

AFD data flow

Version 1.12, May 1, 2013

Clip AFD	
omneon_afd (debug only)	H
Encoda user data => AFD/AR	
clip meta data	
0/0	L

Clip/Frame AFD	
If not 0/0	H
SMPTE 2016 ANC	
RP186 VI (note 4)	
A/53 AFD	
SD clip -> invalid/0	
HD clip -> invalid/1	L

AFD	
valid/x	H
valid/x	
invalid/x	L

Native AFD	
valid/x	H
invalid/0 -> player4x3afd/0 (note 3)	
invalid/1 -> player16x9afd/1 (note 3)	
invalid/x	L

VFC to AFD		
VFC	AR	AFD/AR
(note 2)	x	invalid/x
Anamorphic	x	1000/1
Crop	0	1011/0
Crop	1	1011/1
Full	0	1010/0
Full	1	1001/1
Pillar	0	1001/0
Letter	x	1010/1
others	x	invalid/x

Clip VFC	
player_attach_vfc	H
omneon_vfc user data	
none	L

AFD to VFC	
AFD/AR	VFC
0010/0	Pillar
0011/0	Pillar
0100/0	Full
1000/0	None
1001/0	Pillar
1010/0	Full
1011/0	Crop
1101/0	Crop/Pillar (note 1)
1110/0	Full
1111/0	Full
0010/1	Letter
0011/1	Crop
0100/1	Letter
1000/1	None
1001/1	Full
1010/1	Letter
1011/1	Crop
1101/1	Full
1110/1	Crop/Letter (note 1)
1111/1	Full/Letter (note 1)
others	None

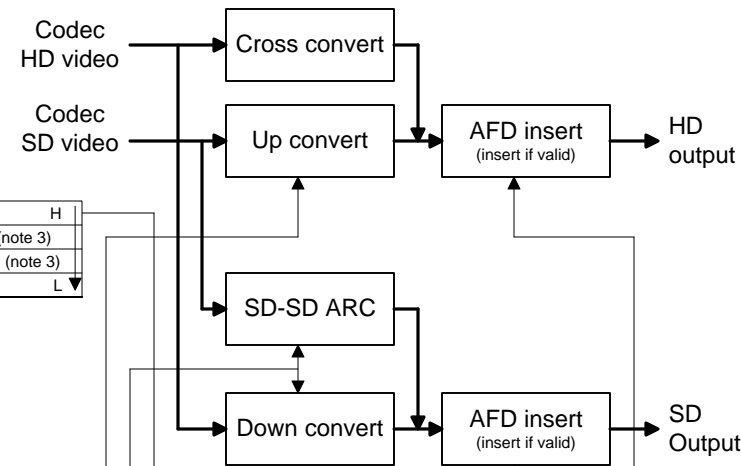
Up VFC	
xxxx/1 -> anamorphic	H
If not none	
If not none	
player_up_vfc	
Pillar	L

SD VFC	
sdArc off -> anamorphic	H
sdArc set to 16x9	
sdArc set to 4x3	L

Down VFC	
xxxx/0 -> anamorphic	H
If not none	
If not none	
player_down_vfc	
Letter	L

HD AFD		
VFC	AFD/AR	Converted AFD/AR
x	invalid/x	invalid/x
Anamorphic	valid/x	valid/x
Crop	xxxx/0	1011/1
Full	0100/0	0100/1
Full	1110/0	1110/1
Full	1111/0	1111/1
Full	xxxx/0	1010/1
Pillar/other	1101/0	1101/1
Pillar/other	xxxx/0	1001/1

SD AFD		
VFC	AFD/AR	Converted AFD/AR
x	invalid/x	invalid/x
Anamorphic	valid/x	valid/x
Crop	xxxx/1	1011/0
Full	1101/1	1101/0
Full	xxxx/1	1000/0
Letter/other	0100/1	0100/0
Letter/other	1110/1	1110/0
Letter/other	1111/1	1111/0
Letter/other	xxxx/1	1010/0
Crop	xxxx/0	1011/1
Full	0100/0	0100/1
Full	1110/0	1110/1
Full	1111/0	1111/1
Full	xxxx/0	1010/1
Pillar/other	1101/0	1101/1
Pillar/other	xxxx/0	1001/1



Director MediaPort

Recording Rules

1. Capture RP186 if present and save in every frame in SMPTE328 VI in MPEG user data.
2. Capture SMPTE2016 VANC packet if present and save in VANC stream if present.
3. Send AFD/AR to Director. Prioritize source as SMPTE2016 highest, RP186 next, 0/0 last.
4. Save AFD/AR as clip metadata only if all frames received have the same AFD/AR.

