



A REPLACEMENT FOR LONGITUDINAL RECORDERS

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A Replacement For Longitudinal Recorders

- Why The Need To Replace
- An Excellent Replacement
- Replacing Pays Off



Why the Need to Replace

- High Life Cycle Cost
 - Media costs are \$150 - \$250 per 14" reel
 - This is 15 + times more than alternative technologies
 - Maintenance cost run upwards of \$40,000 per year
 - This is ~ 80+ times more than newer products
 - Acquisition costs are increasing
 - Lower volumes equate to higher costs
- Products Becoming Obsolete
 - Few models in production
 - At end of life cycle
- Products with new technology available
 - Better performance
 - Lower life cycle costs



An Excellent Replacement

- Helical scan Recorder and Mux/Demux

Parameter	Helical Scan with Mux	Longitudinal
Number of Channels	1 - 8	14 tracks
Bandwidth	8 MHz/# of chans selected	400 Hz - 2 MHz
Signal-to-Noise Ratio	24 dB rms/rms	26 dB rms/rms
Time Base Error	10 ns	300 - 500 ns
Media	SVHS ST-120	10 1/2 - 15 " Reel
Media cost	\$8 - \$10/cassette	\$150 - \$200/14" reel
Record Time	40 minutes	15 minute @ 120 ips
Auxiliary Channel	2 standard	Optional voice module
Aux Channel Bandwidth	100 - 15/20 KHz	Not applicable
Physical Size (total)	8.75" H x 11" W x 18.5" D	24" H x 19 " W x 18" D
Volume (both)	1 cubic feet	4.6 cubic feet
Power	Nom 75 W; NTE 100 W	480 - 1000 W



An Excellent Replacement

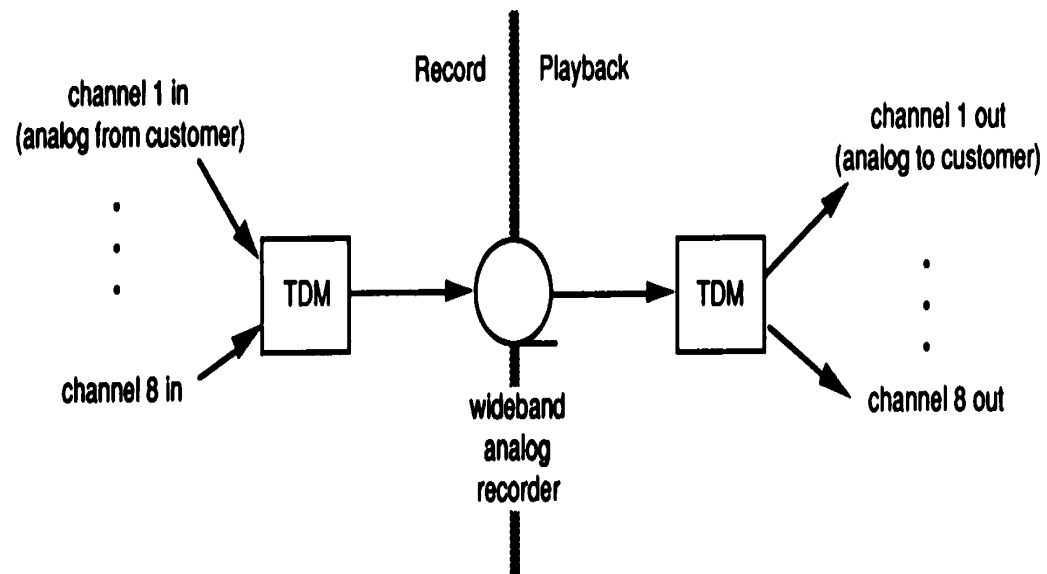
- Flexible Bandwidth/Channel Operation

No. of Channels	Bandwidth per Channel
2 Channel	DC - 4 MHz
3 Channel	DC - 2.67 MHz
4 Channel	DC - 2 MHz
5 Channel	DC - 1.6 MHz
6 Channel	DC - 1.33 MHz
7 Channel	DC - 1.14 MHz
8 Channel	DC - 1 MHz



