Instructions on how to time incoming sources in NZRB Central Outside Broadcast Vans

Contents:

Timing – CCU Camera's

- Before starting, I would recommend displaying both "waveform" and "vectors" by simultaneously pressing **WFM** and **VECT** buttons on waveform monitor.
- All words in BOLD are buttons, switches or control 'pots' to select or adjust.

Horizontal Phase (HØ)

1) Set 10x 1 to **PREV** (preview)
2) Ensure **EXT REF** light is on (external reference)
3) Select **BLACK** on preview bus (PST i.e. white buttons on vision mixer)
4) Press **MAG** on waveform (magnify)
5) Adjust horizontal position (**WAVE H POS**) on waveform to set diagonal line position
6) Select CCU camera to be timed on preview bus
7) Adjust horizontal position on CCU controller (**H PHASE** pot = HØ) to align the same as black
8) Cut between **BLACK** and camera on preview bus to confirm horizontal phase alignment (Re-adjust if necessary)

Video and Chroma Levels

1) Ensure **MAG** is off on waveform
2) Select **PREV** on 10x1
3) Select camera on preview bus
4) Adjust video level on base station so top of white bar is on 1.0v line
5) Adjust chroma level on base station so bottom of green bar is on 0.3 line
6) Cut between camera and bars to confirm video and chroma level alignment (Re-adjust if necessary)

Sub-carrier Phase (SCØ)

1) Set 10x1 to **PRGM**
2) Select camera on program bus (PGM i.e. orange buttons on vision mixer)
3) Adjust **SC FINE** and/or **SC COARSE** on CCU controller to overlay vectors (line up the dots)
4) Cut between camera and bars to confirm SCØ alignment (Re-adjust if necessary)
5) Double check video and chroma levels as you do the last step, as levels may vary slightly between preview and program. (Re-adjust on base station if necessary)

Problem Solving:
If you find that you cannot set the video or chroma levels to the correct level, you may need to adjust the VDA (Video Distribution Amplifier) to achieve alignment. See the Director or Technical Director if you are unsure about this.

If you see small horizontal coloured lines flashing in the colour bar signal, the HØ may be a long way out of alignment. Or it could be a problem with the reference signal, or return video signal to the base station. See the Director or T/D for assistance.

Timing – Non-CCU Camera's

GVG VDA Video & Chroma Levels

1) Set **EXT REF** on waveform to 'off'
2) Set 10x1 to non-ccu source to be timed (i.e.: **start**, or **back** tower etc)
3) Adjust GVG VDA video level (**GAIN**) so top of white bar is on 1.0v line
4) Adjust GVG VDA chroma level (**EQ**) so bottom of green bar is on 0.3 line

Note: If there is not enough level, try flicking the switch on the GVG VDA to 'up'. Or, if there is a large spike on the leading edge of the white bar, flick the switch down. Use the switch in the position that gives the cleanest bars, while maintaining the levels.

TBC Video and Chroma Levels (Time Base Corrector)

1) Set **EXT REF** on waveform to 'on'
2) Select **PREV** on 10x1
3) Select non-CCU camera on preview bus (you may need to do this via router or 8x1 sub-selector)
4) Adjust video **LEVEL** on TBC so top of white bar is on 1.0v line
5) Adjust **CHROMA** level on TBC so bottom of green line is on 0.3v line
6) Cut between non-CCU camera and bars to confirm alignment

Horizontal Phase (HØ) and Black Level

1) Select **BLACK** on preview bus
2) Select **MAG** on waveform
3) Adjust horizontal position on waveform to set diagonal line position
4) Select non-CCU camera on preview bus
5) Adjust HØ on TBC by holding up **2nd F** (2nd function) button and clicking **HØ** button
6) Check black levels by making sure black line is overlaid over 0.3v line (adjust if necessary using **SETUP** button on TBC
7) Cut between **BLACK** and non-CCU camera on preview bus to confirm HØ and black level alignment (Re-adjust if necessary)

Sub-carrier Phase (SCØ)

Set 10x1 to **PRGM**
Select non-CCU camera on program bus
Hold up **2nd F** button on TBC, and click **SCØ** to overlay vectors (line up the dots)
Cut between bars and non-CCU camera on program bus to confirm SCØ alignment (Re-adjust if necessary)
Double check video and chroma levels as you do the last step, as levels may vary slightly between preview and program. (Re-adjust if necessary)

Note:
Most non-CCU cameras do not appear directly on the vision mixer (Start and low/level are the only two that do). You will have to select the other ones (towers etc) on the pre-selector (16x1 router in OB1, or 8x1 in OB2), then select the 16x1 or 8 x 1 on the vision mixer.

