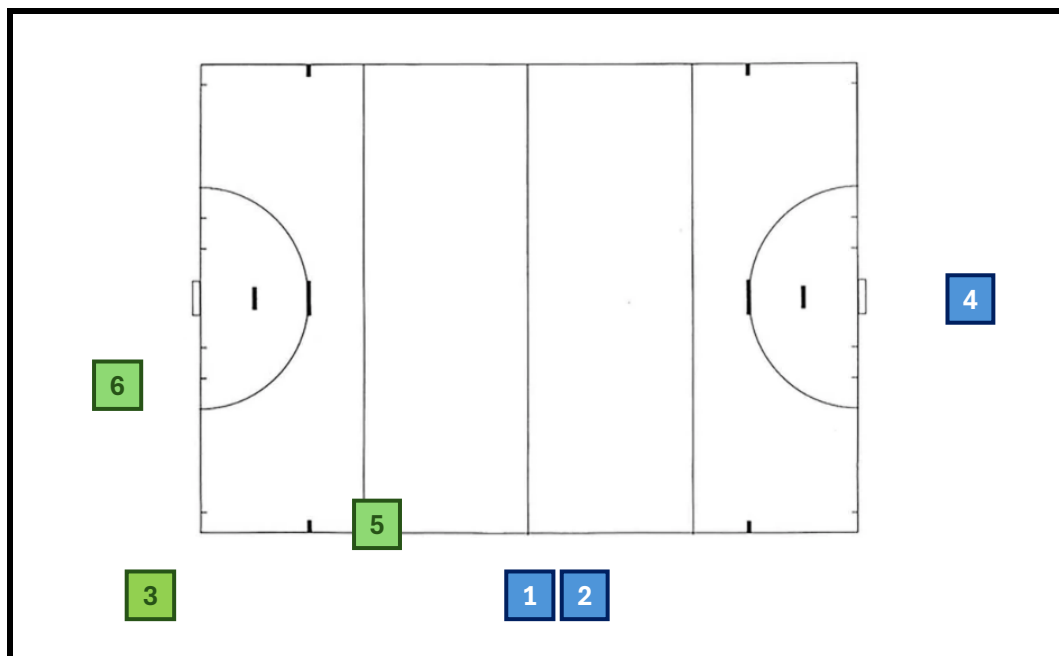




FIELD HOCKEY



Color Key

Required Positions

Options to meet required Camera Minimum

Additional Options for Manned Cameras

Not Required - Fixed Cams

#	Position	Config	Lens
1	High	Hard	40x
2	High	Hard	55x
3	Slash	Hard	55x
4	High	Hard	55x
5	Handhel	HH	17x
6	Low	Hard	55x
10	Booth	Fixed	Wide
11	Scoreboa	Fixed	24x

Additional Notes

Camera numbering reflects broadcast production standards and is not required to replicate

All lens sizes are recommended minimums based on ESPN standards and are not required

Low Endzone and/or Slash should always be opposite of High Endzone, but can be placed on either side of the

NCAA SCHOOL PRODUCED CHAMPIONSHIPS MINIMUM SPECS

VIDEO SWITCHER COMPONENTS

	VIDEO SWITCHER		
	Minimum	Standard	Optimal
Inputs	10	32	64
Keyers	2	3	4
Mix/Effects	1	2	3
Frame Rate	29.97	59.94	59.94
Resolution	720p	720p or 1080i	720p or 1080i

CAMERAS

	CAMERAS		
	Minimum	Standard	Optimal
Manned Cams*	4	4	5
Zoom*	(2) 14x, (2) 40x	24x (HHs), 60x (Hard)	24x (HHs), 80x (Hard)
Unmanned Cams^	0	2	2
Notes	<i>*Number of Manned Cameras and Zoom capabilities will vary based on Sport. Please refer to individual Sport Camera Maps</i> <i>^Scoreboard POV + Talent POV</i>		

REPLAY SYSTEM (DIGITAL SERVER BASED)

	REPLAY		
	Minimum	Standard	Optimal
Inputs	4	8	12
Outputs	2	4	4
Melt	Mini	Full	Full

