Wings Insertion Option (+WINGS)

Manual Supplement

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Option ▣➡

Overview

This manual supplement provides descriptions and operating instruction for the +WINGS Option available as an option on new Cobalt® FUSION3G® (9900-Series) cards, and as a purchased field-installed licensable feature upload.

+WINGS Option Functional Description

(See Figure 1.) Option +WINGS allows a symmetrical L-R wings insertion to be integrated into the card program video output. Wings video is accommodated using a separate wings SDI input. The wings user interface displays wings timing relative to the card output video, allowing wings timing offset to be adjusted such that wings can be properly framed. (The option and its host card does not provide timing offset control of the wings video; offset must be provided by a external frame sync card or device controlling the wings video feed.) The program video input when using wings accommodates either an SDI or an analog video input (when equipped with analog video in option); wings input is SDI only.

The wings L/R insertion width can be manually configured, or can be set to automatically track with aspect ratio as set by the host card (on cards equipped with aspect ratio control).

Program Video — 525i 5994 — PGM VID IN — **9901-UDX Scaler +WINGS** — 720p 5994 — **Program Video w/ Wings SDI OUT**

Wings SDI IN

Wings Video — 720p 5994 — **Frame Sync w/ Offset**

House Ref

Notes: • Wings video format must match output format.
  • Both program video and wings video must be frame-synced to same ref source.
  • Wings video requires separate frame sync card/device with advance timing capability.

With +WINGS option, a separate SDI input accommodates the wings video input. In this example, a 9901-UDX allows 525i 5994 program material to be up-converted to 720p 5994 (along with the 16:9 aspect ratio of this format).
With a 4:3 SD program material active area aspect ratio being retained, the wings fill can be inserted in the left and right image areas of the 16:9 output video.
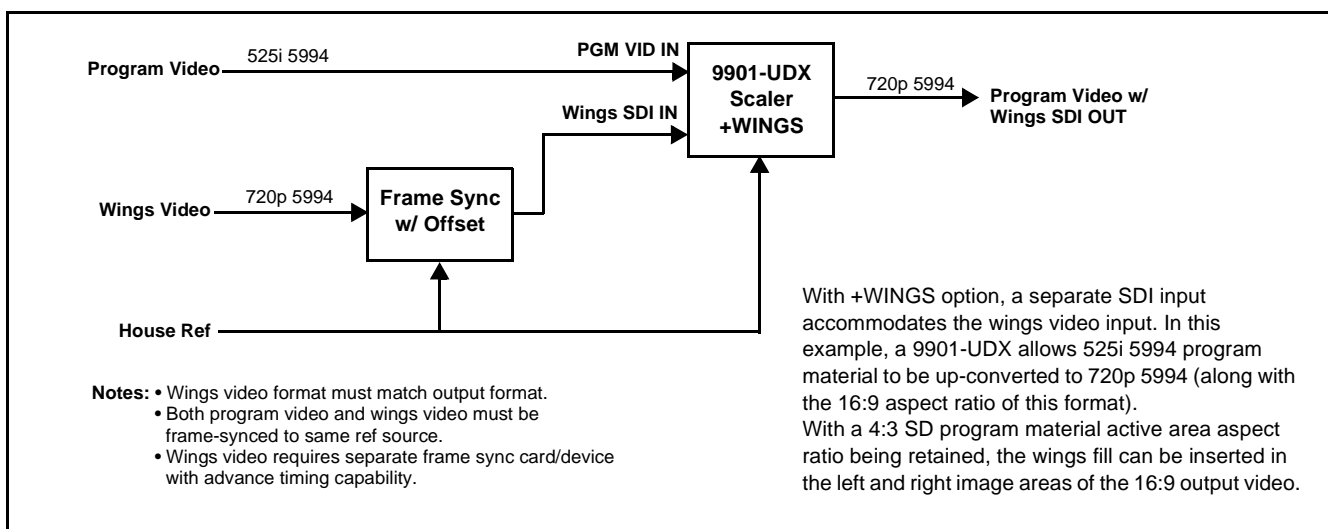
Figure 1 Wings Insertion on Up-converted SD-SDI

