

Service Information



V.42bis and V.44 Compression on Fleet F33 Circuit-Mode Data

Data compression on the Fleet F33 9.6kbit/s circuit-mode data service enables the user to increase effective modem throughput by up to seven times. By using automated compression algorithms embedded in the communications equipment, the mobile software is able to automatically and transparently perform the compression and decompression of data independent of the user.

Fleet F33 optionally supports the two main compression protocols: V.42bis and V.44. Selection of the most efficient protocol available is automatic and seamless.

- V.42bis typically achieves three times the data rate of a standard connection and is capable of transfer rates of up to 34 kbit/s.
- V.44 is capable of achieving approximately four times the data rate of a standard connection and is typically 20% more effective than V.42bis. It is very effective on HTML files.

Benefits of Compression

- Fleet F33 compression is transparent to the user and is automatically negotiated between the Fleet F33 terminal and the terrestrial modem. No modification is needed to existing equipment and no user configuration is required.
- When using V.44 compression on an uncompressed file it is possible to reduce the size of the file to 15% of the original. However, reductions of 25-35% are typical, giving an effective throughput of 30-40kbit/s in comparison with an uncompressed 9.6kbit/s connection.
- Compression ratios are dependent on both the file type and content. Most computer-generated information contains redundant data that can be compressed into smaller packets without loss of information (lossless compression). Lossless compression is especially useful for text based data, spreadsheets, documents and databases. Files that are already compressed, such as JPEG, ZIP and GIF, show little or no improvement with further compression.

N.B. The 9.6K dialup service with compression is ideal for larger data downloads and batch transmissions. From March 2004, MPDS is also optionally available on Fleet F33. MPDS is ideal for the key maritime applications:

- Short E-mails, online E-mail sessions
- Online Transactional updates/Database queries
- Text messaging
- Ship-management applications
- Weather Chart updates/Web links

Summary

Fleet F33's new V.44 and V.42bis capability offers an automated and seamless solution for decreasing the cost of ship-to-shore and shore-to-ship data transfers. Users do not need to use additional proprietary compression software, as automated compression is now part of the transmission process.



Implementation

New Fleet F33 terminals are optionally supplied with data compression installed and enabled as default*. The default is 'best match' mode selection.

Legacy Fleet F33 terminals that support 9.6kbit/s data connections require a software upgrade to enable V.44 and V.42bis data compression. This upgrade is available from the mobile terminal provider and can be downloaded online. The user should verify that both their airtime provider, terminal manufacturer and the receiving modem support these compression standards. Most modern terrestrial modems now support high-level data compression.

** At time of publication (May 2004), the service is supported by the Nera Fleet F33 only.*

Operation

When a user wishes to send or receive data, their Mobile Earth Station (MES) transmits a signal, via satellite, to their Land Earth Station (LES). The MES and LES then negotiate the most effective mutually supported compression protocol. The LES then signals the receiving terrestrial modem and negotiates the compression rate at which the terrestrial modem can communicate with the MES. The best available compression rate is then set as the standard for the transmission between the MES and the terrestrial modem. If neither the MES nor the terrestrial modem supports compression protocols the transmission reverts to an uncompressed 9.6 kbit/s.

No further negotiations are required, as both the sending and receiving modems automatically compress and decompress data to the negotiated standard.

Although the compression protocol is automatically pre selected by the Fleet F33 Terminal, the user has the option to manually select the compression rate they wish to use.

- No compression
- V.44
- V.42bis

Manual selection allows the user to match their compression to the known compression standard of the recipient. It should be noted that if a particular compression standard is selected and this does not match the compression standard at the receiving end, no compression will be achieved as negotiation has been negated.

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