

This is my analysis of the Dingoo Digital a320

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Document Version 0.2 (additional edits possible ;-)

Dingoo Digital a320 Firmware 1.

Source:

http://sience.schattenkind.net/dingoo/Dingoo_a320_eng.htm



Specification

- Display: 2.8 inch QVGA LTPS (Low Temperature PolySilicon) LCD Screen
- Memory: Internal 4GB, external Mini SD card
- Gaming Console Modes: NES, SNES, Sega Genesis, GBA, Neo-Geo, CPS1 and CPS2
- Compatible Video Formats: FLV, WMV, ASF, RM, AVI, MPEG, MP4, RMVB, SWF
- Compatible Audio Formats: MP3, WMA, APE, FLAC, WAV
- I/O Slots
- Earphone jack
- Mini-USB slot
- Mini-SD slot
- AV OUT (output to TV - NTSC or PAL, 16:9 or 4:3)
- Stereo Speakers
- Additional Media Functions:
 - FM Radio with recording function
 - Voice Recorder (MP3, WAV)
 - Image viewer (JPG, BMP, GIF, PNG)
 - Ebook reader (with text to speech function)
- Languages: English, Chinese (simplified), Chinese (traditional)
- Dimensions: 125mm x 56mm x 14mm (L x W x H)

Package Contents

- Model CVFH-N03-4G Portable Game Unit
- AV Cable

- AC Adapter
- Mini-USB adapter
- User Manual - English
- Earbuds

Transferrates:

- USB2.0
- charging via USB possible
- PC USB to internal 4gb
- ~2500-3000kb/s

TV-out:

- 4:3 / 19:9 mode
- PAL / NTSC
- Dingoo or TV (not at the same time!)
- Menue, Games, Videos, Music, all on TV, Audio too

Audio:

- Mp3 ID3-Tags (only when using internal 4gb)
- Modes: All Songs, Folder Once, Favorites, Album, Artist, Title, Music Search Mask
- Play Modes (All repeat, Order, Shuffle, Repeat Once, Once)
- 3d Audio Settings: Headphone Settings, 3d processing, Automatic volume, Bass, High Freq. compensation
- EQ: Normal, Jazz, Pop, Rock, Classic, Vocal, Treble, Bass, Customize (hier hat man einen richtigen Equalizer den man einstellen kann)
- Virtual sound field (On/Off)
- Background play
- Bookmark repeat
- Pause
- FAST FF/FR
- Song Skip

codec	mode	quality	samples	Rating (Problems?)
Mp3	CBR, VBR	all	http://ff123.net/samples.html	OK
WMA			installed Samples	OK
APE			installed Samples	OK
Flac		all	http://ff123.net/samples.html	OK
WAV				crackle
LRC			sync Songtexts for MP3 Files	OK

Video:

- Display Time
- Continue play
- different Zoom Modes
- Continue playlist of all Movies (i think this is really great)

Mpeg - container

codec	version	bitrate	resolution	audio codec, bitr	sample	Rating (Problems?)
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				ate, hz)
MPEG1	MPEG1	~1.9Mbps		MPEG-1 Layer 2, 384kbps	http://www.jhepple.com/support/SampleMovies/MPEG-1.mpg	OK
	MPEG1	~1.4Mbps		MPEG-1 Layer 2, 224kbps	http://www.jhepple.com/SampleMovies/MPEG-1_with_VCD_extensions.mpeg	OK
	MPEG1	~1.4Mbps		MPEG-1 Layer 2, 224kbps	http://www.jhepple.com/support/SampleMovies/vcd.mpg	
	MPEG1				http://samples.mplayerhq.hu/MPEG1/zelda%20first%20commercial.mpeg	OK
MPEG2	MPEG2	~6261kbps	720x576	MPEG-1 Layer 2, 48000Hz 256 kb/s tot , Stereo	http://samples.mplayerhq.hu/MPEG2/mpeg422/422_sample_from_DVB.mpeg	OK
	MPEG2	~7999kbps	720x576	NoSound	http://samples.mplayerhq.hu/MPEG2/interlaced/burosch1.mpg	slow
	MPEG2	~6513kbps	720x576	AC3, 48000Hz 448 kb/s tot , 6 chnls (3/2 .1)	http://samples.mplayerhq.hu/MPEG2/dvd.mpeg	slow, no sound
	MPEG2	~2.5Mbps		MPEG-1 Layer 2, 384kbps	http://www.jhepple.com/support/SampleMovies/DVD.mpg	BAD
	MPEG2	~2.7Mbps		MPEG-1 Layer 2, 224kbps	http://www.jhepple.com/SampleMovies/MPEG-2_with_Super_VideoCD_Extensions.mpeg	BAD
	MPEG2	~2.5Mbps		MPEG-1 Layer 2, 384kbps	http://www.jhepple.com/support/SampleMovies/SVCD.mpg	BAD
	MPEG2	~1.9Mbps		MPEG-1 Layer 2, 224kbps	http://www.jhepple.com/SampleMovies/Standard_MPEG-2.mpeg	BAD

