# 2016

## H89-SBC H8D Utility

B	H89LDR HOST 2009 by	Les Bird	- 🗆 🗙
Load H89LDR client on the target machine. Set the COM port and connect a serial cable. Click RECEIVE to read a disk from the target machine or SEND to write a disk image to the target machine.			
COM5	✓ COM Port	Auto detect	
🗆 DS 🗌 8(	DTrk SY0 V 0 SIDE1 V Read Track	Volume override	0
Writing tr Writing tr Writing tr Writing tr Writing tr Writing tr Writing tr Writing tr Writing tr Writing tr File 448-4 Disk Volum Done Client is	ack 29 side 1 ack 30 side 1 ack 31 side 1 ack 32 side 1 ack 33 side 1 ack 34 side 1 ack 35 side 1 ack 35 side 1 ack 37 side 1 ack 38 side 1 ack 39 side 1 12A_Z37_Diagnostic_And_Conversion_Utilit e #0	ies.h8d sent	~
Volume Label:	HDOS 2.0 H/Z-37 Evaluation Disk ((C) He	ath Co 1981) 890-156	
Client Status	Current track: Done		Clear Log
RECEIVE	ABORT		SEND
Original H	89LDR CopyLeft 2004 by Dwight Elvey		Save LDR
		Norberto Collado norby@koyado.c 7/16/2016	om

## **Revision History and Disclaimer**

Revision History		
Revision	Date	Comments
1.0	07/16/2016	Initial draft by Norberto Collado

The purpose of this document is to allow the surviving classic computers to continue to function.

# Please don't use any of this material for any purpose other than personal hobby/interest without checking with the owner of the material.

Thank you for your understanding and consideration.



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## Introduction

This document provides details on how use the H8D Utility to be able to download or upload H8D images from the H17 controller floppy drive. Detailed instructions at the following link: <a href="http://sebhc.lesbird.com/software/Utilities/H8DUtility.html">http://sebhc.lesbird.com/software/Utilities/H8DUtility.html</a>

## **System Configuration**

H89 or H89-SBC with H17 disk controller, floppy drives, and MTR-90 Monitor. H17 controller configured as Primary Controller.

## H8D Utility

#### Key-in bootstrap code

- 1. Power-on the H89-SBC
- 2. Insert a blank hard sector floppy diskette into the H17 floppy drive
- 3. Type "H: **B**oot" and wait until you get the "**?Boot Error**", and proceed to Key-in the bootstrap program into the H89/H89-SBC memory as follows:

H: **B**oot

?Boot Error

H: Substitute 43000 <cr>

043000 315 257 <press space bar to enter next byte>

043001 121 323

043002 076 343

043003 041 323

043004 360 341

043005 042 323

043006 345 344

043007 076 75

043010 377 323

7/16/2016 2:14:11 PM

043011 062 343

043012 006 076

043013 040 14

043014 076 323

043015 201 340

043016 062 257

043017 010 323

043020 040 341

043021 076 76

043022 007 7

043023 315 323

043024 116 343

043025 100 333

043026 332 345

043027 245 333

043030 044 340

043031 377 41

043032 007 37

043033 315 43

043034 136 21

043035 031 132

043036 012 46

043037 106 333

043040 165 345

043041 156 37

7/16/2016 2:14:11 PM

043042 143 322

043043 164 37

043044 151 43

043045 157 333

043046 156 340

043047 163 22

043050 040 33

043051 101 351 <cr>

H: Go 43000 <cr>; type "G", type 43000, and enter "CR"

#### Install H8D Utility

- 1. Link to H8D Utility and support files:
  - a. <u>http://sebhc.lesbird.com/software/Utilities/xnafx31\_redist.msi</u> (install first)
  - b. <u>http://sebhc.lesbird.com/software/Utilities/xnafx40\_redist.msi</u> (install second)
  - c. <u>http://sebhc.lesbird.com/software/Utilities/H8DUtilityV1\_51.zip</u> (install third)

#### Launch H8D Utility

1. Start the H8D Utility



H8C	OUtility 2009,2013 by Les Bird		- • ×
Folder No folder selected Disk Image List	File List	0 Files	CATALOG
$\mathbf{\hat{\Gamma}}$			
Create 0 Disk Images	View Extract Ad	d Save to Text	Save to HTML
EMULATOR			Kelabel Version 1.51

2. Click on "*Create*" as shown above

H89LDR HOST 2009 by Les Bird -	×		
Load H89LDR client on the target machine. Set the COM port and connect a serial cable. Click RECEIVE to read a disk from the target machine or SEND to write a disk image to the target machine.			
COM6       COM Port       19200 baud       Image: Auto detect         COM6       0       SIDE1 v       Read Track       Volume override       From in	lage		
Volume Label: N/A			
Client Status Current track:	ear Log		
RECEIVE ABORT	SEND		
Original H89LDR CopyLeft 2004 by Dwight Elvey	ve LDR		

