



WHAT WILL HDTV RECEIVERS NEED TO BE ABLE TO DO?

EBU suggestions

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HD Receivers



- Not a complete guide
- There are issues not yet clear
- But we need to start with first generation receivers.....
- Hopefully these will help the discussion.

Video



- **720p/50 or 1080psf/25 or 1080i/25**
- 60Hz versions also (though no known plans)
- Seamless change of format between channels and programmes please.
- Compression **MPEG4 AVC** or VC1
- Backward compatible **MPEG2 MP@HL**

Audio



- 5.1 surround sound
- “At least one of the DVB schemes”
- “Enhanced AC3 is a future proof option”
- We give any help short of actual assistance
- At least backward compatibility is needed.

Signalling



- SDTV, 720p/50, 1080i/25, 720p/60, 1080i/30
- DVB Copy Protection (after a few more meetings at the Copacabana?)
- 1080psf/25 within a 1080i/25 structure (DVB-AVC to be asked to signal). Please support.

Outputs



- HDTV and HDTV up-scaled from SDTV on HDMI (HDCP/default = off please)
- SDTV and SDTV downscaled from HDTV on SCART.
- Manually switching of outputs, and 'original format' option.
- IEE 1394 for PVR?
- DNLA requirements for home network?

PVRs



- Best option: record all integral parts of the programme.
- Second best option: record key elements
- Simple and intuitive user interface

Audio-video timing



- Assume transmitted signal is co-timed
- Overall tolerance (light-to-light) -5ms and +15 ms

Overscan and Safe area

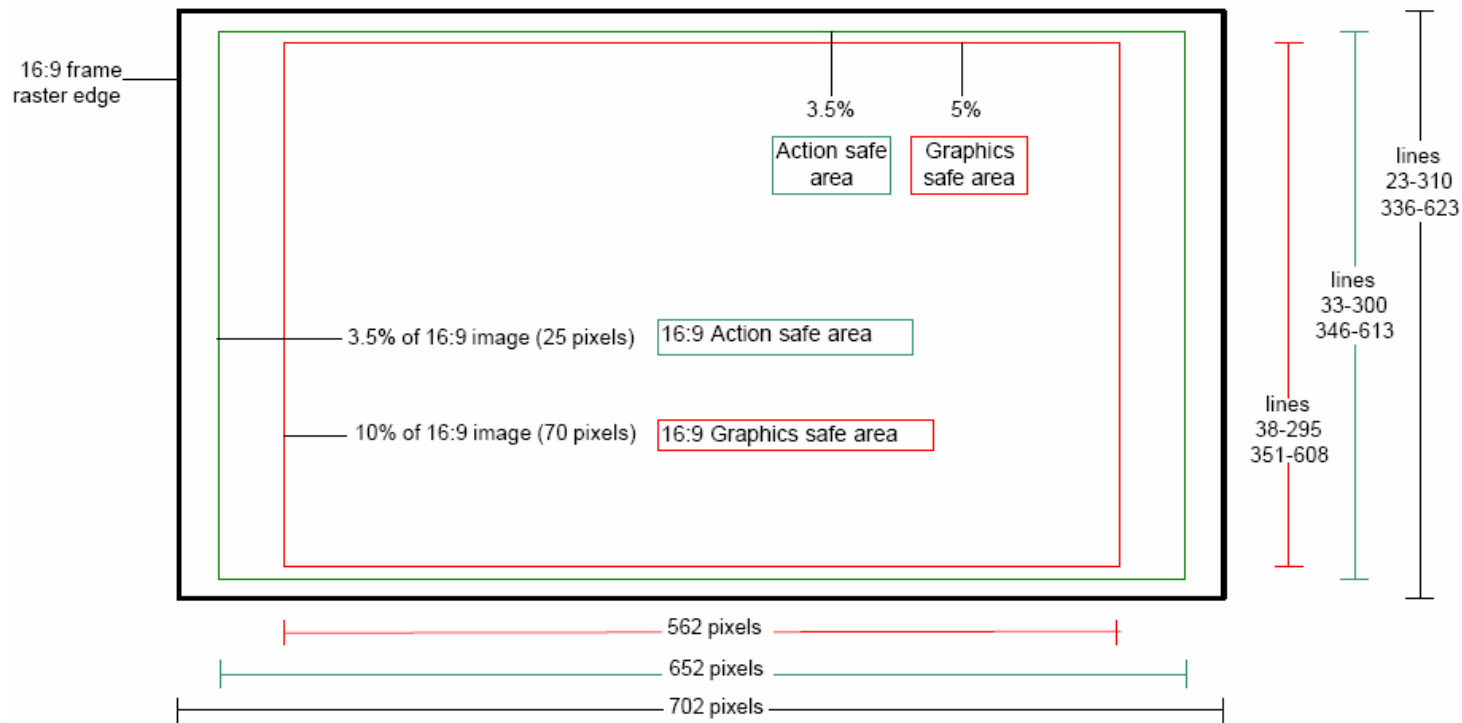


- Conventional 5% overscan may be unnecessary with flat panel displays
- Would 1-2% be possible?
- EBU “safe areas” will be maintained for production.

