



IS GROUP 4 FAX DEAD

You Be The Judge.

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Group 4 facsimile, the "newest" ITU standard for high-speed, high-quality, error-free digital communication (approved in 1984), has failed to live up to expectations. The G4 market was predicted to exceed \$600 million dollars annually by the middle of the decade. 1994 U.S. sales of G4 fax, however, are far below earlier projections (How far, no one is saying!) However, one reliable source indicated that only 350 G4 units were manufactured last year - worldwide and that out of the 45 million G3 1994 installed base (U.S.) only 20,000 are G4-equipped. This begs the question, "Is G4 dead?" Both industry analysts and manufacturers of G3 equipment say, "Yes."

G4 Critics vs. G4 Advocates

On the one side of the house you have the critics who claim that G4 is "going nowhere." On the other side are the G4 advocates – the manufacturers of the products and their loyal customers, both of which strongly defend the technology. But it's the stories users tell of having successfully implemented measures to cut labor and communication costs that make you stop and ask yourself, "Are we missing the boat?" Businesses, both large and small, have used G4 fax equipment for years. All have taken fax communication to the next level. Perhaps the installation process was challenging, requiring specialized support, but what they ultimately achieved in terms of fax economy, quality and speed far outweighed the initial growing pains.

Digital Service Options - Here and Now

The G4 users you'll be reading about use either ISDN (Integrated Services Digital Network) or Switched 56 (SW56) service to carry a heavy volume of fax traffic. [G4 data can also run over PSDN (Packet Switch Digital Networks) or piggyback for free on existing T-1 lines (referred to as leased, point-to-point, or dedicated).]

ISDN and Switch Digital Services

The two most commonly used digital services for G4 fax are ISDN and SW56. Of the two, ISDN is far more economical and faster. Jeff Smith, AT&T WorldWorks territory manager, says ISDN (BRI) is "considerably more cost effective than local switched access (SW56). You get two 64Kbps channels versus one 56Kbps channel." Typically ISDN is purchased in the BRI - Basic Rate Interface - package. This service offers 2 Bearer (B) channels running at 64Kbps plus one Delta (D) channel operating at 16Kbps. The fax data is carried over the 64Kbps channels while all signally (handshake, retraining) is performed on a separate D channel at 16Kbps. (Two G4 faxes can be connected, one on each B channel.) This efficient 2B+D structure accounts for the lightning fast transmit speed.

Why Go Digital?

The primary reason to choose digital over analog transmission is obviously speed. According to *LAN Magazine* (Jan. 1994), "An ISDN connection, in the real world, runs four to eight times faster than an analog modem line.). Currently the maximum G3 speed over the analog PSTN (Public Switched Telephone Network) is 19.2Kbps depending upon the service and the data compression method being used. As far as the future, we'll see digital G3 running at 64Kbps. The ITU approved a "G3/64" standard in 1993 but product has yet to make it to market. Perhaps this is due, in part, to issues of backward-compatibility with the existing installed base of G3 equipment.

Learning More About ISDN

ISDN is the service of choice with its ability to combine voice, video and data on the same line. This is not true for SW56, which carries only data. The best news of all is that ISDN is more

widely available than ever with most areas wired for central office compatibility with ISDN. [To learn more about ISDN deployment in your area, call Bellcore at 800-521-2673 and order the book *ISDN Deployment Data*. (reference number SR-2102, cost \$120). If you're in the Bell Atlantic service area, call 800-570-ISND. They will send you a free 5.25" or 3.5" diskette entitled *ISDN Availability - Sales Assistance Program*.] Also, call your local and long distance carrier for tariff phone rates (Figure 1 is a sample of Bell Atlantic ISDN estimated pricing for New Jersey.) Exact costs, however will vary by region, customer, time of day, volume of usage, required DCE (data communication equipment, i.e., NT1, DSU), etc., etc. [AT&T filed tariff changes with the FCC (March 2, 1995) which "will result in an overall decrease of 11% in the prices of international switched digital services...subject to FCC approval." Domestic switched service has been restructured as well to reflect an "overall decrease of 38%" with deep discounts offered during 'evening' and 'night' period.]

The G4 Selling Cycle is Shortening

The information you need to market G4 fax systems is there for the asking. Will your newfound knowledge result in immediate sales? Probably not. Bill Foster, regional account manager for NEC, estimates a "six to 12-month selling cycle" for G4 products a year ago. So dealers operating on 30- to 60-day cycles didn't experience the product turnover and associated revenues they needed. Foster is quick to add that, "Fax usage has grown to such a level that high-volume customers are actively seeking alternatives to slow, error-prone analog technology. So the selling cycle is shortening due to a greater awareness and understanding of ISDN applications. Though the high cost of competing in the G4 fax market has contributed to lackluster performance, a dealer who makes an investment in training, product and personnel (both sales and technical) will enjoy sizable returns.

G4 is an Application Sale

Certainly, G4 products carry a hefty price tag but equally hefty margins with added revenue from after-market supply and service revenue. A top priority must be placed on supporting the G4 customer. As NEC's Foster says, "It all comes down to support."