+WINGS Input Routing and Rear I/O Module Choices

(See Figure 2.) Because the +WINGS option requires a separate wings SDI input on the host card, a Rear Module having a spare SDI input (which serves as the wings input for cards licensed for +WINGS) is required. Consult "Rear Modules" in card Product Manual for rear module assortment and descriptions.
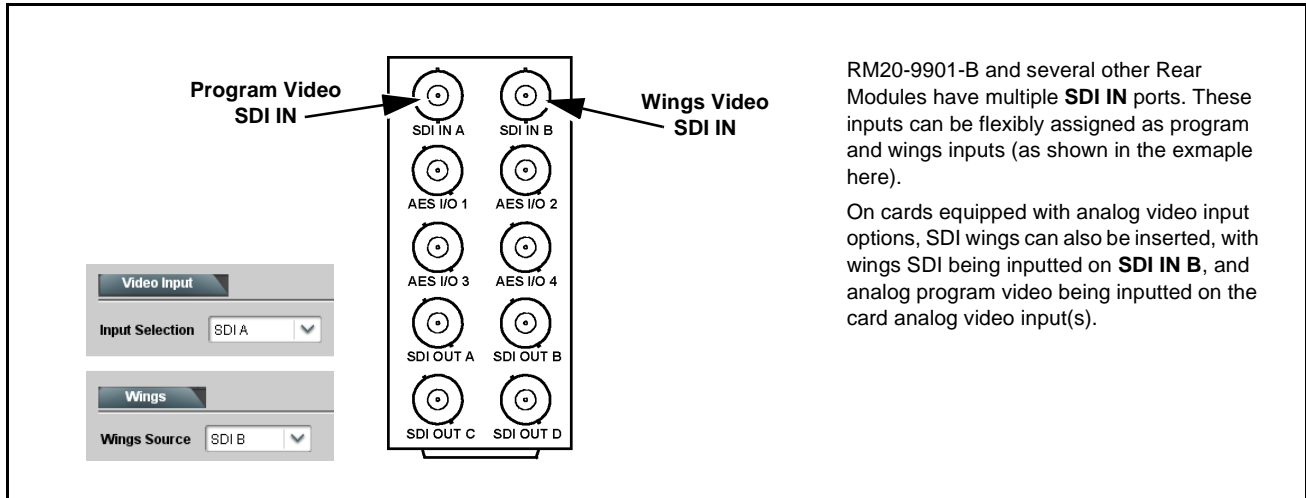

RM20-9901-B and several other Rear Modules have multiple **SDI IN** ports. These inputs can be flexibly assigned as program and wings inputs (as shown in the exmaple here).

On cards equipped with analog video input options, SDI wings can also be inserted, with wings SDI being inputted on **SDI IN B**, and analog program video being inputted on the card analog video input(s).

Figure 2 Typical Rear Module and Connections For Wings Insertion

Uploading Option Feature (Field Upgrade Only)

Note: • If your FUSION3G® card was purchased with the option(s) covered here, this procedure is not required for your card. If you have purchased this feature to be field-installed on an existing card, perform the upload procedure here to upload the feature key file sent by Cobalt, and to activate the feature on your card.

• To order features and obtain a license key, contact Cobalt® sales at sales@cobaltdigital.com or at the contact information on the cover of this supplement. Please provide the Serial Number of your card (displayed in the Card Info pane) when contacting us for your feature key. Typically, a feature is tied to the card's serial number and will only work with that card. Please indicate if upgrades are needed for more than one card.

Activate licensable feature as described below.

1. Cobalt typically supplies a .bin file (by e-mail; file size < 10kB) that activates the licensable feature. Download this file to a convenient location on the PC connected to the card's frame.

Note: During this procedure, the card will go offline while the feature is installed. Make certain card is not carrying OTA signal.

