

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY <i>(Leave blank)</i>	2. REPORT DATE November 2000	3. REPORT TYPE AND DATES COVERED	
4. TITLE AND SUBTITLE IRIG J ASYNCHRONOUS ASCII TIME CODE FORMATS		5. FUNDING NUMBERS	
6. AUTHOR(S)		8. PERFORMING ORGANIZATION REPORT NUMBER Standard 212-00	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Telecommunications and Timing Group Range Commanders Council White Sands Missile Range, NM 88002-5110		10. SPONSORING / MONITORING AGENCY REPORT NUMBER same as block 8	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) Range Commanders Council CSTE-DTC-WS-RCC White Sands Missile Range, NM 88002-5110		11. SUPPLEMENTARY NOTES Supersedes IRIG Standard 212-94, AD-A277244. Also available on the RCC webpage: http://jcs.mil/RCC	
12a. DISTRIBUTION / AVAILABILITY STATEMENT DISTRIBUTION A: APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED		12b. DISTRIBUTION CODE	
13. ABSTRACT <i>(Maximum 200 words)</i> This standard describes a family of American Standard Code for Information Exchange (ASCII) time formats to be used to transfer time over conventional asynchronous telecommunications circuits.			
14. SUBJECT TERMS timing, IRIG-J, asynchronous time code formats		15. NUMBER OF PAGES 7	
		16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT UNCLAS	18. SECURITY CLASSIFICATION OF THIS PAGE UNCLAS	19. SECURITY CLASSIFICATION OF ABSTRACT UNCLAS	20. LIMITATION OF ABSTRACT NONE



IRIG STANDARD 212-00

TELECOMMUNICATIONS
AND TIMING GROUP

**IRIG J
ASYNCHRONOUS ASCII
TIME CODE FORMATS**

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KWAJALEIN MISSILE RANGE
YUMA PROVING GROUND
DUGWAY PROVING GROUND
ABERDEEN TEST CENTER
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IRIG STANDARD 212-00

**IRIG J
ASYNCHRONOUS ASCII
TIME FORMATS**

NOVEMBER 2000

Prepared by

**TELECOMMUNICATIONS AND TIMING GROUP
RANGE COMMANDERS COUNCIL**

Published by

**Secretariat
Range Commanders Council
U.S. Army White Sands Missile Range
New Mexico 88002-5110**

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1.0 General Description of Standard

This standard describes a family of American Standard Code for Information Interchange (ASCII) time formats to be used to transfer time over conventional asynchronous telecommunications circuits. These formats are intended to provide time transfer information suitable for most computer, dumb terminal, line printer, and visual-display purposes. Precise time transfer is not an objective of this standard; therefore, there is no attempt to provide greater than 100-millisecond or 1-second resolution for these formats. This standard is intended to provide systems engineers and equipment vendors with an IRIG standard for ASCII-formatted time transfer, which can be used in specifications for the procurement of equipment used on all United States test ranges.

2.0 General Description of Formats

An overview of the formats is described in the following paragraphs (see figure 1).

2.1 IRIG J-1x

The IRIG J-1x is intended for ASCII time transfers at baud rates greater than or equal to 300. It is a Time-of-Year format with 1-second resolution and frame length. The accuracy of this format at the receiver end is primarily dependent on the characteristics (fixed and variable transmission delays) of the communications circuits between the transmitting and receiving equipment. The ASCII expression for this format is

