

# *DD35 User Note : Audio Follow Video*

## Ch Almeras



All the DD35 series switchers include the *Audio Follow Video* option as standard.

This will be especially helpful when a Video Switcher is installed in an environment where it is used for both production and continuity.

In continuity, the Video Switcher and Audio Mixer will be handled by only one operator, or by automation.

In a simple regular production (e.g. news), the Video Switcher and Audio Mixer can be handled by only one operator. For more complex productions the work can be split for two (or more) operators with disabled Audio Follow Video function.

Another typical uses are sports events like ski runs, car or motorcycle races, etc... where a lot of cameras are used along the track. To transport the atmosphere of such an event, each camera has an associated microphone. Of course, the sound from this microphone should be on-air when the image is on-air. To see and hear the action (e.g. spectacular sideslip of a ski runner, Schumacher overtaking Hakkinen...). To perform a manual mix is then a nearly impossible task.

The Audio Follow Video function is the best answer of the DD35 to this kind of job.

Note: Some terms are used in different ways in audio and video worlds. So, all along this document those terms are firstly defined and then always printed Bold to warn the reader about a signification that can be slightly different of its usual use.

- **Functionality.**

The Audio Follow function works with the Audio Mixer controlled by the Video Switcher. Each **Video Input** can have a group of one or several **Audio Sources** (physical inputs of the Audio Mixer) linked to it. This group is named **Audio Input** into the DD35 menu.

There is up to 64 **Audio Input**, and a single one can be linked to several **Video Inputs**.

Each time a **Video Input** goes on air, the corresponding **Audio Sources** are fade in, and the **Audio Sources** previously in are fade out.

Both Video Switcher and Audio Mixer work on a **Preset / Program** basis. So, when a transition is performed on the Video Switcher, the Audio Mixer will follow with a cross fade between the two **Audio Inputs** (i.e. the two groups of **Audio Sources**).

This function is performed on one ME (ME1...ME3 or PP) of the Video Switcher. This "controlling" M/E can be selected in the Config/Ebox/Audio menu.

The **Preset** and **Program** selections of the Audio Mixer – which normally follow the "controlling" M/E -can be overwritten directly on the panel of the DD35. This can be done by using External Auxes. Two of those 15 buses can be selected to remote the Audio Mixer on **Audio Input** base. Each button of those Ext. Aux buses are then assigned to an **Audio Input** and switching it on the Audio **Program** bus will fade the corresponding **Audio Sources** in. The selection of the Audio **Preset** bus works in the same way, and the transition between them (audio **Program** and **Preset**) can be performed on the Audio Mixer.

- Hardware and Software requirements.

Any DD35 with software version from 1.6.0 version can do the Audio Follow job. A free RS422 port on the E-Box (Ports 1 to 10 – Sub D 9 female connector) is required.

The cable is a regular RS422 cable (pins 1, 2, 3, 7, 8 straight cabled).

The Audio Mixer must accept the ESAM2 protocol commands.

Such are (non-exhaustive list):

- Graham Patten – D/ESAM serie.
- SONY –
- Yamaha – 03D.
- Zaxcom.

Some interfaces transform ESAM2 into others protocols.

- Digital Solutions BVE02 ([www.aspen-media.com](http://www.aspen-media.com))
- JL Cooper DAFV2 ([www.jlcooper.com](http://www.jlcooper.com)).

Thanks to those interfaces more mixers can be controlled :

- Ramsa WR-DA7
- Tascam TM-D8000
- Yamaha 02R, 01V
- Mackie D8B

- Typical installation.

