

**DTV Closed Caption Test File**  
**Iteration 1 (608 data/derived 708)**  
**Version 1.2 (1080i)**  
May 2003

This bitstream was created under the auspices of Consumer Electronics Association (CEA) R4.3 Working Group 1 and with the cooperation of WHD-TV and the CPB/WGBH National Center for Accessible Media (NCAM).

It can be used to provide an initial indication of a DTV receiving device's basic ability to decode CEA-608-B and CEA-708-B\*\* captions from an ATSC transport stream. This bitstream has been tested on a number of 608 and 708 decoders and has produced satisfactory results.

This transport stream has been re-encoded to reflect the "zero-based" row and column counting approach clarified in CEA-CEB10-A (708 Implementation Guidance) and re-affirmed by a vote of R4 on May 21, 2002. Previous versions of Iteration 1 should no longer be used as reference.

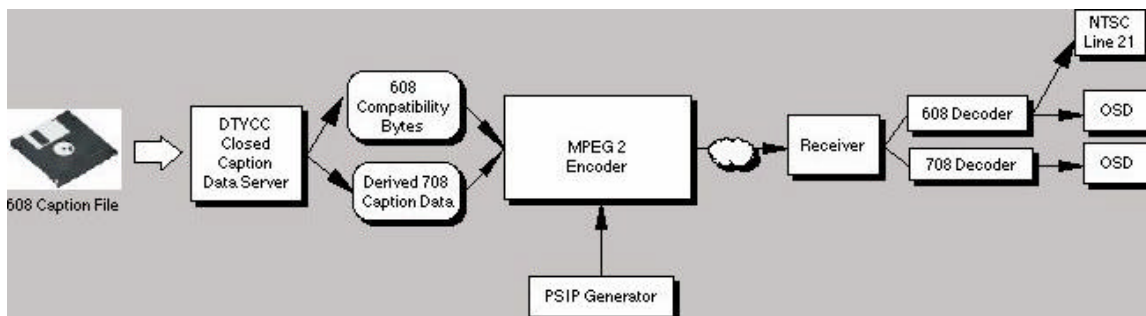
Since this file includes both "embedded 608" and "derived 708" caption data, it can be used in the development of legacy Line 21 (608) caption decoders and newer DTV (708) caption decoders now coming into the market. The new 708 decoders give consumers the ability to adjust the font size, style, color and background of the captions. A 708 decoder reading this file will be provided the basic data to exercise all of the requirements of FCC 00-259.

NOTICE—CEA provides no warranty, express or implied, as to the accuracy of the enclosed closed captioning bitstream data. Users are encouraged to conduct an independent analysis of both FCC closed captioning requirements, and appropriate sections of CEA-608-B and CEA-708-B and ATSC A/53A. This bitstream data is provided as one reference tool, and should not be considered authoritative. It is subject to further substantive revision without prior notice.

Your comments and feedback are needed to help us refine this material, and to develop further test bitstreams to assist in the development of DTV closed captioning. Please forward your comments and questions to: standards@ce.org.

This version was created using a Quantel Paintbox, Panasonic AJ-D580 D5 VTR, Harmonic HD Encoder, Ultech DTV708 Closed Caption Data Server, and a Thales Pearl PSIP generator. (For details, please refer to last page of this document.)

The intent of this bitstream is to determine a receiver's ability to receive, decode and display ATSC caption data encoded per ATSC A/53A and CEA-708-B. The bitstream includes 608 caption data "compatibility bytes" (for downstream NTSC devices), and "derived 708" (upconverted from 608) data for downstream 708 decoders.



Caption data was authored according to CEA -608-B, and includes the related Standard Characters, Special Characters, Preamble Address Codes and Mid-Row Codes (FCC 91-119), Extended Character sets (CEA -608-B, Tables 5 through 10) and pop-on, roll-up and paint-on features commonly used in current practice.

The decoded bitstream includes a working visible time-code reference, and on-screen information related to the caption data being conveyed is supported. Decoded captions display as 608 CC1 and CC3, and 708 Service 1 and Service 2.

\* also referred to here as "CEA-608", "608" and "CEA-708", "708"



## TECHNICAL SPECIFICATIONS

### BITSTREAM PSIP

#### **PMT Info:**

PCR Pid = 33 (0x21)  
 Video PID = 33 (0x21) (1080I)  
 Audio PID = 36 (0x24) (no audio present)  
   bsmod=0 (Complete Main)  
 Audio PID = 41 (0x29) (no audio present)  
   bsmod=2 (Visually Impaired, full-service)

#### **EIT Info:**

Version=9, Section=0, Source ID=2  
 PID: 7424  
 Event ID=228

ETM Title Text:"NCAM DTVCC Test"

Caption Service Descriptors present in both the PMT and EITs:

Number of services: 4

1. Eng, cc\_type=0, line21\_field=0
2. Spa, cc\_type=0, line21\_field=1
3. Eng, cc\_type=1, caption\_service\_number=1
4. Spa, cc\_type=1, caption\_service\_number=2

The following content is present as:

