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J-card: The printed card inserted into a cassette tape box, so named because it resembles a “J” when viewed from its end.

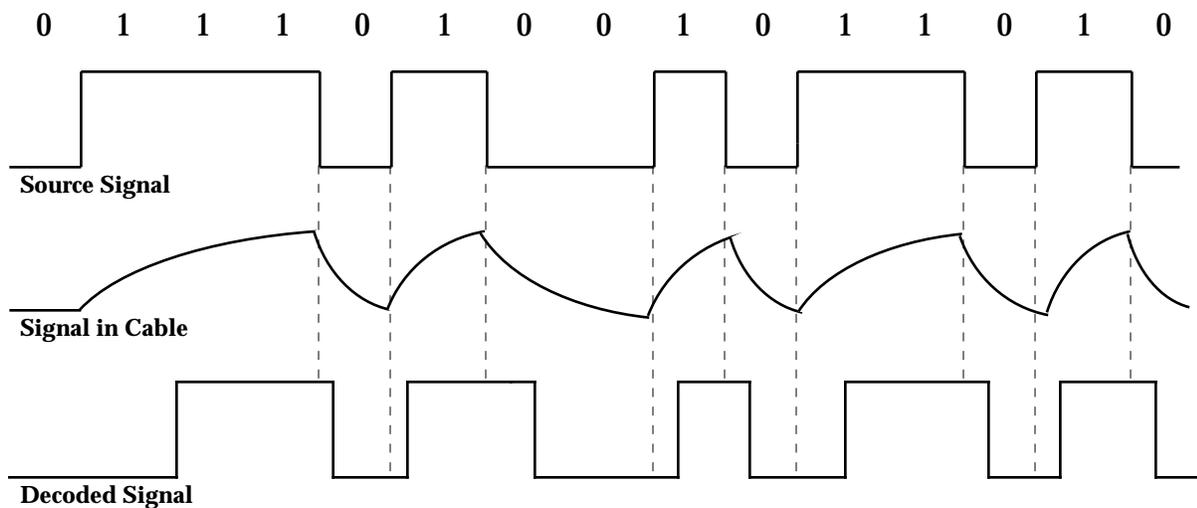
jack: A female connector, frequently mounted on the chassis of an audio device, which serves as a receptacle for the male connector, called a *plug*, on the end of an audio cable.

jam sync: A family of techniques in which a *synchronization* device reads *timecode* and regenerates new timecode that may not have the same address as the original timecode. Usually, the transferring of a timecode and *user bits* from an external reference source to a *SMPTE timecode generator*, either once, called *one-time jam sync*, which will align two codes at one *frame only*, allowing each to proceed at its own internal rate from that moment forward, or continuously, which will force the generator to mimic the timecode numbers of the reference source continuously. Timecode is read up to the last good address, then the generator uses the next consecutive address to generate a new timecode, called *Jam Timecode*, or *JTC*. The process of regenerating SMPTE timecode to a previous reference: the source timecode goes to the timecode synchronizer which reads it and regenerates a new copy. If there is a *dropout* in the timecode, the synchronizer will *freewheel*, continuing to create timecode to cover the dropout. Used to recover from dropouts or non-continuous timecode caused by editing.

Jecklin Disc: Also called a *Henry*. A disc usually made of plywood, typically 10”-12” in diameter. There is a mounting for the microphone on one edge, and the disc is covered in an absorbent material. The concept is that the microphone spacing matches that of human ears and the disc provides the sound-shadowing effects of the head, so the ensemble should be able to capture sounds in the microphones which will most closely match what a person would hear, effectively transporting the listener to the recording venue. Results are variable. See also *ambisonic*.

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jitter: (1) The lack of precision in digital sampling times, leading to *amplitude errors* in signals with rapidly changing amplitudes, resulting in distortion of the sampled signal which rises with frequency. The starting time of the sampling aperture is the non-zero time that it takes for the *sample-and-hold* circuitry to determine the level of the signal waveform and to hold this level until the next sample is called for. Because the time required to establish a new value of charge depends on the amount of change in the signal level from one sample to the next, the aperture time will vary with the rate of change in the signal level, increasing for high-level, high-frequency signals. The starting time of the sampling aperture is also slightly uncertain, and this is called jitter. Also called *sampling offset uncertainty*. See *aperture time errors*. (2) Timing errors introduced into channel-coded interfaces such as AES/EBU and S/PDIF where the word clock is embedded within the data stream. Cable capacitance reduces HF signal, resulting in rounded corners and sloping edges, as opposed to a sharply divided on/off pulse wave. As the word clock timing is defined by the midpoint of the pulse wave, any strictly nonvertical slope creates timing uncertainty and, therefore, jitter.



Jitter Caused by Cable Impedence

Johnson noise: See *noise floor*. Johnson noise is the broadband *white noise* power associated with electrical *resistance* at temperatures above absolute zero. The Johnson noise level is the limiting minimum noise any circuit can attain. Also called *thermal noise*.

joint: In tape editing, the point of connection between two pieces of tape spliced together.

Joule's Law: A formula for converting *watts* into *amperes*:

$$P = V \times I, \text{ or alternately, } I = P / V.$$

JPEG: Joint Picture Expert Group. A body that defined a standard for data compression originally for still images. This has been extended to M-JPEG for use in random-access (non-linear) editing systems. Lossy, but generally acceptable. See *MPEG*.

JTC: See *jam sync*.

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just intonation: A family of tuning systems that can have fewer than twelve tones per *octave* or many more than twelve. Just intonation is based on any pure, natural *scale* determined by the frequencies of the *harmonic series* of the *tonic*, not one that is artificially fixed by keyboard instruments. Purely tuned just intervals are almost never used in music because of their incompatibility with the octave. Scales in just intonation are never *equal tempered*, and vice-versa. See *syntonic comma*, *diatonic comma*, and *temperament*.

just noticeable difference: A *psychoacoustic* term which refers to the smallest timing difference the human aural system is capable of detecting between two sound sources, approximately 6 μ s. This is just an artifact of human hearing and is not related to the *Haas effect*.