2. In DashBoard for the card being upgraded click the **Upload** button and browse to the feature license file (in the example below, license_cobalt_SN315909_9901-UDX.bin).
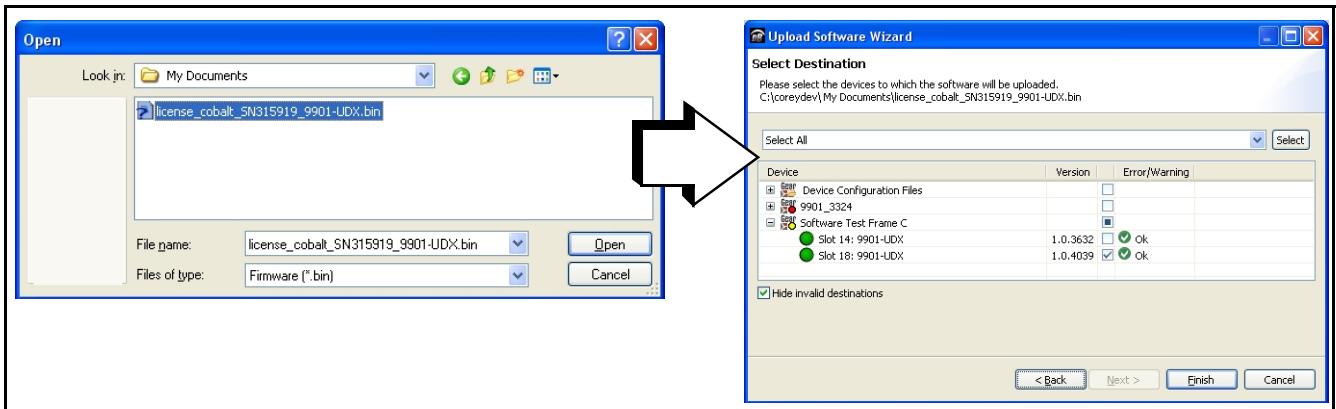
3. Select the file, click **Open** and then follow the prompts. With intended card selected ("Slot 18 UDX-9901" in example above), click **Finish**. When the card comes back online, the feature appears in the DashBoard controls and is ready for use.

Note: Applying the licensable feature has no effect on prior settings. All control settings and drop-down selections are retained.

Note: Added features, when first appearing after installation, are set to their factory default states. For features having a direct impact on the output signal, all controls are initially set to disabled or null.

Wings Controls and Examples

Table 1 individually lists and describes typical Wings controls available using DashBoard™ for FUSION3G® cards equipped with the +WINGS option.

Table 1   +WINGS Option Control List and Descriptions
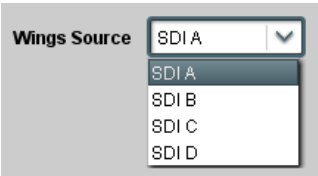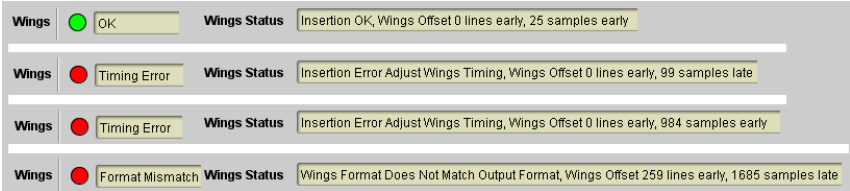
	Provides wings insertion/width controls and displays insertion status.
Option ⬅ **Wings** controls described below only appear on cards with +WINGS licensed optional feature. This feature requires a Rear Module that accommodates a separate wings video input.	
• **Wings Source Control**	Selects the card SDI input video port to serve as the card's wings source. **Note:** • Choices shown here are examples only. Card may not have full complement shown. • SDI inputs selected must be used with Rear I/O Module correspondingly equipped with intended input ports.

