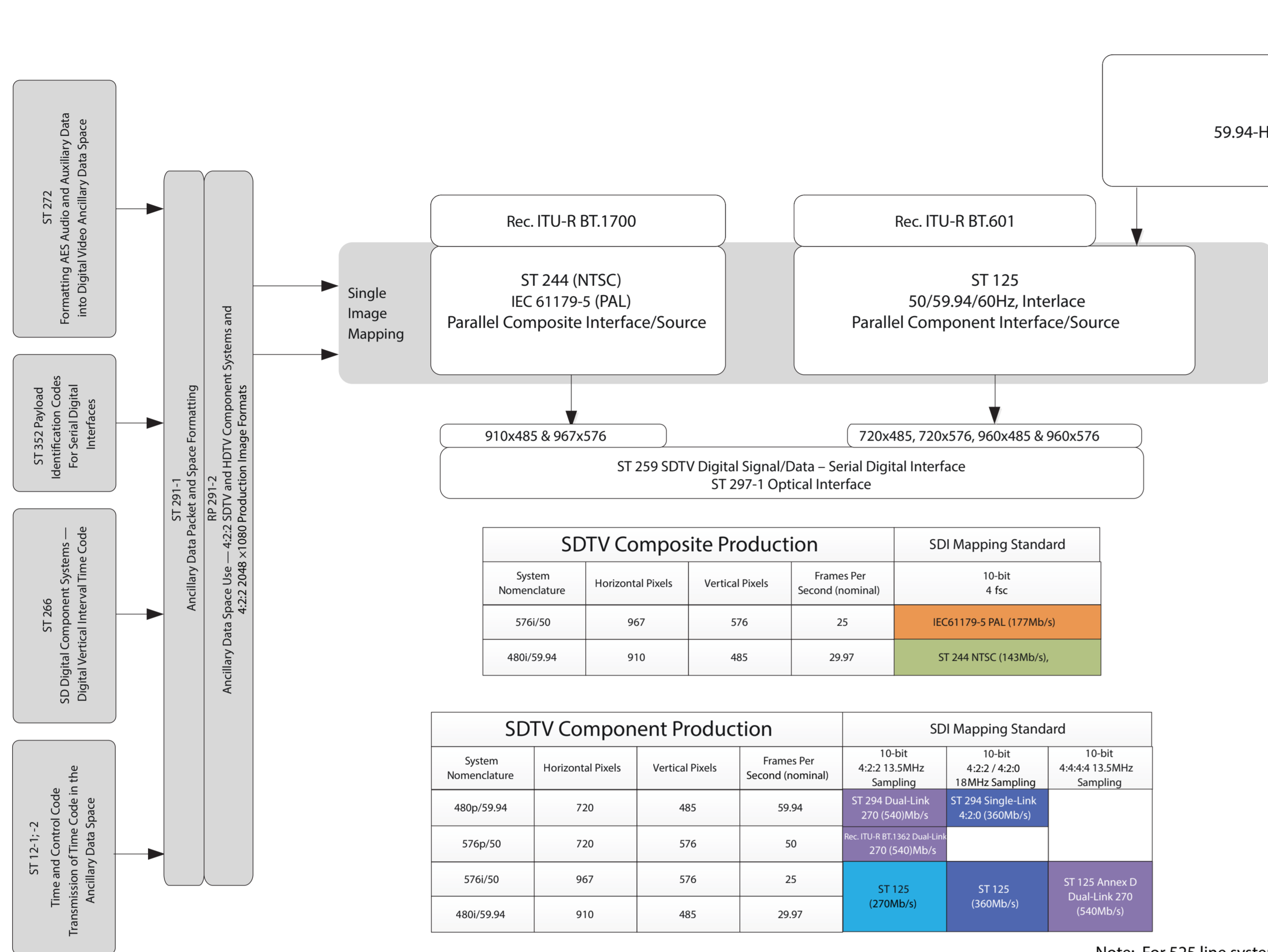
