



# **Technical Specifications for the Telecommunications Terminal Equipment for DS1 Telecommunications**

**National Communications Commission**  
**July 23 2020**



# Technical Specifications for the Telecommunications Terminal Equipment for DS1 Telecommunications

1. Source of law

The Specifications are promulgated pursuant to Paragraph 1, Article 44 of the Telecommunications Management Act.

2. Scope of application

The Specifications apply to digital signal 1 (DS1) telecommunications terminal equipment and only to general manufacturers, importers, vendors and private users.

3. Test items and acceptance criteria

See the following table for test items and acceptance criteria.



## Table DS1 Telecommunications Terminal Equipment Test Record

Brand:

Model:

Test date:

Test items	Acceptance criteria	Test result	Verdict
1. Independent bodies other than those that shall be equipment for Type I telecommunications enterprises shall not be modified into equipment for Type I telecommunications enterprises.			
2. The addition of equipment shall not compromise the exchange, testing and transmission performance of equipment for Type I telecommunications enterprises.			
3. The normal use of equipment for Type I telecommunications enterprises shall not be compromised when a piece of private equipment is not in use or malfunctions.			
4. A security device shall be provided if a piece of private equipment is operating on utility power (110/220V, 60Hz); the said may or may not be hidden in the said equipment.	FCC Part 68 of U.S.A. or equivalent		
5. Requirements for T-1 link aggregation interface	(1) Transmission rate of 1544 kb/s; (a) The tolerance for transmission rate deviation is $\pm 50$ ppm; (b) The tolerance for receiving rate deviation is $\pm 50$ ppm.		
	(2) The line code for link aggregation shall be Bipolar-AMI, 50% of duty cycle, and the requirements of pulse density no less than 12.5% and no more than 15 consecutive zeroes (0) shall be met; or the line code of B8ZS shall be used for link aggregation.		
	(3) The frame format shall be of D4 form or extended superframe; when ESF is provided, the format shall comply with the requirements of AT&T CB. No.142 and occupy no more than 4 kb/s of facility data link.		



## Telecommunications Terminal Equipment Test Record (continued)

Test items	Acceptance criteria	Test result	Verdict
	(4) The pulse level shall comply with the suggestions of ITU-T G. 703 Pulse Mask for Interface at 1544 kb/s.		
	(5) The signal level shall comply with the suggestion of ITU-T G. 703 Digital Interface at 1544 kb/s.		
	(6) The test load impedance is $100\Omega \pm 5\%$ (resistivity).		
	(7) The pulse imbalance is $< 200\text{mV}$ for changes in signal amplitude and $< 20\text{ns}$ for changes in pulse width.		
	(8) For jitter requirements, the requirement for signal jitters at the input and output of public telecommunications network DSX-1 signal interface shall be met.		
6. Clock synchronization	In addition to providing accuracy as the internal clock source for Stratum 4, private equipment shall be capable of extracting synchronization signal from T-1 network for the synchronization between signals and T-1 network for outgoing communications.		
7. Fault isolation capability	The link aggregation module of private equipment and channel modules shall be capable of self-testing and activated loop-back testing.		
8. Electric safety	Compliance with CNS 14336-1		
9. Electromagnetic compatibility	Compliance with CNS 13438		

Final verdict	<input type="checkbox"/> Accepted	<input type="checkbox"/> Not accepted
Function summary:		

Test body: supervisor:

direct supervisor:

test technician: