

# SONET Regenerator (SONET RGTR) Equipment Generic Criteria

## Contents

1. Introduction.....	1-1
1.1 Organization.....	1-1
1.2 Reason for Reissue from Technical Advisory .....	1-2
1.3 Criteria.....	1-2
2. SONET RGTR Functions and Applications .....	2-1
2.1 Functional Description .....	2-1
2.2 Types of SONET RGTR Equipment.....	2-1
2.2.1 STE RGTR.....	2-2
2.2.2 Physical Layer RGTR .....	2-3
2.3 Applications .....	2-3
3. Network Compatibility .....	3-1
3.1 Physical Layer Requirements.....	3-1
3.1.1 Optical System Parameters .....	3-1
3.1.2 Synchronization .....	3-1
3.1.3 Jitter.....	3-2
3.1.4 Transmission Delay.....	3-2
3.2 Section Layer Requirements .....	3-2
3.2.1 Framing Requirements .....	3-2
3.2.2 Section Overhead Processing.....	3-3
3.2.3 Line AIS.....	3-3
3.2.4 Scrambling .....	3-3
4. Operations Criteria.....	4-1
4.1 SONET Section EOC and RGTR Memory.....	4-1
4.2 Local Craftsperson Interface .....	4-1
4.3 SONET RGTR Management .....	4-2
4.3.1 Performance Monitoring.....	4-2
4.3.2 Fault and Alarm Management.....	4-2
4.3.2.1 LOS and LOF Alarms.....	4-3
4.3.2.2 Equipment Alarms .....	4-3
4.3.3 Configuration Management .....	4-3
4.4 Loopback.....	4-4
5. Other Criteria .....	5-1
5.1 Power Requirements .....	5-1
5.2 Environmental Requirements.....	5-1
5.3 SONET RGTR Reliability .....	5-1

---

---

6. Acronyms .....	6-1
7. References .....	7-1
Appendix A: Summary of SONET Regenerator Criteria.....	A-1

## List of Figures

Figure 2-1.	SONET Section Overhead Byte Designations for STS-1 .....	2-4
Figure 2-2.	A Functional Diagram Example of a SONET STE RGTR .....	2-5
Figure 2-3.	A Functional Diagram Example of a SONET Physical Layer RGTR .....	2-6
Figure 2-4.	An Example of 1:n RGTR Configuration.....	2-7
Figure 4-1.	An Example of Operation Interface Module (OIM) Access Configuration.....	4-5
Figure 4-2.	SONET RGTR Loopback.....	4-6



## List of Tables

Table 4-1. SONET RGTR Configuration Management ..... 4-4