

1394b Design Seminar

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GUIDs

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1394 Global Unique ID (GUID)

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Global Unique Identifier (GUID)

- GUID (64-bit)
 - Defined in 1394 Open HCI Spec.
 - Same thing as EUI-64 (Extended Unique Identifier, 64-bit) in 1394 Standard.
 - OUI (24-bit) + Chip ID (hi, 8-bit) + Chip ID (low, 32-bit)
- Company ID ; OUI (Organizationally Unique Identifier)
 - For using in 1394 network applications
 - Like LAN MAC address in Ethernet.
- Search the public OUI list :
 - <http://standards.ieee.org/regauth/oui/index.shtml>
- Ask for a company ID for your organization :
 - <http://standards.ieee.org/faqs/OUI.html#q12>

Why the GUID must be set ?

- 1394 will only work correctly if each device and each OHCI has an unique GUID.
- It's like a phone company. If every customer had the same phone number, nobody would be happy.
- When two products have the same 1394 GUID, they both stop working. The customer will return the products.
- Always use unique GUIDs in all products.

Example #1, GUID : 0800280A12345678

- GUID (Hi)
 - 0800280A
 - Node_Vendor_ID : 08 00 28 (company's OUI number)
 - Chip_ID_Hi : 0A
 - Bytes order in memory (OHCI base address)
 - offset (24h ~ 27h) : 24 25 26 27
 - content (hex) : 0A 28 00 08
- GUID (Low)
 - 12345678
 - Chip_ID_Lo : 12 34 56 78 (serial number)
 - Bytes order in memory (OHCI base address)
 - offset (28h ~ 2Bh) : 28 29 2A 2B
 - content (hex) : 78 56 34 12

Check GUIDs by the Utilities in PC

- OHCIROM (TI)
 - DOS utility for OHCI ROM programming
- WIN ROM (TI)
 - Windows utility for OHCI ROM programming
- SE (AMI)
 - Windows utility
- Windows, XP (MS)
 - Check “ Device Instance ID “ in
 - / Device manager
 - / Network Adapters
 - / 1394 Net Adapter

Check 1394 GUID thru TI ROM Utility

The screenshot shows the WinROM v1.21 utility window on the left, displaying EEPROM data for Bus: 06, Device: 02. A red box highlights the data for address 0B, which is 8E in hexadecimal and 10001110 in binary. Below the table, the binary value 10001110 is shown in a bit-field format: 1 0 0 0 1 1 1 0. The 'Update Byte' and 'Save Data' buttons are visible at the bottom of the EEPROM window.

On the right, the Windows Device Manager shows the 'IEEE 1394 Bus host controllers' and 'Network adapters' sections. The '1394 Net Adapter #3 Properties' window is open, showing the 'Device Instance Id' as V1394\NIC1394\3228E51600. The '1394 Net Adapter #36 Properties' window is also open, showing the 'Device Instance Id' as 394\NIC1394\32A4E51600. Red arrows point from the EEPROM data to the GUIDs in the device properties windows.

GUID
000516000003228E

Serial EEPROM byte address

ADDR	DATA	BINARY
00	42	01000010
01	35	00110101
02	12	00010010
03	24	00100100
04	80	10000000
05	C2	11000010
06	00	00000000
07	00	00000000
08	16	00010110
09	05	00000101
0A	00	00000000
0B	8E	10001110
0C	22	00100010
0D	03	00000011
0E	00	00000000
0F	07	00000111
10	10	00010000
11	10	00010000
12	24	00100100
13	00	00000000
14	00	00000000
15	00	00000000
16	88	10001000
17	FF	11111111
18	FF	11111111
19	FF	11111111
..

Check 1394 GUID thru OHCIROM Utility

- Useful OHCIROM Commands :

- OHCIROM **/V** (dump the EEPROM data for reviewing on the screen)

- OHCIROM **/P** (programs the EEPROM with the designated data file)

- OHCIROM **/L** (log the 64-bit GUID from the EEPROM to the standard output)

>> **000516 00 0003228e**

- OHCIROM **/U /G:0800280a12345678** (updates the GUID with a specific GUID in Hex; /G:xxxxxxxxxxxxxxxxxx).