G4 isn't a "box" sale, it's an application sale, a cost-justification sale, a sale that requires a combination of skill and perseverance. But not to worry. If the topic of high-end fax sales and the associated intricacies of telecommunications makes your eyes glaze over, rely on the G4 manufacturer. The players in this market are Canon, NEC and Ricoh (see Chart #1). They employ trained specialists, called "sales engineers," to support your G4 sales efforts.

Focus on Applications

Don't be intimidated by the technical jargon. Instead, focus on performance requirements like throughput and quality. Ask the right question, analyze their fax traffic (by reviewing current activity Reports), and you'll be on your way to solving their communications problems - be they bottlenecks, people waiting at the fax, line failures, etc. Most importantly, act as a consultant and pinpointing where cost efficiencies can be gained.

Who's a Candidate for G4?

As a general rule, if your customer's application needs fit into one or more of the following categories, you've got an excellent prospect for G4 fax:

- ***Heavy inter-company transmit and receive volume*** - What constitutes a heavy volume depends upon the individual customer. The **G4 user profiled on page** transmits and receives approximately 2,500 pages per day domestically and internationally. Others say if you send as few as 30 pages a day to two or more companies, G4 is a cost-effective solution.
- ***Time-sensitive*** - G4 users typically communicate documents that require immediate action. In one instance, a 120-page document that took over an hour to transmit via G3 took only 10 minutes via G4. Not only does the information arrive quickly, the cost savings were "astronomical." G4 fax has also been proven effective when used in conjunction with videoconferencing equipment. While a meeting is taking place, supporting documentation is

exchanged between the sites over ISDN lines, i.e., there is simultaneous transmission of voice, video and data.

- **Superior image quality** - G4 offers outstanding copy quality at 400-by-400dpi resolution using primarily laser print technology. The 64-level halftones also adds clarity and depth to photographs, which truly rival the original in quality. Law enforcement agencies use G4 fax to send and receive fingerprint cards and mugshots. G3 fax simply couldn't provide the level of detail, document integrity or speed required.
- **Fast throughput** - The end-to-end G4 fax transmission is, on average, five times faster than G3. Most G4 faxes are rated at 3 seconds per page. Real world is more like five to six seconds. That's still a big bonus when compared with G3 at 20 to 30 seconds per page. Worksheets for calculating the savings are often available in product sales training materials or through the manufacturer.
- **Reliability** - With error-free, digital communication you do not encounter the problems inherent with analog G3 signals. In the digital system there are "regenerative repeater" along the link which detect/correct errors and regenerate the signal.
- **Security** - Digital signals, unlike analog sine waves traveling along the public phone network, cannot be intercepted by "industrial spies" without detection. For the highest level of security, encryption devices are available which connect to both send and receive units. Sophisticated algorithms encode and decode data to ensure that the message is received by the intended party. (The U.S. Government uses National Security Agency-approved encryption devices to thwart "electronic eavesdropping" on both G3 and G4 equipment.
- **Compatibility with existing G3 users** - G4 protocol is automatically converted to G3 or even G2 protocol, providing users with efficient communications to and from their data networks. Nonetheless, some users choose to place a dedicated receive-only G3 unit next to their G4 system. Others will use that second G3 fax for sending small documents, i.e., 5 pages or less.

Conclusion

Both ISDN and G4 fax have one thing in common - they just won't die. And though some people still believe that ISDN stands for: "I Still Don't Need," there are others who see a bright future for ISDN. "The communication infrastructure is finally in place, making G4 fax more affordable than ever," says Pat D'Innocenzo, Bell Atlantic's product line manager. Clearly, ISDN and G4 fax, working hand-in-hand, can "deliver a level of performance unmatched by competing technologies."

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See User Profile, next page...

User Profile, G4 Fax – Domestic & International Communication

For the skeptics out there who still don't see a future for G4 fax, perhaps the following success story will open your eyes to a world of opportunity.

Company: Merrill Corp.

Industry: Financial printing/information management

Corporate Office: St. Paul, MN

Branches: 25 U.S. locations

Affiliates: Tokyo, Hong Kong, London

G4 Units: Canon L6500, NEC Nefax 880s and Ricoh FAX7000Ls

Service: ISDN (BRI) and Switched 56*

Application: Transmit and receive high-density text and graphics (annual reports, financial statements, etc.)

Network Volume: Send and receive approximately 2,500 pages a day

Background: Merrill Corp. began operation as a financial and corporate printing firm, a business that has evolved into a global information management conglomerate. Its international G4 fax network hub is located in St. Paul, MN. Kurt Marholz, network services management, says that they rely heavily on facsimile technology and adds, "Our fax volume is so high we looked for a better and more economical way (to communicate). G4 technology gives us two huge paybacks – copy quality and reduced transmission time. The technology is cost justified." The thousands of pages Merrill and its partner affiliates transmit and receive on a daily basis are "fairly large and time sensitive." Time cannot be wasted attempting to proofread low-resolution copy or calling the sender for clarification. G4's high 400-by-400-dpi resolution solved that problem. Merrill also performed exhaustive timing tests and found that the connect time was "greatly reduced." As far as costs, Marholz says, "ISDN service is not much more (per month) than the cost of an average business line." Usage may be a few cents more, a cost that's insignificant when compared to the speed of transmission and high quality output that he refers to as "truly error-free."

*ISDN and Switched 45 are interoperable.