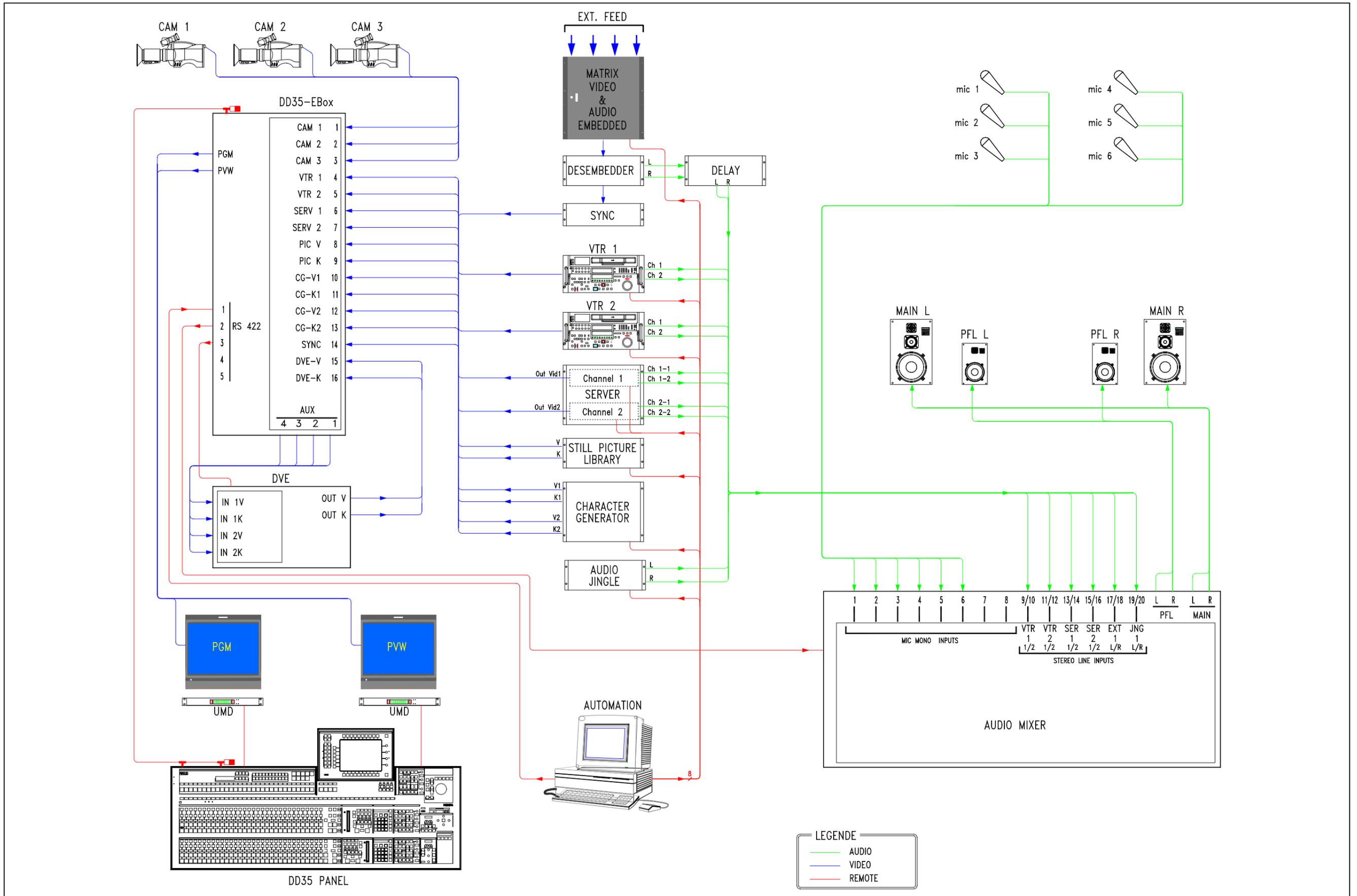
The following drawing (next pages) describes a typical installation with an automation system that handles the system for continuity use, or that can be driven by a single operator for a basic news show:

- Cameras and microphones in the studio.
- VT's and Servers with their sounds.
- External feed with embedded audio.
- Video only source: still picture library and character generator.
- Audio only source: jingle player.
- DVE : a two windows effect with both camera and external feed pictures and audio's.

The installation here includes an automation process, which controls the switcher and the different sources (VT's, servers, feed routing, characters generator, still picture library, audio jingle machine).

The switcher controls, in his turn, the audio mixer that follows the video selections.

The automation can be disabled in order to work only manually on the switcher.