>> **080028 0a 12345678**

Check 1394 GUID thru SE Utility

System Explorer

System Explorer v1.20

|| Device || TI IEEE 1394

00	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	Refresh	: ON
00	40	10	24	80	16	00	10	02	00	10	00	0C	10	20	00	00	Rev ID	: 00
10	00	50	00	30	00	00	00	30	00	00	00	00	00	00	00	00	Int Line (IRQ):	12
20	00	00	00	00	00	00	00	00	00	00	00	00	86	80	4E	54	Int Pin	: 01
30	00	00	00	00	44	00	00	00	00	00	00	00	12	01	02	04	Latency Timer	: 20
40	00	00	00	00	01	00	02	7E	00	80	00	00	00	00	00	00	Sub.Vendor ID	: 8086
50	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	Subsystem ID	: 544E
60	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	#0:	
70	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	#1:	
80	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	#2:	
90	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	#3:	
00	(10h);	OHCI base address : 30005000															#4:	
00																	#5:	
70	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	ROM	
E0	00	00	00	00	00	00	00	00	00	00	00	00	00	88	00	00	Type: PCI	Bus: 06 Device: 02 Function: 00 <8006
F0	10	00	00	00	86	10	00	00	86	80	4E	54	00	00	00	00	Type value to modify.	

ESC: Menu F1: Help F10: Quit ↑↓↔: Move PgUp/PgDn: Pr

System Explorer

System Explorer v1.20

|| Memory || From: 30005000 To: 300050FF

00	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	Refresh	
00	10	00	01	01	00	00	88	00	FF	0F	00	00	3F	00	00	00		
10	3F	00	00	00	00	00	00	00	6C	90	04	04	34	39	33	31		
20	02	A0	00	F0	0A	28	00	08	78	56	34	12	00	00	00	00		
30	00	00	00	00	00	00	B3	02	00	00	00	00	00	00	00	00		
40	28	00	08	01	00	00	00	00	00	00	00	00	00	00	00	00		
50	00	00	CE	00	00	00	CE	00	00	00	00	00	00	00	00	00		
60	00	00	00	00	00	F8	B2	02	0C	00	03	00	00	00	00	00		
70	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF		
80	00	00	30	00	00	00	00	00	F3	00	83	82	F3	00	83	82		
90	00	00	00	00	00	00	00	00	0F	00	00	00	0F	00	00	00		
00	33	13	00	00	FF	FF	FF	FF	FF	FF	FF	FF	00	00	00	00		
C0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00		
D0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00		
E0	00	02	30	00	00	02	30	00	C0	FF	00	C8	43	05	03	05		
F0	C3	B3	09	A9	00	00	00	00	00	00	00	00	00	00	00	00		

Type: Memory Address: 30005000

Type value to modify.

ESC: Menu F1: Help F10: Quit ↑↓↔: Move PgUp/PgDn: Previous

Check 1394 GUID in Windows XP

The screenshot shows the Windows XP Computer Management console. The left pane displays the tree view with 'Network adapters' expanded, and '1394 Net Adapter #4' highlighted with a red circle. The right pane shows the details for this adapter. A '1394 Net Adapter #4 Properties' dialog box is open, showing the 'Details' tab. The 'Device Instance Id' field contains the GUID 'V1394\NIC1394\12345678800280A'. A red circle highlights this GUID, and a red arrow points from it to the text '12345678 0800280A' written in red at the bottom of the dialog box. The background of the desktop shows two folders named '2.0.0.7' and '2.0.0.8'.

Computer Management

File Action View Window Help

Computer Management (Local)

- System Tools
 - Event Viewer
 - Shared Folders
 - Local Users and Groups
 - Performance Logs and Alerts
 - Device Manager
- Storage
 - Removable Storage
 - Disk Defragmenter
 - Disk Management
 - Services and Applications

WE-D7C2CA1013A6

- Computer
- Disk drives
- Display adapters
- DVD/CD-ROM drives
- IDE ATA/ATAPI controllers
- IEEE 1394 Bus host controllers
 - Texas Instruments OHCI Compliant IEEE 1394 Host Controller
- Keyboards
- Mice and other pointing devices
- Monitors
- Network adapters
 - 1394 Net Adapter #4**
 - Ethernet Controller
- Ports (COM & LPT)
- Processors
- Sound, video and game controllers
- Storage volumes
- System devices
- Universal Serial Bus controllers

1394 Net Adapter #4 Properties

General Driver Details

1394 Net Adapter #4

Device Instance Id

V1394\NIC1394\12345678800280A

12345678 0800280A

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Highest Performance 1394b Available

- TI introduces two new products to its 1394b portfolio
 - **TSB83AA23** – Available Now
 - PCI to 1394b (single chip)
 - 3 Bilingual Ports
 - Easy to route 12x12 package
 - **XIO2213** – Available in 1Q08
 - PCI Express to 1394b (single chip)
 - 3 Bilingual Ports
 - 12x12 and 7x7 packages available
- All TI 1394b products are WHQL Certified and have free access to 1394b drivers from Unibrain.



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