Table 1   +WINGS Option Control List and Descriptions — continued

Wings	**(continued)**
• **Wings Insertion Enable Control** Wings Enable [Enabled]	Enables or disables wings insertion into the output video. **Note:** For conditions where wings is not intended to be inserted, make certain this control is set to Disabled.
• **Wings Width Mode Control** Wings Adjustment [Manual ▼] Manual Follow Scaler	Selects wings width control from the choices shown to the left and described below. **Manual:** Wings L/R width is set using Wings Width manual control (see below). **Follow Scaler:** Wings width automatically tracks with Scaler aspect ratio control settings (as configured on wings host card). **Note:** • Follow Scaler choice only appears when host card is equipped with the Scaler tab/function (e.g., 9901-UDX host card). • This function only tracks ARC settings applied locally on the host card Scaler tab. Incoming AFD (if any) or custom ARC performed on an upstream card/device is not recognized by this function.
• **Wings Manual Width Control** Wings Width (pixels) ⊙ 0	When **Manual** is selected above, allows symmetrical L/R wings insertion width, from none to widths extending into active image area if desired. (0 to 300 pixel range; null = 0)
• **Wings Status Displays**	Displays wings timing status (on both Wings tab and Card Status displays) as described below. **Note:** • Wings timing is a function of the wings frame sync card/device. Ideal wings timing is **within 0 to 200 samples early** of output video timing. Wings timing cannot be controlled on host card wings inserter. • Error in wings timing will result in loss of wings (however, program video image will not be corrupted).

Wings	🟢 OK	Wings Status	Insertion OK, Wings Offset 0 lines early, 25 samples early	Wings insertion within target 0-200 samples early
Wings	🔴 Timing Error	Wings Status	Insertion Error Adjust Wings Timing, Wings Offset 0 lines early, 99 samples late	Wings insertion late
Wings	🔴 Timing Error	Wings Status	Insertion Error Adjust Wings Timing, Wings Offset 0 lines early, 984 samples early	Wings insertion too early
Wings	🔴 Format Mismatch	Wings Status	Wings Format Does Not Match Output Format, Wings Offset 259 lines early, 1685 samples late	Wings video wrong/mismatched format

• **Suppress Wings Warning Control** Suppress Wings Registration Warning [Enabled]	Enables or disables wings vertical alignment error message/status display, allowing nuisance error messages to be suppressed while performing setup.