- 1.) 608 data in Line 21, CC1
- 2.) DTVCC data in Service 1

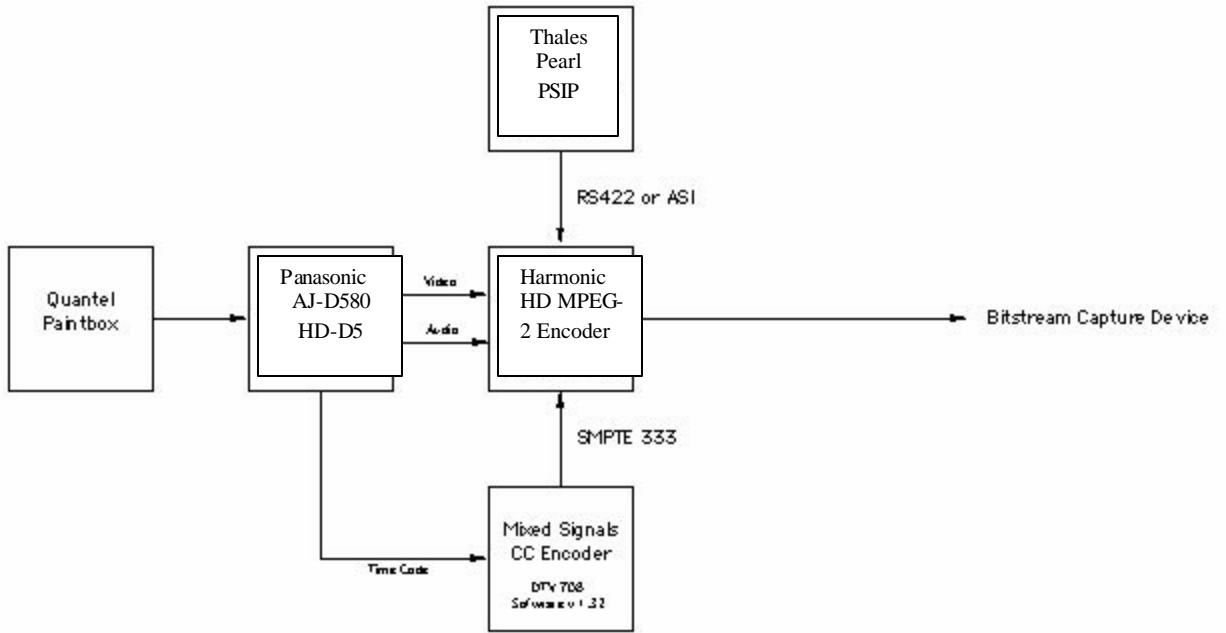
### CONTENT

Display Time	Content
01:00:02:02	Title
01:00:11:00	FCC 91-119 Table of Standard Characters (1)
01:00:21:00	FCC 91-119 Table of Standard Characters (2)
01:00:31:00	FCC 91-119 Table of Standard Characters (3)
01:00:41:00	FCC 91-119 Table of Special Characters
01:00:51:00	CEA-608-B Table 5, Extended Character Set - Spanish
01:01:01:00	CEA-608-B Table 6, Extended Character Set - Misc.
01:01:11:00	CEA-608-B Table 7, Extended Character Set - French

01:01:21:00	CEA-608-B Table 8, Extended Character Set - Portuguese
01:01:31:00	CEA-608-B Table 9, Extended Character Set - German
01:01:41:00	CEA-608-B Table 10, Extended Character Set - Danish
01:01:50:00	FCC 91-119 Preamble Address Codes (Color)
01:02:02:00	FCC 91-119 Preamble Address Codes (Underline)
01:02:11:00	FCC 91-119 Preamble Address Codes (Indent)
01:02:30:00	FCC 91-119 Mid-Row Codes
01:02:55:00	Roll-Up Captions: 3-Row 3-Row w/Continuation 4-Row 4-Row w/Indents 4-Row w/PAC codes 3-Row w/Mid-Row codes 2-Row w/Special Chars 2-Row w/Upper Case Chars 3-Row, Base Row 4 2-Row, Base Row 2 4-Row, Base Row 12 2-Row, Base Row 14 4-Row, Moved w/o Erase Decreased Depth Paint-On Captions Paint-On w/Mid-Row codes. Pop-On, changed by Paint-On, followed by Pop-On. 2-row Roll-Up , followed by Paint-On. Roll-Up erasing Paint-On.
01:03:56:02	End of Test (caption)
01:04:15:02	

Note: The last caption does not include a clearing pulse. This can be used to check a decoder's ability to clear "hanging captions", per CEA-608-B spec.

**DTV Closed Caption Test File  
Iteration 1 (608 data/derived 708)  
Version 1.2 (1080i)**



DTV Station Project Inc. 4001 Nebraska Avenue N.W., Washington, DC 20016 Tel (202) 333-4900   Fax (202) 333-3193				
R4.3 WG1 DTVCC				
REV	DATE	PROJ.	DEPT.	BY
A	NONE	120800-00001-01	KNECHTEL	A

© 2004 KNECHTEL. ALL RIGHTS RESERVED. THIS DOCUMENT IS UNCLASSIFIED AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM.