Tech Info Library

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

```
Revised:        9/7/94
Security:       Everyone
```

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

==

Article Created: 20 January 1989
Article Reviewed/Updated: 7 September 1994

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.

Article Change History:

07 Sep 1994 - Reviewed for technical accuracy.

Support Information Services

Tech Info Library Article Number:3543