AVI (AVI v1.0/2.0) - Container

codec	version	FPS	bitrate	resolution	audio codec, bitrate, ch., hz	sample	Rating (Problems?)
DivX 3 Low-Motion	DIV3	24.000	154kbps	480x200	mp3, 22050Hz 32 kb/s , Mono	http://samples.mplayerhq.hu/benchmark/testsuite2/Space_Cowboys.avi	OK
DivX	DX50	29.970	~900kbps	320x240	mp3, 44100Hz, stereo,	TV converted Movie lenght: 42min ~120MB	OK

					96kbps		
DivX 5.0.5	DX50	29.970	~809kbps	352x240	PCM, 44100Hz, stereo, 14 11 kbps	http://www.jhepple.com/support/SampleMovies/AVI_DivX.avi	OK
DivX 5.2.1	DX50	25.000	1789kbps	800x360	mp3, 44100Hz, Jstereo, 192kbps	http://www.atomicgamer.com/file.php?id=38772	slow
DivX 6.0.0	DX50	29.970	618kbps	640 x 480	NoSound	http://samples.mplayerhq.hu/V-codecs/DX50-DivX5/divx61/divx.6.0-qpel.avi	slow
DivX 6.0.0	DX50		all other doesn't work, dingoo needs reset			http://samples.mplayerhq.hu/V-codecs/DX50-DivX5/divx61/*all other*	BAD
DivX 5.1.1	DX50	29.9	4012kbps	720x404	mp3, 44100Hz, stereo, 160kbps, Joint Stereo, CBR	http://www.ausgamers.com/files/details/html/16334(Onyxia.avi)	slow
XviD 1.1.2	XVID	23.976	~951kbps	624x256	mp3, 48000Hz, stereo, 117kbps VBR	DVD converted Movie length: 1:30h ~714MB	OK
XviD ISO MPEG-4	XVID	23.976	~920kbps	704x304	Dolby AC3, 48000Hz 192 kb/s, Stereo	DVD converted Movie length: 1:37h ~736MB	OK
XviD 1.1.0	XVID	25.000	~834kbps	640x272	mp3, 44100Hz 93 kb/s tot , Joint Stereo	DVD converted Movie length: 1:40h ~709MB	OK
MPG4	MP42	30.000	~825kbps	352x288	PCM, 44100Hz, stereo, 14 11 kbps	http://www.jhepple.com/SampleMovies/AVI_to_MPEG-4.avi	OK
Motion JPEG	MJPG	20.000	636kbps	160x120	PCM, 11024Hz 88 kb/s (1 chnl)	http://samples.mplayerhq.hu/V-codecs/MJPEGs/Canon_Digital_IXUS/MVI_0005.AVI	OK
MPEG2	mpg2	23.976	489kbps	480x480	Dolby AC3, 48000Hz 192 kb/s tot , stereo	http://samples.mplayerhq.hu/MPEG2/Futurama1-tmp.avi	crash

Hints:

don't use: "DivX Style "packed bitstream AVI", higher resolutions than PAL, higher bitrates then >2000kbps, OpenDivx

MP4 - Container

codec	version	FPS	bitrate	resolution	audio codec, bitrate, ch., hz	sample	Rating (Problems?)
	mp4v	30.000	~2.3Mbps	320x240	-	http://people.sc.fsu.edu/~burkardt/data/mp4/mp4.html	OK
	mp4v	30.000	~100kbps	352x288	-	http://people.sc.fsu.edu/~burkardt/data/mp4/mp4.html	OK
	mp4v	30.000	~600kbps	320x240	-	http://people.sc.fsu.edu/~burkardt/data/mp4/mp4.html	OK
	mp4v	30.000	~2.3Mbps	320x240	-	http://people.sc.fsu.edu/~burkardt/data/mp4/mp4.html	OK
	AVC1	23.970	~1.7Mbps	720x288	x	movie.mp4	BAD

WMV - Container

codec	version	FPS	bitrate	resolution	audio codec, bitrate, ch., hz	sample	Rating (Problems?)
WMV	WMV3		~246kbps	320 x 240	WMA v2, 44100Hz, stereo, 65kbps	http://www.jhepple.com/SampleMovies/niceday.rm	OK
	WMV1		~379kbps	320x240	WMA2, 32000Hz, stereo, 32kbps	http://www.jhepple.com/support/SampleMovies/WindowsMedia.wmv	OK
	WMV 7	10	150kbps 2pass-VBR	352x288	No Sound	http://samples.mplayerhq.hu/V-codecs/WMV9/wmv-samples/sample-wmv7.wmv	OK
	WMV 8.1	10	150kbps 2pass-VBR	352x288	No Sound	http://samples.mplayerhq.hu/V-codecs/WMV9/wmv-samples/sample-wmv8.1.wmv	OK
WMV9/B-frames	WMV3	-	187kbps	320x240	WMA v2, 22050Hz 20 kb/s tot (2 chnls)	http://samples.mplayerhq.hu/V-codecs/WMV9/B-frames/bloodyback.wmv	OK
WMV9/BI-frames	WMV3	-	1007kbps	320 x 240	WMA v2, 44100Hz 127 kb/s tot (2 chnls)	http://samples.mplayerhq.hu/V-codecs/WMV9/BI-frames/psychonauts.wmv	OK

