

This paper introduces the IRIG-B time code format. In particular the physical layer, word definitions and some format types are discussed.

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2.1 Overview

Many different time formats have evolved to provide for correlation of multiple devices (sources of data usually) and multiple recordings.

In October 1956, the Tele-Communications Working Group (TCWG) of the Inter-Range Instrumentation Group (IRIG) undertook the task of standardization of time code formats. In 1960, IRIG-104-60 was released. The current release is IRIG-104-98.

The IRIG time codes are continuously transmitted in well-defined cycles. At one part of the cycle, a reference marker indicates the time being transmitted. IRIG time codes are referenced by a four-digit number (see the following figure). This paper focuses on IRIG-B, although other code formats are also discussed.

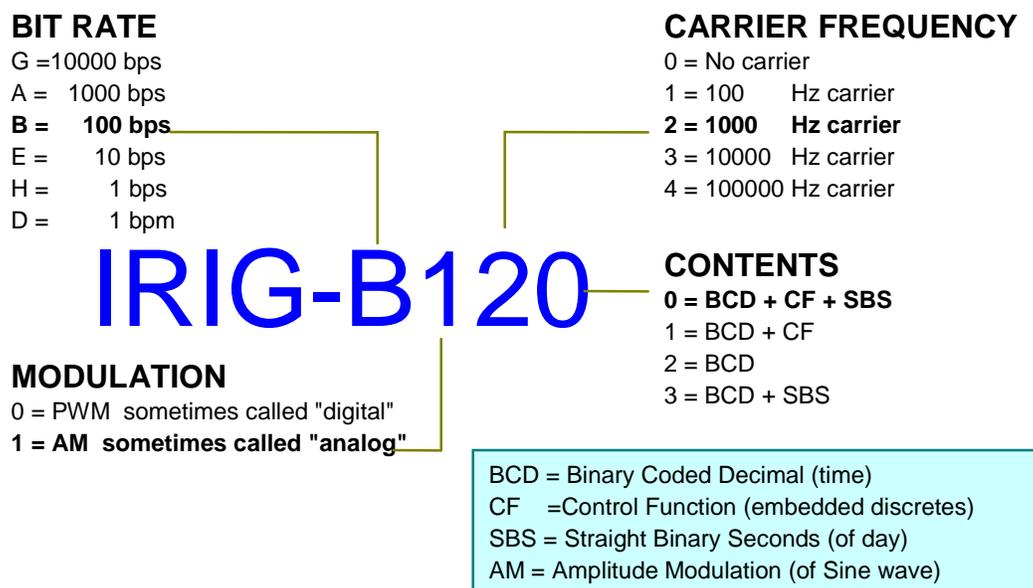


Figure 2-1: IRIG-104-70 / IRIG-200-70 time code formats

For IRIG-104-70, four formats were standardized with respect to format B (B000, B003, B120 and B123); others were added in IRIG-104-98.

2.2 The physical layer

Because the IRIG time code formats evolved from many formats already in place and because the time can be transmitted in many ways (or stored on tape), the physical layer does not form part of the definition.

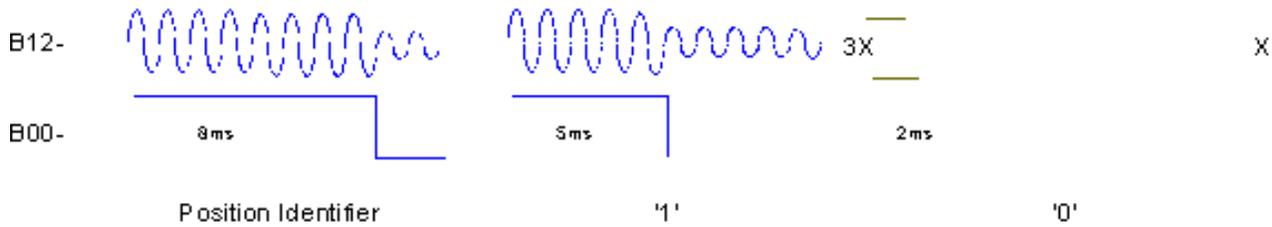


Figure 2-2: The three type of bits used in IRIG-B

In general one IRIG-B transmitter (generator) transmits a single-ended signal (with respect to the transmitters reference ground) that can be connected to many receivers (readers or translators*). The receivers are generally differential-ended if the distances involved are more than a few meters.

*A translator is often referred to as a reader (receiver) that displays or retransmits the time (perhaps in another code format).

2.3 Defining a frame

The following figure shows an IRIG-B frame.

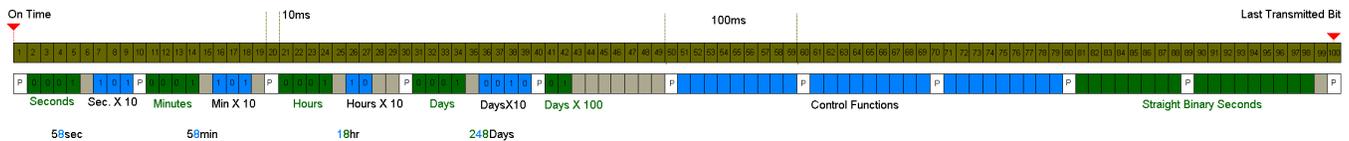


Figure 2-3: One-second frame of IRIG-B time code format

A frame is 1 second long. Least Significant Bits (LSBs) are transmitted first. The midpoint between two consecutive Position Identifiers indicates the start of a frame and the point of time referenced in the frame.

2.4 Conclusion

In this paper some of the nomenclature associated with IRIG-B was introduced. The different types of IRIG-B format were also discussed.

2.5 References

Datum Handbook of Time Code Formats, Datum Inc., 9975 Toledo Way, Irvine, California 92630-1819, USA

IRIG STANDARD 200-95, IRIG Serial Time Code Formats, Telecommunications and Timing Group, Range Commanders Council, Published by: Secretariat, Range Commanders Council, U.S. Army White Sands Missile Range, New Mexico 88002-5110