EBU 16:9 Action and Graphics Safe Areas



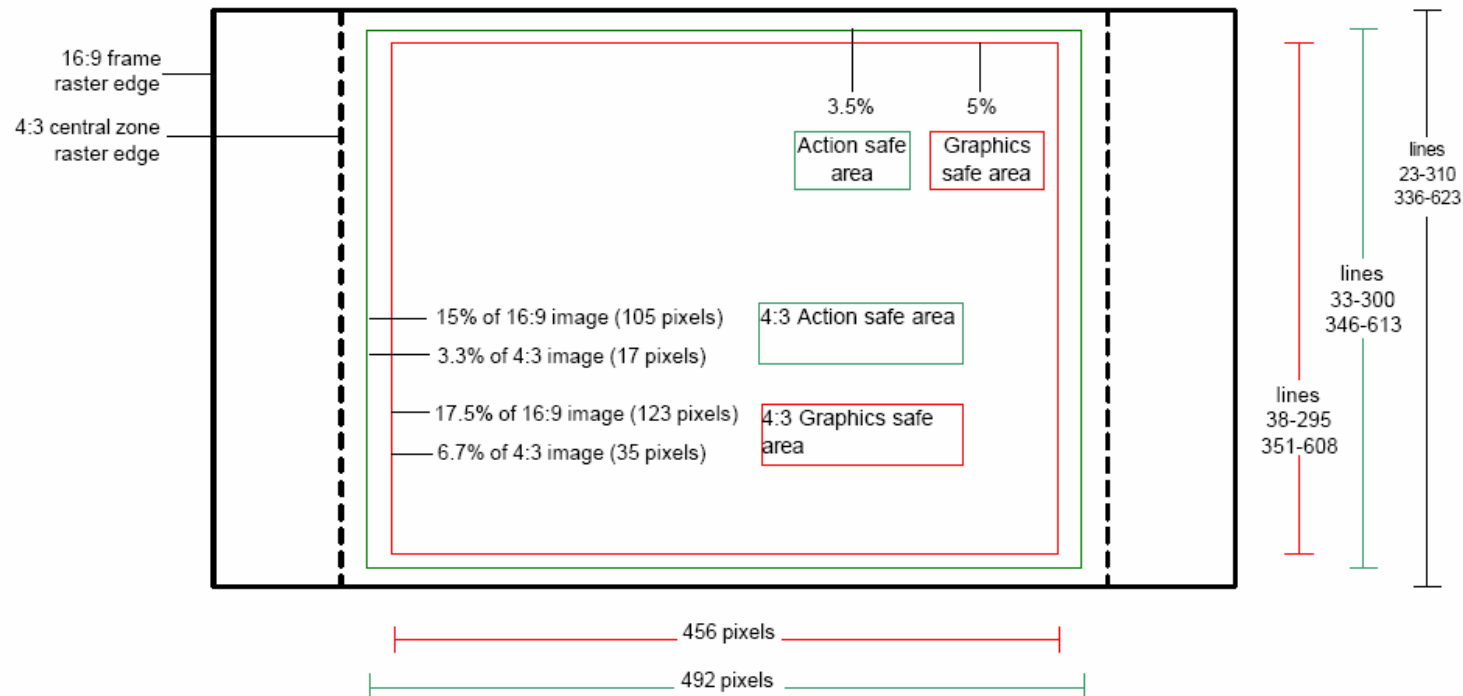
Figure 1: 16:9: Full Image: Action and Graphics Safe Areas



Shoot and Protect for 4:3



Figure 2: 16:9: Shoot-to-protect 4:3: Action and Graphics safe areas



Middleware



- A number of different systems in use for SDTV (OpenTV, MediaHW, MHP, MHEG)
- EBU preference for an open or accessible standard...but we know it's a complex area.
- Subtitles: DVB Subtitling?

Main issues?



- The sound system...relative roles of the MPEG (AAC) and Dolby (AC3) approaches? Manufacturers must take some responsibility here.
- What happens to VC1?
- What happens to TV Anytime?
- What happens to DNLA?