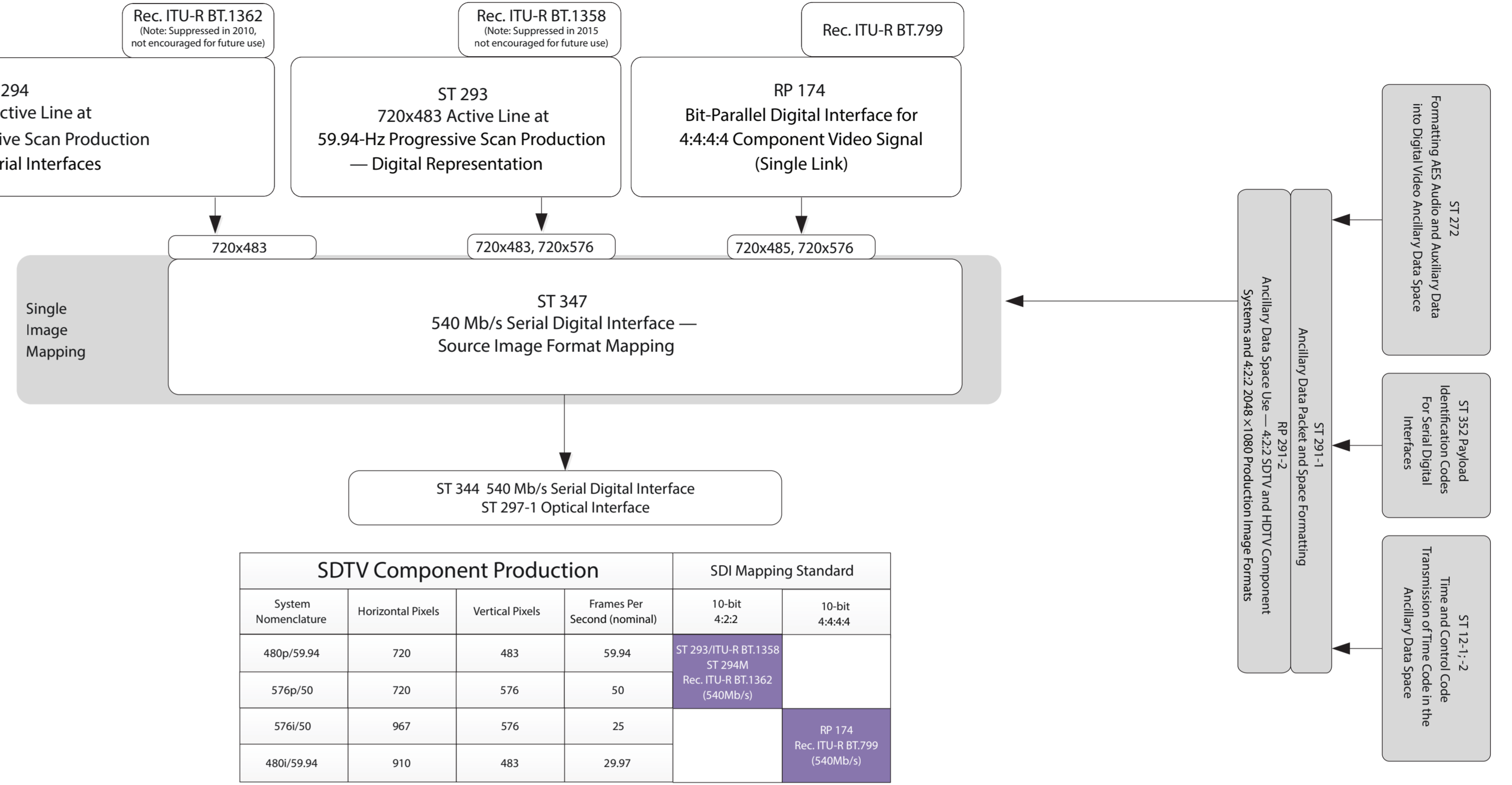


