEG files.  Resetting mirror to 0.
PPP connection error
Connect error !
CIMP Complete.  Starting playback.
FTP timeout!
Keep alive with CIMP Server fail!
[FILE] [BYTE DOWNLOADED]/[TOTAL] ( [PERCENTAGE] )
```

- Pending reboot:

```
System reboot(x), remaining x s
```

- Synchronisation (when using CentrePoint):

```
Sync Activated
Sync Deactivated
Sync Disconnected
```

8.3 Possible Messages in DEBUG area:

- Debugging:

```
Set mirror to zero
Static IP
```

8.4 Possible Messages in BOOT area:

- Kernel info:

```
Kernel: [KERNEL_VERSION]
```

- Static/Dynamic IP info, Mask info, Gateway info, and DNS info:

```
SIP: xxx.xxx.xxx.xxx
DIP: xxx.xxx.xxx.xxx
DIP: DHCP ERROR

SSN: xxx.xxx.xxx.xxx
DSN: xxx.xxx.xxx.xxx
DSN: DHCP ERROR

SGW: xxx.xxx.xxx.xxx
DGW: xxx.xxx.xxx.xxx
DGW: DHCP ERROR

DNS1:xxx.xxx.xxx.xxx
DNS1:DHCP ERROR

DNS2:xxx.xxx.xxx.xxx
DNS2:DHCP ERROR
```

- CF card info:

```
CF CARD OK
CF CARD not found

CF CARD                    [OK]
CF CARD                    [FAIL]
```

- Network info:

```
Network                    [PPP]
Network                    [PPPoE]

Network                    [OK]
Network                    [FAIL]
```

- Various info:

```
Load custom OSD procedure
```

- Startup message:

```
RM-DN3 Ver. [FIRMWARE VERSION] xx-xx-xx-xx-xx-xx
```