Timing – VT's

Panasonic DVC-Pro

Setup

1) Select **BARS** on VT input selector
2) Set 10x1 to **PREV**
3) Ensure **EXT REF** light is on
4) Select **16x1** (OB1) or **8x1** (OB 2) pre-selector on vision mixer preview bus
5) Select **VT** on 16x1 or 8x1
6) Make sure **MAG** is off on waveform monitor
7) Adjust **Video**, and **Chroma** levels using orange, green and red control knobs (DVC-Pro timing control panel). Set video level to 1.0v (top of white bar) and chroma level to 0.3v (bottom of green bar)
8) Record 1 minute of bars on VT
9) Re-cue to start of bars

Horizontal Phase (HØ) and Black Level

10) Select 10x1 to **PREV**, and magnify (**MAG**)
11) Select **BLACK** on preview bus of vision mixer
12) Adjust horizontal position on waveform (**WAVE H** POS) to set diagonal line position
13) Roll VT
14) Select VT on preview bus (via 8x1 or 16x1 pre-selector)
15) Adjust HØ (**H**) on blue and white VT timing controls to match black
16) Check black levels by making sure black line is overlaid over 0.3v line (adjust if necessary using timing controls)
17) Cut between **BLACK** and VT on preview bus to confirm HØ and black level alignment (Re-adjust if necessary)

Video and Chroma Levels

18) Ensure **MAG** is off
19) Select VT on vision mixer
20) Repeat step 7 above

Sub-carrier Phase (SCØ)

21) Set 10x1 to **PRGM**
22) Select VT on vision mixer program bus
23) Adjust **SC** pot on DVC-Pro timing controls to overlay vectors (line up the dots)
24) Cut between VT and bars on 8x1 or 16x1 to confirm SCØ alignment (Re-adjust if necessary)
25) Double check video and chroma levels as you do the last step, as levels may vary slightly between preview and program. (Re-adjust if necessary)

Timing – VT's

Panasonic MII

Setup

1) Select **BARS** on VT input selector
2) Set 10x1 to **PREV**
3) Ensure **EXT REF** light is on
4) Select **16x1** (OB1) or **8x1** (OB 2) pre-selector on vision mixer preview bus
5) Select **VT** on 16x1 or 8x1
6) Make sure **MAG** is off on waveform monitor
7) Pull out drawer at the bottom of the MII to reveal timing controls. Adjust **Video**, and **Chroma** levels. Set video level to 1.0v (top of white bar) and chroma level to 0.3v (bottom of green bar)
8) Record 1 minute of bars on VT
9) Re-cue to start of bars

Horizontal Phase (HØ) and Black Level

10) Select 10x1 to **PREV**, and magnify (**MAG**)
11) Select **BLACK** on preview bus of vision mixer
12) Adjust horizontal position on waveform (**WAVE H** POS) to set diagonal line position
13) Roll VT
14) Select VT on preview bus (via 8x1 or 16x1 pre-selector)
15) Adjust HØ (**H**) on MII timing controls to match black
16) Check black levels by making sure black line is overlaid over 0.3v line (adjust if necessary using timing controls)
17) Cut between **BLACK** and VT on preview bus to confirm HØ and black level alignment (Re-adjust if necessary)

Video and Chroma Levels

18) Ensure **MAG** is off
19) Select VT on vision mixer
20) Repeat step 7 above

Sub-carrier Phase (SCØ)

21) Set 10x1 to **PRGM**
22) Select VT on vision mixer program bus
23) Adjust **SC FINE** and/or **SC COARSE** MII timing controls to overlay vectors (line up the dots)
24) Cut between VT and bars on 8x1 or 16x1 to confirm SCØ alignment (Re-adjust if necessary)
25) Double check video and chroma levels as you do the last step, as levels may vary slightly between preview and program. (Re-adjust if necessary)