Wings Setup Example

Figure 3 shows an example of inserting 720p 5994 wings into program material set for a 720p 5994 format output. Note that the wings insertion timing is controlled by the wings path framesync card/device.
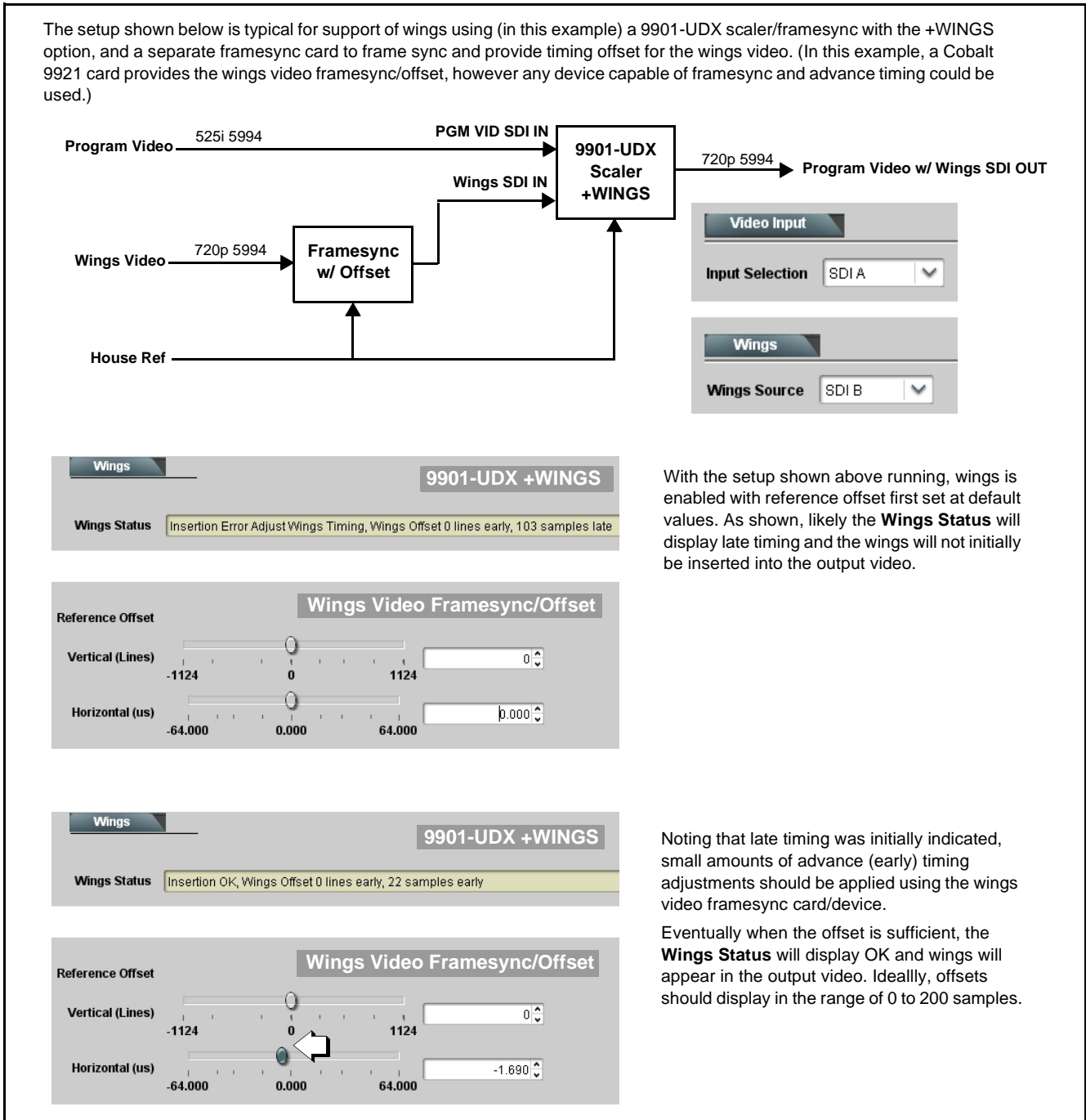
The setup shown below is typical for support of wings using (in this example) a 9901-UDX scaler/framesync with the +WINGS option, and a separate framesync card to frame sync and provide timing offset for the wings video. (In this example, a Cobalt 9921 card provides the wings video framesync/offset, however any device capable of framesync and advance timing could be used.)

Program Video — 525i 5994 — PGM VID SDI IN

9901-UDX Scaler +WINGS

720p 5994 — **Program Video w/ Wings SDI OUT**

Wings SDI IN

Wings Video — 720p 5994 — **Framesync w/ Offset**

House Ref

Video Input

Input Selection — SDI A

Wings

Wings Source — SDI B

Wings — **9901-UDX +WINGS**

Wings Status — Insertion Error Adjust Wings Timing, Wings Offset 0 lines early, 103 samples late

With the setup shown above running, wings is enabled with reference offset first set at default values. As shown, likely the **Wings Status** will display late timing and the wings will not initially be inserted into the output video.

Wings Video Framesync/Offset

Reference Offset

Vertical (Lines) — -1124 — 0 — 1124 — 0

Horizontal (us) — -64.000 — 0.000 — 64.000 — 0.000

Wings — **9901-UDX +WINGS**

Wings Status — Insertion OK, Wings Offset 0 lines early, 22 samples early

Noting that late timing was initially indicated, small amounts of advance (early) timing adjustments should be applied using the wings video framesync card/device.

Eventually when the offset is sufficient, the **Wings Status** will display OK and wings will appear in the output video. Ideallly, offsets should display in the range of 0 to 200 samples.

Wings Video Framesync/Offset

Reference Offset

Vertical (Lines) — -1124 — 0 — 1124 — 0

Horizontal (us) — -64.000 — 0.000 — 64.000 — -1.690

Figure 3 Wings Timing Setup Using Wings Video Framesync Device

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