## ST 259 143Mb/s, 177Mb/s, 270Mb/s & 360Mb/s SDI

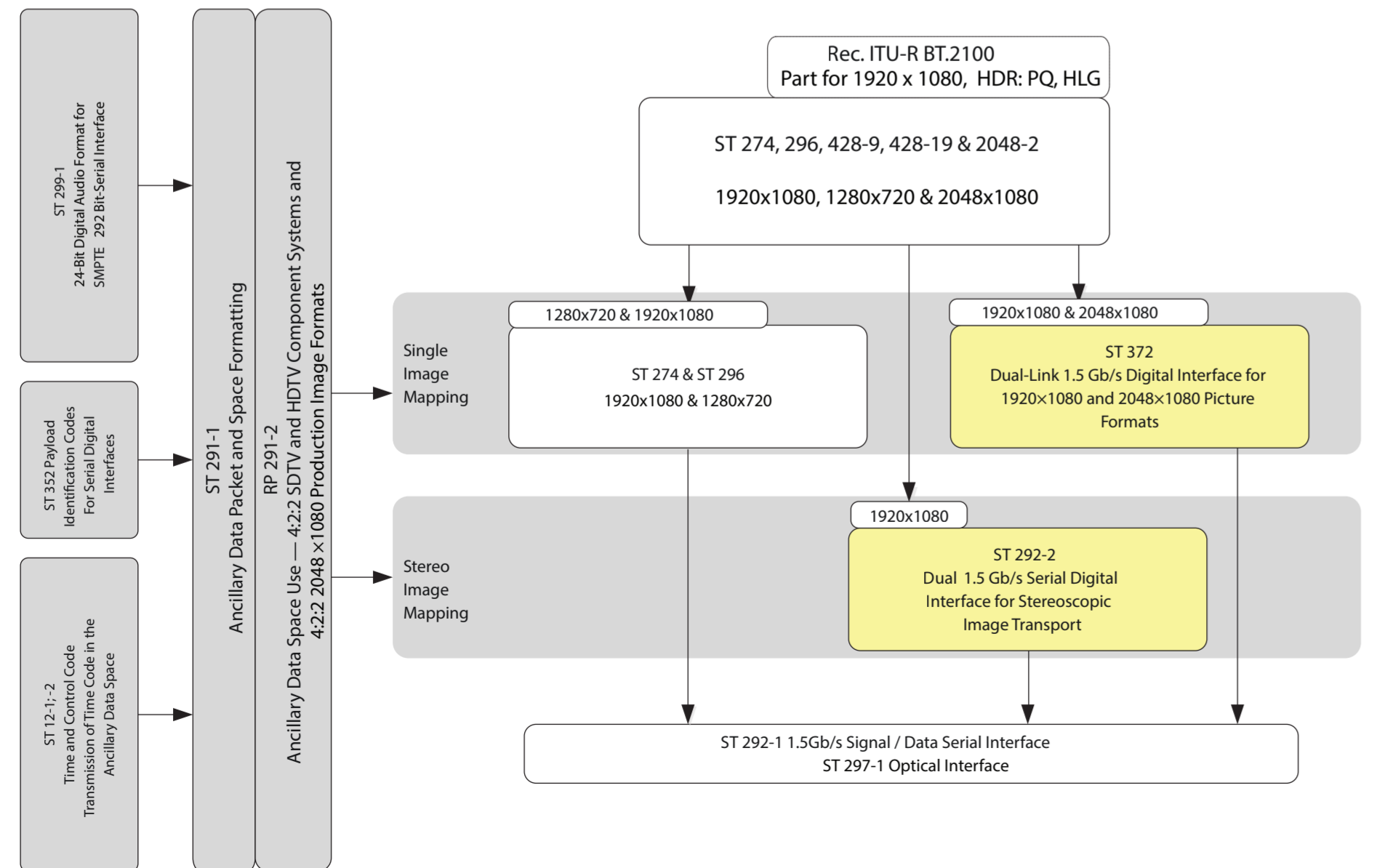


## ST 344 540Mb/s SDI



Note: For 525 line systems the number of active lines may be 483 or 485.