Recorder and Mux/Demux

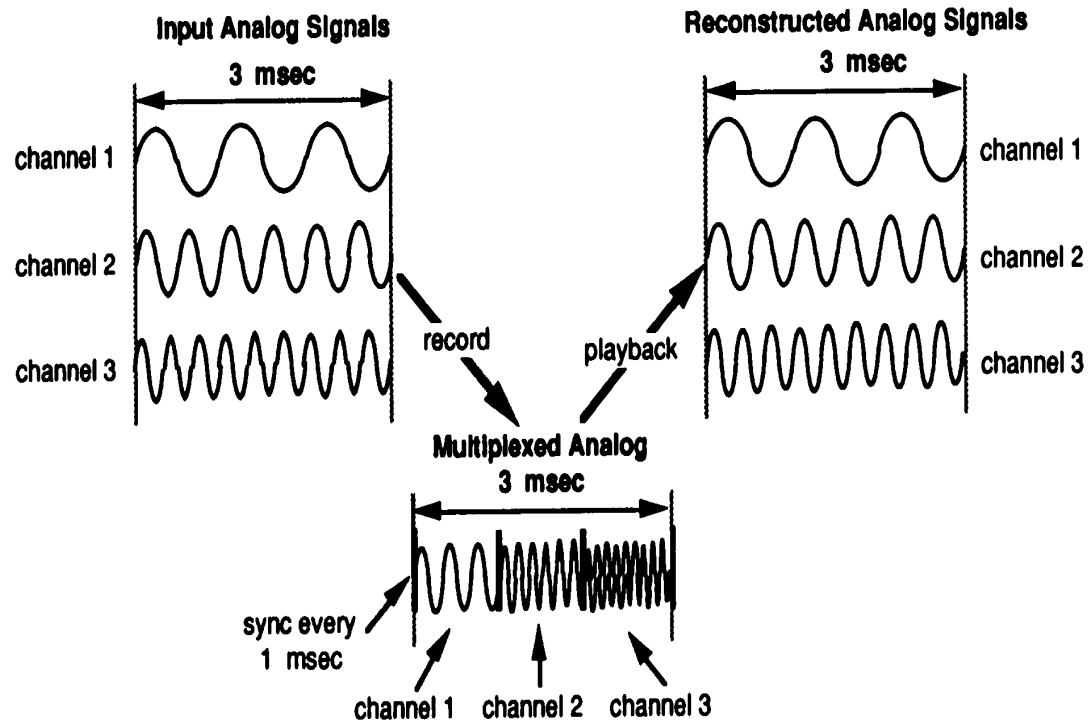
■ Functional Block Diagram





Time Division Multiplexing

- Signal Multiplexing/Demultiplexing





Conclusion

- Helical Scan Recorder with Multiplexer/Demultiplexer
 - Record/Reproduce 2 to 8 channels at different bandwidths
 - Have 2 Auxiliary Channels for Total of 10 Channels
 - Can record IRIG B and voice annotations
 - Size is less than Longitudinal Recorders
 - Power consumption is less
 - Time Base Error is better
 - Uses lower cost COTS media
 - Has longer record times
 - Can record higher bandwidths



Replacing Pays Off

- Case Study: 1500 Minutes of Recording (one year)

- Cost Savings

	Helical Scan & Mux/Demux	Longitudinal
Media usage	38 SVHS ST-120 cassettes	100 14" Reels
Media cost	\$380 for 38 cassettes	\$20,000 for 100 Reels
Maintenance	\$500/yr	\$40,000/yr

- Miscellaneous cost savings

- Media storage: 1.14 ft³ vs 6 ft³
 - Equipment volume: 1 ft³ vs 4.6 ft³
 - Power consumption: 200 W vs 500+ W

- Payback Period

- Approximately 1.3 years or 16 months

- Recorder/Multiplexer Acquisition cost: ~ \$ 83K