



ANALYSIS BANDWIDTH SPECTRUM IN SONET & SDH

¹Payal Dhull Research Scholar Department ECE IIET, Jind

²Kapil Sachdeva Assistant Professor Department ECE IIET, Jind

ABSTRACT: Synchronous Optical Networking & Synchronous Digital Hierarchy are standardized protocols it transfer multiple digital bit streams with same period & phase over optical fiber using lasers or highly coherent light from light-emitting diodes. At low transmission rates data could also be transferred via an electrical

interface. method was developed to replace PDH system for carrying big amounts of telephone calls & data traffic over same fiber without same period problems. SONET generic criteria are detailed in Telcordia Methods Generic Requirements document GR-253-CORE. Generic criterion same to SONET & different communication system (e.g., asynchronous fiber optic management or digital radio systems) are found in Telcordia GR-499-CORE.



© JRPS International Journal for Research, Publication & Seminar

[1] INTRODUCTION

To satisfy requirements of increasing data rate for differing from each other applications; ANSI developed standard known as Synchronous Optical Network (SO-NET) by utilizing enormous bandwidth of optical fiber. Another similar standard developed by ITU-T would be known as SDH. SO-NET would be American National Standards Institute standard with same period data transmission on optical media. international equivalent of SO-NET would be synchronous digital hierarchy. Same here; they ensure standards so it digital networks could interconnect internationally & it existing conventional transmission systems could take advantage of optical media through tributary attachments. SO-NET had been proposed by Bell core in middle 1980s & would be now ANSI standard. SO-NET defines interface standards at physical layer of OSI seven-layer model. standard defines hierarchy of interface rates it allow data streams at different rates to be multiplexed. SO-NET establishes Optical Carrier (OC) levels from 51.8 Mb ps(OC-1) to 9.95 Gbps. Prior rate standards are used by different countries specified rates it had been not compatible for multiplexing. With implementation of SO-NET; communication carriers throughout world could interconnect their existing digital carrier & fiber optic systems. Short for

Synchronous Optical Network; standard for connecting fiber-optic transmission systems.

STS	OC	Raw (Mbps)	SPE (Mbps)	User (Mbps)
STS-1	OC-1	51.84	50.12	49.536
STS-3	OC-3	155.52	150.336	148.608
STS-9	OC-9	466.56	451.008	445.824
STS-12	OC-12	622.08	601.344	594.432
STS-18	OC-18	933.12	902.016	891.648
STS-24	OC-24	1244.16	1202.688	1188.864
STS-36	OC-36	1866.23	1804.032	1783.296
STS-48	OC-48	2488.32	2405.376	2377.728
STS-192	OC-192	9953.28	9621.604	9510.912

Table 1 Synchronous transport signals & optical carriers

Note : For Complete paper/article please contact us info@jrps.in

Please don't forget to mention reference number , volume number, issue number, name of the authors and title of the paper