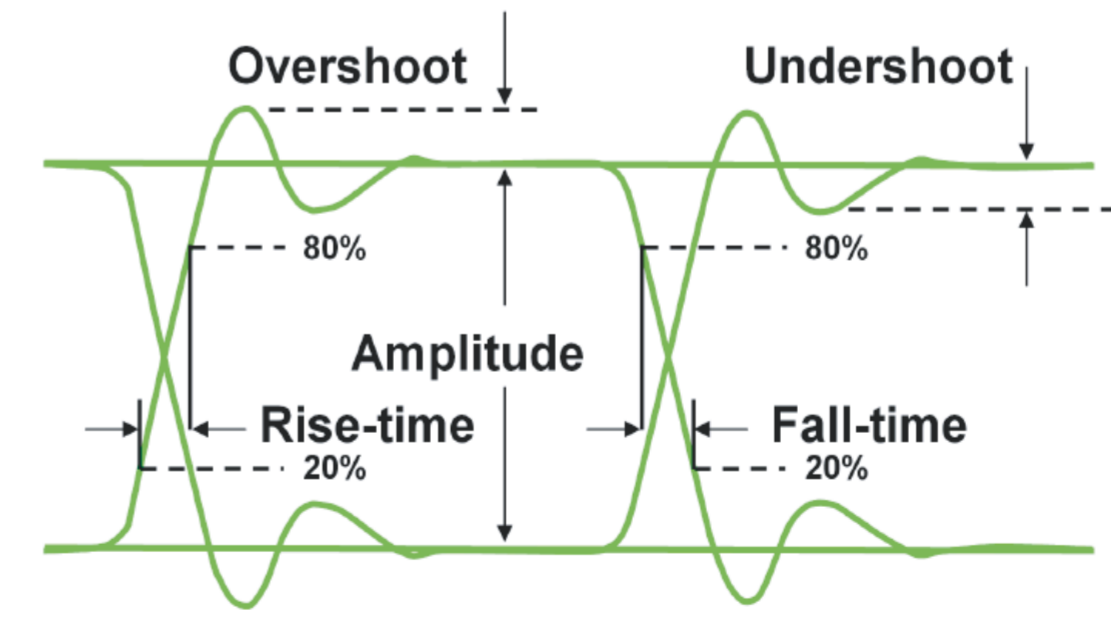
## ST 292-1 1.5G SDI



HDTV and 2K D-Cinema Production				SDI Mapping Standard		
System Nomenclature	Horizontal Pixels	Vertical Pixels	Frames Per Second (nominal)	10-bit 4:2:2	12-bit 4:2:2	12-bit 4:4:4
1080p60/59.94	1920 / 2048	1080	60			
1080p50	1920 / 2048	1080	50			
1080p48/47.95	2048	1080	48			
1080i60/59.94	1920 / 2048	1080	30			
1080i50	1920 / 2048	1080	25			
1080p30/29.97	1920 / 2048	1080	30			
1080p25	1920 / 2048	1080	25			
1080p24/23.98	1920 / 2048	1080	24			
720p60/59.94	1280	720	60			
720p50	1280	720	50			
720p30/29.97	1280	720	30			
720p25	1280	720	25			
720p24/23.98	1280	720	24			

3D HDTV and 2K D-Cinema Production				SDI Mapping Standard		
System Nomenclature	Horizontal Pixels	Vertical Pixels	Frames Per Second (nominal)	10-bit 4:2:2	12-bit 4:2:2	12-bit 4:4:4
1080p30/29.97	1920 / 2048	1080	30			
1080p25	1920 / 2048	1080	25			
1080p24/23.98	1920 / 2048	1080	24			
720p60/59.94	1280	720	60			
720p50	1280	720	50			
720p30/29.97	1280	720	30			
720p25	1280	720	25			
720p24/23.98	1280	720	24			

## Electrical / Optical Parameters



Parameter	Electrical Parameters		
	143 Mb/s - 177 Mb/s - 270 Mb/s - 360 Mb/s	540 Mb/s	1.5 Gb/s
Standard	ST 259 Rec. ITU-R BT.656	ST 344	ST 292-1 Rec. ITU-R BT.1120-6
Coding	Scrambled NRZI		
Amplitude	800mV +/- 10%		
DC Offset	0.0V +/- 0.5V		
Rise/Fall Time	400ps up to 1.5 ns	400ps up to 800ps	< 270ps
Delta Rise / Fall Time	+/- 500ps	+/- 200ps	+/- 100ps
Over / Undershoot	10% of amplitude		
Timing Jitter (A1) [f1 to f3]	< 0.2 UI	< 0.2 UI	< 1UI
Alignment Jitter (A2) [f3 to f4]	< 0.2 UI	< 0.2 UI	< 0.2 UI
Return Loss	<15dB from 5MHz up to the clock frequency	<15dB from 5MHz up to 540 MHz	<15dB from 5MHz up to the clock frequency

Parameter	Transmit Unit Optical Output Parameters			
	SMPTE ST 297-1 / Rec. ITU-R BT.1367			
	High-Power SM (9/0/125 um)	Medium-Power SM	Low-Power SM	Low-Power MM (50/125um, 62.5/125 um)
Transmission Circuit Fiber	SM (9/0/125 um) or MM (50/125um, 62.5/125 um)			
Light Source	Laser or LED			
Optical Wavelength	1310 +/- 40 nm		1310 +/- 40nm	
	1550 +/- 40 nm		850 +/- 40 nm	
Max Spectral Line Width	1 nm	4 nm	10 nm	30 nm
Max Optical Power	+10 dBm	0 dBm		-3 dBm
Min Optical Power	0 dBm	-3 dBm		-12 dBm
Max Extinction Ratio	5:1 (10:1 preferred)			
Rise / Fall time (optical)	Same as Electrical Performance in SMPTE ST 259, ST 344, ST 292-1 or Rec. ITU-R BT.1367			
Max Reflected Power	-14 dBm			
E/O Transfer Function	Logic '1' maximum intensity / Logic '0' minimum intensity			

Parameter	Receive Unit Optical Input Parameters		
	SMPTE ST 297-1 / Rec. ITU-R BT.1367		
Minimum Input Overload Power ST 259, ST 344, ST 292-1	> -7.5 dBm (0dBm preferred)		
Minimum Input Power ST 259, ST 344, ST 292-1	> -20 dBm		
Detector damage threshold for ST 259, ST 344, ST 292-1	> +1 dBm (minimum)		

Parameter	Optical Transmit / Receive Unit		
	143 Mb/s - 177 Mb/s - 270 Mb/s - 360 Mb/s	540 Mb/s	1.5 Gb/s
Data Rate	143 Mb/s - 177 Mb/s - 270 Mb/s - 360 Mb/s	540 Mb/s	1.5 Gb/s
Labeling <Signal Type>	A	B	C
Optical connector return loss	20 dB for 62.5/125 or 50/125 micron multimode 26 dB for 8-10/125 micron single-mode		