GRAPHICS

GRAPHICS			
	Minimum	Standard	Optimal
GFX	Clock/Score	Clock/Score/Insert	Clock/Score/Insert/EFX
Channels	1	2	3
Notes	<i>The ESPN insert graphic look must be used, unless prior approval is given by ESPN's production team. ESPN graphics are created, distributed and maintained on Viz RT or Ross XPression. AJT Systems distributes a limited but approved version of the ESPN graphics package. NCAA can utilize the PSD files (flatten graphics) supplied via the file transfer protocol in their own local systems. The ESPN graphic look should not be incorporated into any other graphics platform where PSD files cannot be utilized (i.e., a vendor is not allowed to re-create the ESPN look within their own system). ESPN may ask the producing party to incorporate sponsorship logos for sales or billboards, if necessary.</i> <i>Note: ESPN does NOT supply clock/score units. NCAA is responsible for inclusion of a clock/score unit on one of their graphics platform channels.</i>		

AUDIO/INTERCOMM

AUDIO/COMMS			
	Minimum	Standard	Optimal
Inputs	24	64	144
Outputs*	2	4	6
Faders	8	64	144
Comm Channels	10	128	256
Phone Lines	1	2	3
Notes	<i>*Required outputs are Stereo Mix Left and Right. Layout for optimal audio outputs are...</i> <i>CH1: Stereo Mix Left Recorded in Bristol, contains generic music</i> <i>CH2: Stereo Mix Right Recorded in Bristol, contains generic music</i> <i>CH3: International Left Only Mix Minus announcers recorded and retransmitted through Bristol</i> <i>CH4: International Right Only Mix Minus announcers recorded and retransmitted through Bristol</i> <i>CH5: Left Commercial Only for Linear shows where Commercial Music is cleared</i> <i>CH6: Left Commercial Only for Linear shows where Commercial Music is cleared</i>		

TRANSMISSION

Per ESPN specifications: Must feed by LTN or IP which meet ESPN minimum requirements. ESPN production and programming need to be aware of the transmission path, as ESPN production and programming will have capacity limits on some platforms. Before purchasing any equipment, please communicate with ESPN production and programming to make sure such equipment is compatible with ESPN's receive equipment.

LTN

Coordination the LTN line with the ESPN Transmission Contact prior to booking.

IP

- For each Game of an ESPN Championship NCAA is obligated to produce, ESPN will provide an encoder (provided such host site does not already have an approved encoder). The producing party will coordinate setup and testing with the ESPN Transmission Conference Contact. If the producing party plans to buy an additional encoder, please speak with the ESPN Transmission Contact before purchase to ensure it is compatible with ESPN.
- ESPN utilizes Haivision Makito X encoders, T21 encoders and Haivision gateways, allowing secure reliable transmission of MPEG4/H.264 compressed video content via the internet.
- ESPN PREFERRED PRODUCTION A/V HANDOFF TO MAKITO X ENCORDER
 - 720p/59.94
 - HD-SDI with Embedded Audio
- ESPN IT REQUIREMENTS
 - The encoder will originate an MPEG transport stream at a nominal 10Mbps video bitrate, resulting in approximately 13Mbps ethernet bitrate on the network. An Internet-facing IP address is needed to communicate with the encoder, and if there is a firewall in-line of the communication, the ports indicated below must be open through the firewall.

IP Address / Subnet	Ports / Protocol / Direction
45.63.237.5	Ports 3000-3200 UDP ← →
45.63.237.6	Ports 3500-3600 UDP ← →
45.63.237.20	Ports 4000-4200 UDP ← →
192.234.2.18	Ports 4500-4600 UDP ← →
192.234.2.82	Ports 5000-5200 UDP ← →
192.234.2.90	Ports 6000-6200 UDP ← →
192.234.3.0/24	Ports 7000-7200 UDP ← →
199.184.108.0/25	Ports 8000-8200 UDP ← →
<u>ALL LISTED PORTS MUST BE ACCESSIBLE TO ALL LISTED IP ADDRESSES / SUBNETS</u>	Ports 11180-11505 UDP ← →
	Ports 12180-12505 UDP ← →
	Ports 13260-13505 UDP ← →
	Ports 14260-14505 UDP ← →
	Ports 29000-29100 UDP ← →
	Ports 30000-30100 UDP ← →

	Ports 31000-31100 UDP ← →
	Ports 32000-32100 UDP ← →
	Ports 33000-33100 UDP ← →
	Port 80 and 443 TCP (HTTP/S)
	Port 22 TCP (SSH)
← =Connection initiated From Bristol to Site	→ = Connection initiated From Site to Bristol

