

Federal Telecommunications Recommendation 1024B-1998

27 July 1998

PROJECT 25 RADIO EQUIPMENT

(This Recommendation supersedes FTR 1024A-1997, dated April 16, 1997)

Federal Telecommunications Recommendations (FTR) are issued by the Technology and Standards Division, National Communications System (NCS), after approval by the Federal Telecommunications Standards Committee and the Deputy Manager, NCS, pursuant to Executive Order 12472,¹ NCS Directive 4-1,² and Public Law 104-113.³

1. **Name of Recommendation.** Project 25 Radio Equipment.
2. **Category.** Land Mobile Radio.
3. **Explanation.** This recommendation, by adoption of 30 Telecommunications Industry Association (TIA) documents and 2 National Security Agency (NSA) specifications, defines numerous details of Project 25 Land Mobile Radio (LMR) equipment. Data Encryption Standard (DES) (Federal Information Processing Standards (FIPS) Publication 46-2) (Type 3) encryption is intended for the protection of unclassified information. Type 1 encryption is intended for the protection of U.S. Government classified information.
4. **Approving Authority.** Deputy Manager, National Communications System.
5. **Maintenance Agency.** Technology and Standards Division, National Communications System.
6. **Related Documents.**

a. Telecommunications Industry Association/Electronic Industries Association (TIA/EIA) TSB-102.BABD, APCO Project 25 Vocoder Selection Process.

b. CD-ROM, Project 25, The TIA-Published 102-Series Documents. This CD contains the 30 published TIA documents that are listed in section 9 below. It is for use by Federal, State, and local government only. For all other users, the documents may be obtained from Global Engineering Documents.

¹Executive Order 12472, Assignment of National Security and Emergency Preparedness Telecommunications Functions, April 3, 1984.

²NCS Directive 4-1, Federal Telecommunication Standards Program, February 21, 1991.

³Public Law 104-113, The National Technology Transfer and Advancement Act of 1995, February 27, 1996.

TIA/EIA Documents

Global Engineering Documents
15 Inverness Way East
P. O. Box 1055
Englewood, CO 80112

CD-ROM

National Communications System
Technology & Standards Division (N6)
701 S. Court House Road
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7. Objectives. This recommendation is intended to facilitate interoperability among telecommunications facilities and systems of the Federal Government.

8. Applicability. This recommendation may be used by all Federal departments and agencies in the design and procurement of radio equipment operating at very high frequencies (VHF) and ultra high frequencies (UHF).

9. Specifications. The following documents may be used.

Telecommunications Industry Association (TIA) Telecommunications Systems Bulletins (TSB) and Interim Standards (IS) documents:

- a. TSB-102-A, APCO Project 25 System and Standards Definition
- b. TSB-102.BAAA, APCO Recommended Common Air Interface
- c. TSB-102.BAAB-A, APCO Project 25 Common Air Interface Conformance Test
- d. TSB-102.BAAC-A, APCO Project 25 Common Air Interface Reserved Values
- e. TSB-102.BAAD, APCO Project 25 Common Air Interface Operational Description for Conventional Channels
- f. IS-102.BABA, APCO Project 25 Vocoder Description
- g. IS-102.BABB-A, Project 25 Vocoder Mean Opinion Score Conformance Test
- h. IS-102.BABC, APCO Project 25 Vocoder Reference Test
- i. TSB-102.CAAA, Digital C4FM/CQPSK Transceiver Measurement Methods
- j. TSB-102.CAAB, Digital C4FM/CQPSK Transceiver Performance Recommendations
- k. TSB-102.AABA, APCO Project 25 Trunking Overview
- l. TSB-102.AABB, APCO Project 25 Trunking Control Channel Formats
- m. TSB-102.AABC, APCO Project 25 Trunking Control Channel Messages
- n. TSB- 102.AABF, APCO Project 25 Link Control Word Formats and Messages

- o. TSB-102.AABG, APCO Project 25 Conventional Control Messages
- p. TSB-102.AABD, APCO Project 25 Trunking Procedures
- q. TSB-102.BACC, Inter-RF Subsystem Interface Overview
- r. TSB-102.BACA, Inter-RF Subsystem Interface Messages

Definition

- s. IS-102.BADA, Telephone Interconnect Requirements and Definitions (Voice Service)
- t. TSB-102.BAEA, APCO Project 25 Data Overview
- u. TSB-102.BAEB, APCO Project 25 Packet Data Specification
- v. TSB-102.BAEC, APCO Project 25 Circuit Data Specification
- w. TSB-102.BAEE, Radio Control Protocol
- x. TSB-102.BAFA, APCO Project 25 Network Management

Interface

- y. TSB-102.AAAB, APCO Project 25 Security Services Overview
- z. TSB-102.AAAA-A, APCO Project 25 DES Encryption Protocol
- aa. IS-102.AAAC, Conformance Test for the Project 25 DES Encryption Protocol
- bb. TSB-102.AACA, APCO Project 25 Over-the-Air-Rekeying (OTAR) Protocol
- cc. TSB-102.AACB, Over-the-Air-Rekeying (OTAR) Operational Description
- dd. TSB-102.AACC, Conformance Tests for the Project 25 Over-the-Air-Rekeying (OTAR) Protocol

National Security Agency (NSA) documents:

- ee. NSA Specification V23-94-1, Project 25 Type 1 Encryption (classified document)
- ff. NSA Specification V23-95-1, Project 25 Type 1 OTAR (classified document)

10. Where to Obtain Copies. Additional copies of this document can be obtained from the National Communications System, Technology and Standards Division (N6), 701 South Court House Road, Arlington, VA 22204-2198. When requesting copies, refer to Federal Telecommunications Recommendation 1024B-1998, Project 25 Radio Equipment.