- 3. Select correct COM: Port as shown above
  - a. In my case is COM 5:

🗄 H89LDR HOST 2009 by Les Bird – 🗆 🗙				
Load H89LDR client on the target machine. Set the COM port and connect a serial cable. Click RECEIVE to read a disk from the target machine or SEND to write a disk image to the target machine.				
COM5       COM Port       19200 baud       Image: Auto detect         DS       80Trk       SY0       0       SIDE1       Read Track       Volume override       Fr	om image			
The operation has timed out.				
Client is not running or not connected.				
If the client program has not been entered yet go ahead and key it in as instructed in the H89LDR README file and then click the SAVE button to create a bootable client disk on the target machine.				
If you already have a bootable client disk then boot it now and click the CLIENT STATUS button when ready.				
Volume Label: N/A				
Client Status Current track:	Clear Log			
RECEIVE	SEND			
Original H89LDR CopyLeft 2004 by Dwight Elvey	Save LDR			

- 4. Click on "*Client Status*" to enable the "*SAVE*" button.
- 5. Ignore the error message that the "Operation has timed out" and proceed to the next step

🖹 H89LDR HOST 2009 by Les Bird – 🗖 🗙			
Load H89LDR client on the target machine. Set the COM port and connect a serial cable. Click RECEIVE to read a disk from the target machine or SEND to write a disk image to the target machine.			
COM5       ✓       COM Port       19200 baud       Image: Comparison of the sector of th	m image		
The operation has timed out.			
Client is not running or not connected.			
If the client program has not been entered yet go ahead and key it in as instructed in the H89LDR README file and then click the SAVE button to create a bootable client disk on the target machine.			
If you already have a bootable client disk then boot it now and click the CLIENT STATUS button when ready.			
Volume Label: N/A			
Client Status Current track:	Clear Log		
RECEIVE SAVE	SEND		
Original H89LDR CopyLeft 2004 by Dwight Elvey	Save LDR		

6. Click on "SAVE" to sync up to download the boot loader into the floppy drive

1	H89LDR HOST 2009 by	Les Bird	- 🗆 ×
Load H89LDR client on the target machine. Set the COM port and connect a serial cable. Click RECEIVE to read a disk from the target machine or SEND to write a disk image to the target machine.			
COM5 V CO	M Port D 19200 baud	Volume override	rom image
The operation has tim	med out.		
Client is not runni	Save to target?	×	
and key it in as in then click the SAV disk on the target	Client is ready. Save to a disk on the ta	rget machine?	
If you already have now and click the	Yes	No	
Sending H89LDR3.BIN H89LDR3.BIN sent suc The operation has tim Client is ready	cessrully med out.		
Volume Label: N/A			
Client Status	Current track:		Clear Log
RECEIVE Original H89LDR Copy	ABORT		SEND Save LDR

- 7. Click on "*Yes*" to save the "LDR" into the floppy
  - a. Write protect this diskette as it will be use to load the boostrap into the H89-SBC memory to eliminate the need to manually key-in the H89 bootstrap code.
  - b. Labeled the floppy diskette as "H8D Loader"
- 8. Insert a new hard sector floppy diskette into the H17 drive to download an H8D image

H89LDR HOST 2009 by Les Bird – 🗆 🗙				
Load H89LDR client on the target machine. Set the COM port and connect a serial cable. Click RECEIVE to read a disk from the target machine or SEND to write a disk image to the target machine.				
COM5 ✓ COM Port 19200 baud				
□ DS □ 80Trk SY0 ∨ 0 SIDE1 ∨ Read Track □ Volume override From image				
The operation has timed out.				
Client is not running or not connected.				
If the client program has not been entered yet go ahead and key it in as instructed in the H89LDR README file and then click the SAVE button to create a bootable client disk on the target machine.				
If you already have a bootable client disk then boot it now and click the CLIENT STATUS button when ready.				
Sending H89LDR3.BIN to target machine H89LDR3.BIN sent successfully				
The operation has timed out. Client is ready				
Volume Label: N/A				
Client Status Current track: Clear Log				
RECEIVE ABORT SEND				
Original H89LDR CopyLeft 2004 by Dwight Elvey				

http://sebhc.lesbird.com/software/HDOS/448-412A\_Z37\_Diagnostic\_And\_Conversion\_Utilities.zip

- 9. Download H8D images from Les' Website (<u>http://sebhc.lesbird.com/</u>)
  - a. In this example I want to create a bootable H17 floppy to test the Z37 controller