Timing – VT's

Beta UVW-1800P

Setup

1) Select **BARS** on VT input selector
2) Set 10x1 to **PREV**
3) Ensure **EXT REF** light is on
4) Select **16x1** (OB1) or **8x1** (OB 2) pre-selector on vision mixer preview bus
5) Select **VT** on 16x1 or 8x1
6) Make sure **MAG** is off on waveform monitor
7) Adjust **Video**, and **Chroma** levels using white remote control box. Set video level to 1.0v (top of white bar) and chroma level to 0.3v (bottom of green bar)
8) Record 1 minute of bars on VT
9) Re-cue to start of bars

Horizontal Phase (HØ) and Black Level

10) Select 10x1 to **PREV**, and magnify (**MAG**)
11) Select **BLACK** on preview bus of vision mixer
12) Adjust horizontal position on waveform (**WAVE H** POS) to set diagonal line position
13) Roll VT
14) Select VT on preview bus (via 8x1 or 16x1 pre-selector)
15) Adjust HØ using **SYNC** pot on front of Beta Player
16) Check black levels by making sure black line is overlaid over 0.3v line (adjust if necessary using timing controls)
17) Cut between **BLACK** and VT on preview bus to confirm HØ and black level alignment (Re-adjust if necessary)

Video and Chroma Levels

18) Ensure **MAG** is off
19) Select VT on vision mixer
20) Repeat step 7 above

Sub-carrier Phase (SCØ)

21) Set 10x1 to **PRGM**
22) Select VT on vision mixer program bus
23) Adjust **SC** pot front of Beta Player to overlay vectors (line up the dots)
24) Cut between VT and bars on 8x1 or 16x1 to confirm SCØ alignment (Re-adjust if necessary)
25) Double check video and chroma levels as you do the last step, as levels may vary slightly between preview and program. (Re-adjust if necessary)

Timing – VT's

Beta BVW-75P

Setup

1) Select **BARS** on VT input selector
2) Set 10x1 to **PREV**
3) Ensure **EXT REF** light is on
4) Select **16x1** (OB1) or **8x1** (OB 2) pre-selector on vision mixer preview bus
5) Select **VT** on 16x1 or 8x1
6) Make sure **MAG** is off on waveform monitor
7) Pull out lower panel on Beta Player to reveal timing controls. Adjust **Video**, and **Chroma** levels. Set video level to 1.0v (top of white bar) and chroma level to 0.3v (bottom of green bar)
8) Record 1 minute of bars on VT
9) Re-cue to start of bars

Horizontal Phase (HØ) and Black Level

10) Select 10x1 to **PREV**, and magnify (**MAG**)
11) Select **BLACK** on preview bus of vision mixer
12) Adjust horizontal position on waveform (**WAVE H** POS) to set diagonal line position
13) Roll VT
14) Select VT on preview bus (via 8x1 or 16x1 pre-selector)
15) Adjust HØ using **SYNC** pot on timing controls on top of lower panel of Beta Player
16) Check black levels by making sure black line is overlaid over 0.3v line (adjust if necessary using **BLACK** pot on timing controls)
17) Cut between **BLACK** and VT on preview bus to confirm HØ and black level alignment (Re-adjust if necessary)

Video and Chroma Levels

18) Ensure **MAG** is off
19) Select VT on vision mixer
20) Repeat step 7 above

Sub-carrier Phase (SCØ)

21) Set 10x1 to **PRGM**
22) Select VT on vision mixer program bus
23) Adjust **SC** pot on timing controls of Beta Player to overlay vectors (line up the dots)
24) Cut between VT and bars on 8x1 or 16x1 to confirm SCØ alignment (Re-adjust if necessary)
25) Double check video and chroma levels as you do the last step, as levels may vary slightly between preview and program. (Re-adjust if necessary)

Timing – VT's

Sony DSR-1000P Hard Disk Recorder

Note: To display timing controls, press **MENU**, then right arrow to expand "setup menu"
Press down arrow to "Video Control", then right arrow to expand. Press down arrow to "Process Control", then right arrow to expand. This menu will give you access to "Video Gain, Chroma Gain, Chroma Phase (sub-carrier), and Black Levels". Highlight the one you want to adjust, then press right arrow to reveal. Use UP and DOWN arrows to adjust each one. Press MENU to return to "Process Control" menu.