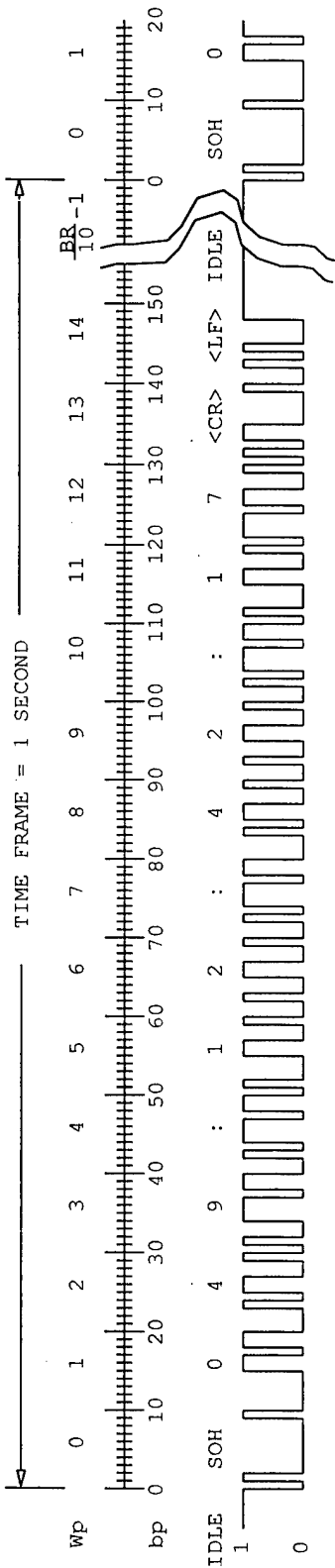
<SOH>DDD:HH:MM:SS<CR><LF>

where

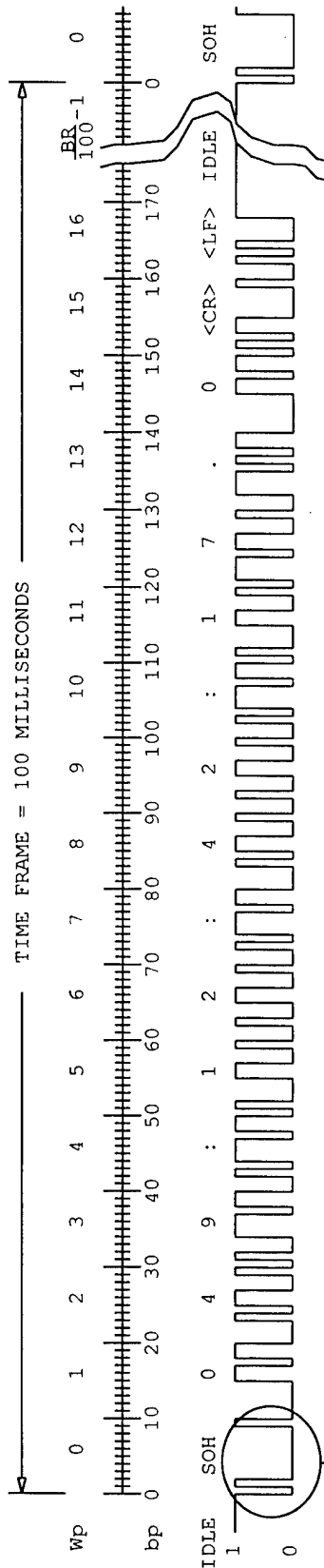
<SOH> = start of header (01₁₆)
DDD = the day of the year
: = colon (3A₁₆)
HH = hour of the day
MM = minute of the hour
SS = second of the minute
<CR> = carriage return (0D₁₆)
<LF> = line feed (0A₁₆)

The IRIG J-1x uses the first 150 bits of the 1-second frame. The remaining bits are idle (binary state = 1) for the remainder of the frame. Its frame length is 1 second, regardless of the baud rate.

① IRIG J-1x = 049:12:42:17
 BAUD RATE (BR) ≥ 300

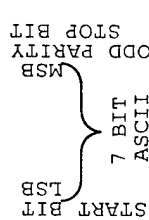


② IRIG J-2x = 049:12:42:17.0
 BAUD RATE (BR) ≥ 2400



ON-TIME REFERENCE START BIT FOR NEXT WORD

DETAIL A
 (WORD 0)



wp = WORD POSITION
 bp = BIT POSITION

BINARY STATE	
1	0
MARK	SPACE
STOP	START
IDLE	N/A

DETAIL A

Figure 1. ASCII time formats IRIG J-1x and IRIG J-2x.

2.2 IRIG J-2x

The IRIG J-2x is intended for ASCII time transfers at baud rates greater than or equal to 2400. It is a Time-of-Year format with 100-milliseconds resolution and frame length. The accuracy of this format at the receiver end is primarily dependent on the characteristics (fixed and variable transmission delays) of the communications circuits between the transmitting and receiving equipment. The ASCII expression for this format is

<SOH>DDD:HH:MM:SS.S<CR><LF>

where

<SOH> = start of header (01_{16})
DDD = the day of the year
: = colon ($3A_{16}$)
HH = hour of the day
MM = minute of the hour
SS.S = second and tenth of second of the minute
<CR> = carriage return ($0D_{16}$)
<LF> = line feed ($0A_{16}$)

The IRIG J-2x uses the first 170 bits of the 100-milliseconds frame. The remaining bits are idle (binary state = 1) for the remainder of the frame. Its frame length is 100 milliseconds, regardless of the baud rate.

2.3 Word Description

Each ASCII word (character position) contains exactly 10 bits ($b_0 - b_9$).

b_0 = start bit
 $b_1 - b_7$ = 7 bit sequence for ASCII character
 b_8 = parity bit
 b_9 = stop bit

2.4 Parity

This standard employs ODD parity only.

2.5 Baud Rates

The IRIG J-1x is primarily intended for baud rates of 300, 600, and 1200. It also can be used for baud rates of 2400 and above. The IRIG J-2x is intended for baud rates of 2400, 4800, 9600, 19200, and 38400.

2.6 IRIG J Format Designation Description

The IRIG J format and baud rates can be uniquely described by specifying y and x in IRIG J-yx,

where

y = 1 for formats described in paragraph 2.1

= 2 for formats described in paragraph 2.2

x = 2 for 300 baud rate

= 3 for 600 baud rate

= 4 for 1200 baud rate

= 5 for 2400 baud rate

= 6 for 4800 baud rate

= 7 for 9600 baud rate

= 8 for 19,200 baud rate

= 9 for 38,400 baud rate

Example: The IRIG J-26 describes the ASCII format with 100 millisecond resolution and frame length and transmitted at 4800 baud.

Standard formats are IRIG J-12, IRIG J-13, IRIG J-14, IRIG J-15, IRIG J-16, IRIG J-17, IRIG J-18, IRIG J-25, IRIG J-26, IRIG J-27, IRIG J-28, and IRIG J-29.