

Correction

Number of sources: 8
Rate per source: 128 Kbps
Data per source per frame: 2 bytes
Overhead: 2 bytes sync + 1 byte control

1. Calculate the frame size in bits. [1.5 pts]

Data: 8×2 bytes = 16 bytes
Overhead: $2 + 1 = 3$ bytes
Total frame size = 19 bytes
 $19 \times 8 = 152$ bits

Answer: 152 bits

2. Calculate the total data rate of the link. [1.5 pts]

Total useful rate = 8×128 Kbps = 1024 Kbps
Frame rate (from source):
 $128000 \text{ bits/s} \div (2 \text{ bytes} \times 8 = 16 \text{ bits}) = 8000 \text{ frames/s}$

Total link rate = $152 \times 8000 = 1,216,000$ bps

Answer: 1.216 Mbps

3. Calculate the frame rate. [1.5 pts]

Frame rate = $128000 / 16$
= 8000 frames/s

Answer: 8000 frames/s

4. Calculate the useful data rate (excluding overhead). [1.5 pts]

Useful data per frame = 16 bytes = 128 bits
Useful rate = $128 \times 8000 = 1,024,000$ bps

Answer: 1.024 Mbps