Setup

1) Select **BARS** on VT input selector
2) Set 10x1 to **PREV**
3) Ensure **EXT REF** light is on
4) Select **16x1** (OB1) or **8x1** (OB 2) pre-selector on vision mixer preview bus
5) Select **VT** on 16x1 or 8x1
6) Make sure **MAG** is off on waveform monitor
7) Adjust **Video**, and **Chroma** levels using timing controls (described above). Set video level to 1.0v (top of white bar) and chroma level to 0.3v (bottom of green bar)
8) Record 1 minute of bars on VT, then re-cue

Horizontal Phase (HØ) and Black Level

9) Select 10x1 to **PREV**, and magnify (**MAG**)
10) Select **BLACK** on preview bus of vision mixer
11) Adjust horizontal position on waveform (**WAVE H** POS) to set diagonal line position
12) Roll VT, and select VT on preview bus (via 8x1 or 16x1 pre-selector)
13) Adjust HØ using timing controls
14) Check black levels by making sure black line is overlaid over 0.3v line (adjust if necessary using timing controls)
15) Cut between **BLACK** and VT on preview bus to confirm HØ and black level alignment (Re-adjust if necessary)

Video and Chroma Levels

16) Ensure **MAG** is off
17) Select VT on vision mixer
18) Repeat step 7 above

Sub-carrier Phase (SCØ)

19) Set 10x1 to **PRGM**
20) Select VT on vision mixer program bus
21) Adjust **SC** using timing controls to overlay vectors (line up the dots)
22) Cut between VT and bars on 8x1 or 16x1 to confirm SCØ alignment (Re-adjust if necessary)
23) Double check video and chroma levels as you do the last step, as levels may vary slightly between preview and program. (Re-adjust if necessary)

Timing – VT's

Fast Forward Video Digideck

Note: To display timing controls, press **DISK** on touch screen, then press **PLAYBACK**.
Ensure **GENLOCK** is set to "on".
Press H Sync Pos **SET**, then turn the shuttle control to adjust horizontal phase. Press **OK** when aligned.
Press SC Phase **SET**, then turn the shuttle control to adjust sub-carrier. Press **OK** when aligned.
To exit menu press Ω symbol on top right of touch screen

Setup

1) Select **BARS** on VT input selector
2) Set 10x1 to **PREV**
3) Ensure **EXT REF** light is on
4) Select **16x1** (OB1) or **8x1** (OB 2) pre-selector on vision mixer preview bus
5) Select **VT** on 16x1 or 8x1
6) Make sure **MAG** is off on waveform monitor
7) Adjust **Video**, and **Chroma** levels using timing controls (described above). Set video level to 1.0v (top of white bar) and chroma level to 0.3v (bottom of green bar)
8) Record 1 minute of bars on VT, then re-cue

Horizontal Phase (HØ) and Black Level

9) Select 10x1 to **PREV**, and magnify (**MAG**)
10) Select **BLACK** on preview bus of vision mixer
11) Adjust horizontal position on waveform (**WAVE H** POS) to set diagonal line position
12) Roll VT, and select VT on preview bus (via 8x1 or 16x1 pre-selector)
13) Adjust HØ using **SYNC** pot on front of Beta Player
14) Check black levels by making sure black line is overlaid over 0.3v line (adjust if necessary using timing controls)
15) Cut between **BLACK** and VT on preview bus to confirm HØ and black level alignment (Re-adjust if necessary)

Video and Chroma Levels

16) Ensure **MAG** is off
17) Select VT on vision mixer
18) Repeat step 7 above

Sub-carrier Phase (SCØ)

19) Set 10x1 to **PRGM**
20) Select VT on vision mixer program bus
21) Adjust **SC** pot front of Beta Player to overlay vectors (line up the dots)
22) Cut between VT and bars on 8x1 or 16x1 to confirm SCØ alignment (Re-adjust if necessary)
23) Double check video and chroma levels as you do the last step, as levels may vary slightly between preview and program. (Re-adjust if necessary)