H	Open	×
	✓ 🖒 Search H8D Images	Q,
Organize 🔻 New folder		9
	^ Name	
CneDrive	448-412A_Z37_Diagnostic_And_Conversion_Utilities.h8d	
<ul> <li>This PC</li> <li>Desktop</li> <li>Documents</li> <li>Downloads</li> <li>Music</li> <li>Pictures</li> <li>Videos</li> <li>OSDisk (C:)</li> </ul>		Vo preview available.
🗔 data (\\stfs) (V-)	v < >	
File name: 448-412A_Z37_Diagnostic_And_Conversion	n_Utilities.h8d H8/H89 Disk Images (*.h8d	l;*.h1 ∨ ncel

10. Select H8D file and click on "Open"

Write image	
Ready to send 448-412A_Z37_Diagnostic_And_Conversion_Utilities.h8d to device SY0?	
Yes No	

11. Select "**Yes**"

🗄 H89LDR HOST 2009 by Les Bird – 🗖 🗙			
Load H89LDR client on the target machine. Set the COM port and connect a serial cable. Click RECEIVE to read a disk from the target machine or SEND to write a disk image to the target machine.			
COM5 V COM Port 19200 baud			
DS 80Trk SY0 V 0 SIDE1 V Read Track Volume override	0		
<pre>Sending H89LDR3.BIN to target machine H89LDR3.BIN sent successfully The operation has timed out. Client is ready Client is ready Drive SYO selected Sending File: 448-412A_Z37_Diagnostic_And_Conversion_Utilities.h8d Disk Volume #0 Sides:1 Tracks:40 Writing track 0 side 1 Writing track 1 side 1 Writing track 2 side 1 Writing track 2 side 1 Writing track 3 side 1 Writing track 4 side 1 Writing track 4 side 1 Writing track 5 side 1 Writing track 6 side 1 Writing track 7 side 1</pre>	✓		
Volume Label: HDOS 2.0 H/Z-37 Evaluation Disk ((C) Heath Co 1981) 890-156			
Client Status Current track: 7/39/1	Clear Log		
RECEIVE ABORT	SEND		
Original H89LDR CopyLeft 2004 by Dwight Elvey	Save LDR		

12. Wait until operation completes

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Load H89LDR client on the target machine. Set the COM port and connect a serial cable. Click RECEIVE to read a disk from the target machine or SEND to write a disk image to the target machine.		
COM5 V COM Port 19200 baud		
DS 80Trk SY0 V 0 SIDE1 V Read Track Volume override	0	
Writing track 29 side 1 Writing track 30 side 1 Writing track 31 side 1 Writing track 32 side 1 Writing track 33 side 1 Writing track 35 side 1 Writing track 36 side 1 Writing track 37 side 1 Writing track 38 side 1 Writing track 39 side 1 File 448-412A_Z37_Diagnostic_And_Conversion_Utilities.h8d sent Disk Volume #0 Done Client is ready		
Volume Label: HDOS 2.0 H/Z-37 Evaluation Disk ((C) Heath Co 1981) 890-156		
Client Status     Current track:     Done       RECEIVE     ABORT	Clear Log SEND	
Original H89LDR CopyLeft 2004 by Dwight Elvey	Save LDR	

- 13. Done! Now let's boot the floppy diskette.
- 14. Reset the H89-SBC computer and boot from the newly created floppy as follows:

H: **B**oot

#### ZENITH DATA SYSTEMS Z37 SUPPORT SYSTEM.

- ENTER THE NUMBER CORRESPONDING TO THE TYPE OF THE PROGRAM YOU WISH TO RUN.
- 1. DISK CONTROLLER CHECKOUT
- 2. GENERAL DRIVE/CONTROLLER DIAGNOSTIC

YOUR CHOICE ->

#### Testing the Boot Loader Floppy Diskette

- 1. Reset the H89-SBC Computer
- 2. Insert the diskette labeled "H8D Loader" into the H17 floppy drive
- 3. Type "H: **B**oot" to read the H17 floppy diskette
- 4. Start the H89LDR Host Utility
  - a. Click on "Create"
  - b. Select correct COM Port
- 5. Click on "Client Status"
  - a. "Client is ready" message is displayed.
  - Insert a new hard sector floppy diskette. Use the "Save LDR" button to create a backup diskette with the H8D boot loader. Write protect floppy diskette and labeled it "H8D Loader".
  - c. Insert a new floppy hard sector diskette
  - d. Now you are ready to download H8D.

H89LDR HOST 2009 by Les Bird	- 🗆 🗙	
Load H89LDR client on the target machine. Set the COM port and connect a serial cable. Click RECEIVE to read a disk from the target machine or SEND to write a disk image to the target machine.		
COM5 V COM Port 19200 baud		
DS 80Trk SY0 V 0 SIDE1 V Read Track Volume override Fro	om image	
Client is ready		
Volume Label: N/A		
Client Status Current track:	Clear Log	
RECEIVE ABORT	SEND	
Original H89LDR CopyLeft 2004 by Dwight Elvey	Save LDR	

Have fun! 😳