



TECHNICAL OBLIGATIONS OF THE BUSINESS SUBSCRIBER

The facilities provided hereunder by the Carrier may be terminated in subscriber-provided terminal equipment or subscriber-provided communications systems. When such terminations are made, the subscriber shall comply with the minimum protective criteria which shall be no less stringent than the criteria generally accepted in the telephone industry or other appropriate criteria as may be prescribed by the Carrier. The use and restoration of Service during emergency conditions shall be in accordance with Part 64, Subpart D, Appendix A, of the FCC's Rules and Regulations, which specifies the priority system for such use and restoration. In addition, when services using the local telephone company voice grade facilities are terminated in subscriber-provided terminal equipment or subscriber-provided communications services, the subscriber shall comply with the minimum protective criteria set forth below:

1. In order to prevent excessive noise and crosstalk it is necessary that the power of the signal applied to the local telephone company's facilities be limited. A single valued limit for all applications cannot be specified. Therefore, the power of the signal in the band above 300 Hertz which may be applied by subscriber-provided equipment at the point of termination will be specified by the Carrier for each application to be consistent with the signal power allowed on the telecommunications network.
2. To protect the local telephone company services from interference at frequencies which are above the band of facilities provided, the Carrier will specify the acceptable signal power in the following bands which may be applied by subscriber-provided equipment or communications system at the point of termination to ensure that the input to the local telephone company facilities shall not exceed the limits set forth below:
 - The power in The band from 300 Hertz to 4,000 Hertz shall be at least 18 db below the power of the signal as specified in (1) preceding.
 - The power in the band from 4,000 Hertz to 10,000 Hertz shall not exceed 16 db below one milliwatt.
 - The power in the band from 10,000 Hertz to 25,000 Hertz shall not exceed 24 db below one milliwatt.
 - The power in the band from 25,000 Hertz to 40,000 Hertz shall not exceed 36 db below one milliwatt.
 - The power in the band above 40,000 Hertz shall not exceed 50 db below one milliwatt.

(Where there is connection via subscriber-provided terminal equipment or subscriber-provided communications systems to a message telecommunications service or a WATS service, to prevent the interruption or disconnection of a call or interference with network control signaling, it is necessary that the signal applied by the subscriber-provided equipment to the interface at no time have energy solely in the 2450 to 2750 Hertz band and when signal power is present in the 2450 to 2750 Hertz band, it must not exceed the power present at the time in the 800 to 2450 Hertz band.

Where such subscriber-provided equipment or subscriber-provided communications system applies signals having components in the frequency spectrum below 300 Hertz, excluding ringing signals, the currents and voltages (including all harmonics and spurious signals) at the interface shall not exceed the limits indicated in (1) through (4) following:

1. The maximum root-mean-square (rms) value, including dc and ac components, of the current per conductor will not exceed 0.15 ampere.
2. The magnitude of the peak of the conductor to ground voltage shall not exceed 70 volts.

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- 3. The conductor to conductor voltage shall be such that the conductor to ground voltage limit in (2) preceding is not exceeded. If the signal source is not grounded, the voltage limit in (2) preceding applies to the conductor to conductor voltage.
- 4. The total weighted rms voltage within the band from 50 Hertz to 300 Hertz shall not exceed 100 volts. The total weighted rms voltage is the square root of the sum of the products of the weighting factors for the individual frequency components times the square of the rms voltage of the individual frequency components. The weighting factors are as indicated:

<u>For Frequencies Between</u>	<u>Weighting Factor</u>
50 Hertz and 100 Hertz	$f^2/10^4$
100 Hertz and 300 Hertz	$f^{3.3}/10^{6.6}$

Where f is the numerical value of the frequency, in Hertz, of the frequency component being weighted.

- 5. Where the signal applied by the subscriber-provided terminal equipment or the subscriber-provided communications service will have energy solely in the 2675 and 2750 Hertz band, the subscriber shall coordinate the application of such signal with the Carrier.

When services using local telephone company medium speed digital facilities are terminated in subscriber-provided terminal equipment or subscriber-provided communications systems, the subscriber shall comply with the minimum protective criteria set forth below:

- 1. The maximum root-mean-square (rms) value, including dc and ac components of the current per conductor will not exceed 0.15 ampere,
- 2. The magnitude of the peak of the conductor to ground voltage shall not exceed 70 volts.
- 3. The conductor to conductor voltage shall be such that the conductor to ground voltage limit in (b) preceding is not exceeded. If the signal source is not grounded, the voltage limit in (b) preceding applies to the conductor to conductor voltage.
- 4. The total weighted rms voltage within the band from 10 Hertz to 10,000 Hertz shall not exceed 100 volts. The total weighted rms voltage is the square root of the sum of the products of the weighting factors for the individual frequency components times the square of the rms voltage of the individual frequency components. The weighting factors are as indicated:

<u>For Frequencies Between</u>	<u>Weighting Factor</u>
10 Hertz and 100 Hertz	$f^2/10^4$
100 Hertz and 10,000 Hertz	$f^{3.3}/10^{6.6}$

Where f is the numerical value of the frequency, in Hertz, of the frequency component being weighted.



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5. (Continued)
5. The total voltage within the frequency band from 10,000 Hertz to 25,000 Hertz shall not exceed 0.05 volts rms,
 6. The total voltage within the frequency band from 25,000 Hertz to 40,000 Hertz shall not exceed 0.012 volts rms,
 7. The total voltage within the frequency band above 40,000 Hertz shall not exceed 0.0025 volts rms,
 8. The foregoing signal level restrictions are based upon multiple disturbers being present in a given cable. When several metallic circuits employing pulse-type transmission are keyed simultaneously the signal limits stipulated in (4) through (7) preceding must be reduced by multiplying the voltage signal limits by a factor of $1/N$, where N is the expected number of transmissions occurring simultaneously,
 9. Where the signal applied by the subscriber-provided terminal equipment or the subscriber-provided communications service will have energy solely in the 2675 to 2750 Hertz band, the subscriber shall coordinate the application of such signal with the Carrier.

The subscriber will be responsible for ensuring that subscriber-provided signals will not result in interference with any of the services provided by the Carrier or interfere with others using services provided by the Carrier. Physical arrangements for protection of the Carrier's facilities, serving the subscriber, shall be employed, if needed. The subscriber will be required to use only those devices found to be necessary to ensure proper operation of the local access facility and the intercity channel facility. The intent of this provision is to ensure proper signal insertion so as to protect the entire network. All signals must be of the proper type, bandwidth, and other technical parameters, so as not to damage the Carrier's equipment or degrade service to other subscribers. It shall also be the responsibility of the subscriber to provide adequate electrical power, wiring and electrical outlets necessary for the proper operation of Carrier's equipment on his premises.