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Fax Machines: CCITT Group 2 and Group 3 Explained (9/94)

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TOPIC -----

This article describes CCITT Group 2 and Group 3.

DISCUSSION -----

International Telephone and Telegraph Consultative Committee (CCITT) uses "Group" to designate the protocols used for facsimile transmission and reception. The "Group" protocol involves speed of transmission, height of a scan line, modulation/demodulation technique, encoding/decoding technique (if any), and various other parameters concerning communication between two Fax machines.

The primary difference between Group 2 and Group 3 concerns encoding/decoding.

Group 2 machines exploit bandwidth compression techniques to achieve reduced transmission times, when compared to Group 1 machines (Group 1 machines have long since disappeared). Bandwidth compression in this context includes encoding and/or vestigial sideband working but excludes processing of the document signal to reduce redundancy.

The encoding/decoding involved in transmission uses the positive/negative cycles of the square wave carrier to denote white/black pixels.

Group 3 machines incorporate a means for reducing the redundant information in the document signal prior to the modulation process. This allows for reduced transmission times compared to Group 2 machines. The Fax machine may incorporate bandwidth compression of the line signal.

The encoding/decoding technique used with Group 3 machines sends an encoded message when encountering lengths of white/black pixels (redundant information). This encoded message indicates the number of white or black pixels.

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