	WMV 9 Profile Main	10	150kbps 2pass-VBR	352x288	No Sound	http://samples.mplayerhq .hu/V- codecs/WMV9/wmv- samples/sample-wmv9- complex-CP.wmv	BAD
	WMV 9 Profile Simple	10	150kbps 2pass-VBR	352x288	No Sound	http://samples.mplayerhq .hu/V- codecs/WMV9/wmv- samples/sample-wmv9- main-MP@LL.wmv	BAD
	WMV 9 Profile Complex	10	150kbps 2pass-VBR	352x288	No Sound	http://samples.mplayerhq .hu/V- codecs/WMV9/wmv- samples/sample-wmv9- simple-SP@ML.wmv	BAD

Hints: don't use: don't use too complex Settings, higher bitrates then >2000kbps, AC3 as audio, OpenDivx

RM/RMVB

- RealMedia.rm - codec:RV40 - GOOD
- NICEDAY.RM - codec:RV30 - too fast, unsync - BAD

MOV

- conic.mov - codec:jpeg - GOOD
- hotwheel - codec:cvid - unknown Format - BAD
- intgeo.mov - codec:cvid - unknown Format - BAD
- trek.mov - codec:cvid - unknown Format - BAD http://www.ground-studios.com/site2005/downloads/soldner_modelling_demo.mov - BAD

3GP

- wrong codec used, unknown Format - BAD

ASF

- NiceDay.asf, codec:WMV3, ~340kbps, 320x240, audio: codec:WMA2, 44100Hz, stereo, 64kbps - GOOD

FLV (youtube)

- codec:FLV1, ~300kbps, 320x240, audio: codec:mp3, 22050Hz, Mono - GOOD
- codec:h264 - (all newer Youtube Videos!!) - unknown Format - BAD
- codec:VP6F - unknown Format - BAD

Record Audio:

Mic

- Low: Wav - IMA ADPCM, 16.000kHz, 4bit, Mono - ok
 - Middle: mp3 - 64kbit, 16.000kHz, MPEG 2.0 layer 3 - ok
 - High: mp3 - 64kbit, 16.000kHz, MPEG 2.0 layer 3 - ok
- Radio:
- Low: Wav - IMA ADPCM, 16.000kHz, 4bit, Mono - ok
 - Middle: mp3 - 64kbit, 16.000kHz, MPEG 2.0 layer 3, Stereo - ok
 - High: mp3 - 64kbit, 16.000kHz, MPEG 2.0 layer 3, Stereo - ok

Radio:

- FM Tuner 76.0MHz~108.0MHz
- automatic Scan, manuel Scan
- External Station List - Radio Station Names editable (FM.ini)
- internal Station List
- up to 40 Kanäle

-Background Play
-record Radio (s. Record Audio)

Pictures:

- Thumbnails preview Cache
- Slideshow with different blendmodes
- JPEG - 2592x1944x24BPP - ~2.5MB - ok
- animated GIF - 320x240x8BPP - ~120kb - ok
- Pictures can be applied to Menu-Backgrounds

Flash

Version	sample	Rating (Problems?)
Flash5	http://www.canfieldstudios.com/flash5/index.html	used Samples
	http://www.canfieldstudios.com/flash5/sinewave/index.html	BAD
Flash6	http://www.canfieldstudios.com/flashmx/index.html	used Samples
	http://www.canfieldstudios.com/flashmx/stopwtch/index.html	OK
	http://www.canfieldstudios.com/flashmx/mapzoom/index.html	OK
Flash7	http://www.canfieldstudios.com/flashmx2004/index.html	
	http://www.canfieldstudios.com/flashmx2004/primegen/index.html	BAD

I think Flash 6 is the only Flash that works. But you can't handle anything with the Keys.
So no Games. Sorry.

eBook:

Text2Speech - englisch sounds okay ;)

Bookmark

Autoscrolling

Position marker/return

Tools used:

[GSpot](#)

[Firefox](#)

Sample Movie Sites:

<http://www.youtube.com/watch?v=RjALf12PAWc> (FLV1)

http://www.jhepple.com/support/sample_movies1.htm (asf, mpeg, divx)

<http://www.cs.umt.edu/DX/movie.htm> (mov)

<http://people.sc.fsu.edu/~burkardt/data/mp4/mp4.html> (mp4)

<http://www.ausgamers.com/files/details/html/16334> (OOnyxia.avi)

<http://samples.mplayerhq.hu/V-codecs/>