Note 1: First entry is the default. Second entry is used when the "center cut safe" setting is disabled. NOTE: NOT IMPLEMENTED
 Note 2: Use entry only when tap key "IAfDbI" is set.
 Note 3: Use entry only if playerXXafd is not zero.
 Note 4: Ignore entry if player option 'IgnoreRp186AFD' is set.
 AFD value xxxx matches a valid or invalid value

AFD data flow

Version 1.12, May 1, 2013

Encoda to AFD (SD)

Value	Description	AFD/AR
Blank	not specified	0000/0
W	16x9	1000/1
16	16x9	1000/1
14	14x9	1011/0
4	4x3	1001/0
1	4x3	1001/0
2	16x9	1010/0
3	14x9	1011/0
5	4x3 protect 14x9	1011/0
6	16x9 prtct 14x9	1011/0
7	4x3 full protect	1001/0
All others		0000/0

Encoda to AFD (HD)

Value	Description	AFD/AR
Blank	not specified	0000/0
W	16x9	1010/1
16	16x9	1010/1
14	14x9	1011/1
4	4x3	1001/1
1	4x3	1001/1
2	16x9	1010/1
3	14x9	1011/1
5	4x3 protect 14x9	1011/1
6	16x9 prtct 14x9	1011/1
7	4x3 full protect	1001/1
All others		0000/0

4x3 coded frame AFD description

AFD	Description
0010	16x9 image as letterbox at top
0011	14x9 image as letterbox at top
0100	>16x9 image as letterbox
1000	4x3 image full frame
1001	4x3 image full frame
1010	16x9 image as letterbox
1011	14x9 image as letterbox
1101	4x3 image with alt. 14x9 center
1110	16x9 image with alt. 14x9 cntr as letterbox
1111	16x9 image with alt. 4x3 center as letterbox

16x9 coded frame AFD description

AFD	Description
0010	16x9 image full frame
0011	14x9 image as pillarbox
0100	>16x9 image as letterbox
1000	16x9 image full frame
1001	4x3 image as pillarbox
1010	16x9 image full frame protected
1011	14x9 image as pillarbox
1101	4x3 image with alt. 14x9 cntr as pillarbox
1110	16x9 image with alt. 14x9 center
1111	16x9 image with alt. 4x3 center

Up conversion description

Name	Description
Anamorphic	Horizontal stretch
Crop	Chop top/bottom, some black side
Full	Chop top/bottom, no black sides
Pillar	Black on sides
other	same as pillar

Down conversion description

Name	Description
Anamorphic	Horizontal squeeze
Crop	Chop sides, some black top/bottom
Full	Chop sides, no black top/bottom
Letter	Black top/bottom
other	same as letter

SD-SD ARC description

Name	Description
Anamorphic	pass
Crop	H stretch, V shrink, chop side, black top/bottom
Full	H stretch, chop sides
Letter	V shrink, black top/bottom
other	pass

1.9

Moved "AFD to VFC" block from Director to MediaPort.

Included per frame AFD as source to up/down conversion mode. (PM-17, PM-132)

Added SD-SD ARC (PM-15)

SD clips with 16x9 AR now ignore VFC and always anamorphic up convert

The 8/0 entry in "AFD to VFC (SD)" changed from pillar to none. This allows the player_up_vfc to select the mode.

The 8/1 entry in "AFD to VFC (HD)" changed from letter to none. This allows the player_down_vfc to select the mode.

Added A/53 AFD to Clip/Frame AFD. (PM-124)

Added player_4x3_afd and player_16x9_afd to "Tap AFD" box. (PM-126)

Up/down converted outputs no longer insert AFD derived solely from player default VFC.

Added clarification to some priority boxes.

1.10

Split out "AFD" box from "Clip/Frame AFD" so that "VFC to AFD" can get AR from valid clip/frame AFD.

Replaced column sd/hd with AR in "VFC to AFD"

Converted outputs now always get an AFD.

Added "SD VFC" box in support of new sdArc setting.

sdArc setting went from off/on to off/4x3/16x9 (supports SD-SD arc from 4x3 to 16x9) (old 'on' setting is same as new '4x3' setting)

1.11: Added note 4 regarding ignoring RP186AFD.

1.12: Do not infer AFD on converted outputs (Changed HD AFD and SD AFD tables). Set a native AFD if want AFD output for clips without AFD.