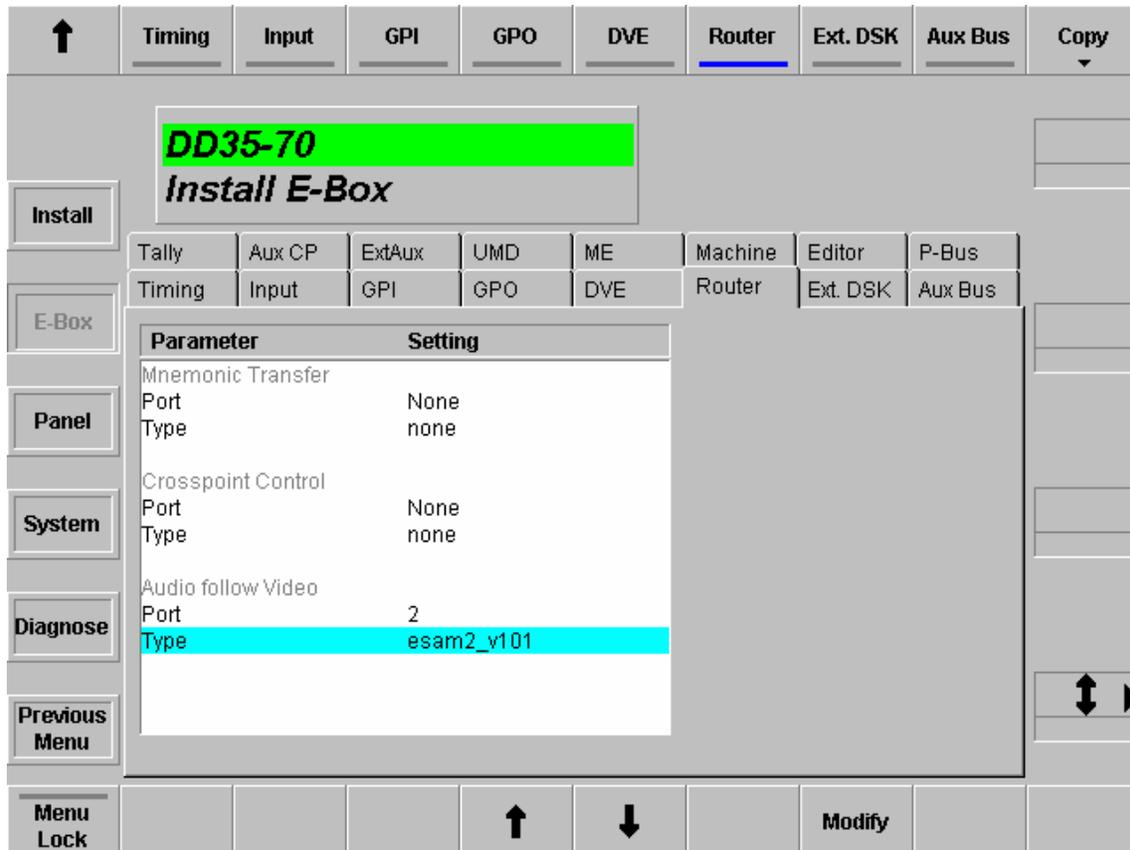
- Set-Ups.

- DD35 set-ups:

The connection with the audio mixer is set up in the Install/E-Box/Router menu:

Port number (1 to 10 on the E Box).

Protocol Type (only "esam2\_v101" for time being).



The **Audio Inputs**, each with several related **Audio Sources**, must also be set-up (in the Config/E-Box/Audio menu).

A single **Audio Source** can be used by several **Audio Inputs**.

The following table describes the 8 **Audio Inputs** to be declared for our example.

Audio Input	Audio sources	Audio Signal	Controlled by video #	Video signal	Note
1	1	Mic 1	1	Cam 1	Any cam opens all microphones
	2	Mic 2		2	
	3	Mic 3	3	Cam 3	
	4	Mic 4			
	5	Mic 5			
	6	Mic 6			
2	9	VTR1 left	4	VTR1	VTR1 Left and right fade in
	10	VTR1 right			
3	11	VTR2 left	5	VTR2	VTR2 Left and right fade in
	12	VTR2 right			
4	13	Server 1 left	6	Server 1	Server 1 Left and right fade in
	14	Server 1 right			
5	15	Server 2 left	7	Server 2	Server 2 Left and right fade in
	16	Server 2 right			
6	19	Jingle left	8	Pict. Library	The jingle machine is coupled to the still pictures library
	20	Jingle right			
7	17	External left	14	Synchronizer	1 frame delayed external Left and right fade in
	18	External right			
8	1	Mic 1	15	DVE Vid.	When used, the DVE should fade in all microphones and the external audio because It has a 2 windows effect (double box) which shows people on stage talking With people outside.
	2	Mic 2			
	3	Mic 3			
	4	Mic 4			
	5	Mic 5			
	6	Mic 6			
	17	External left			
	18	External right			

Selecting an **Audio Input** (left column) will display the related **Audio Sources** in the second column. To add a new **Audio Sources**, simply select "Add Sources" soft key and choose it in the pop-up Windows. To remove one, select "Delete Source".

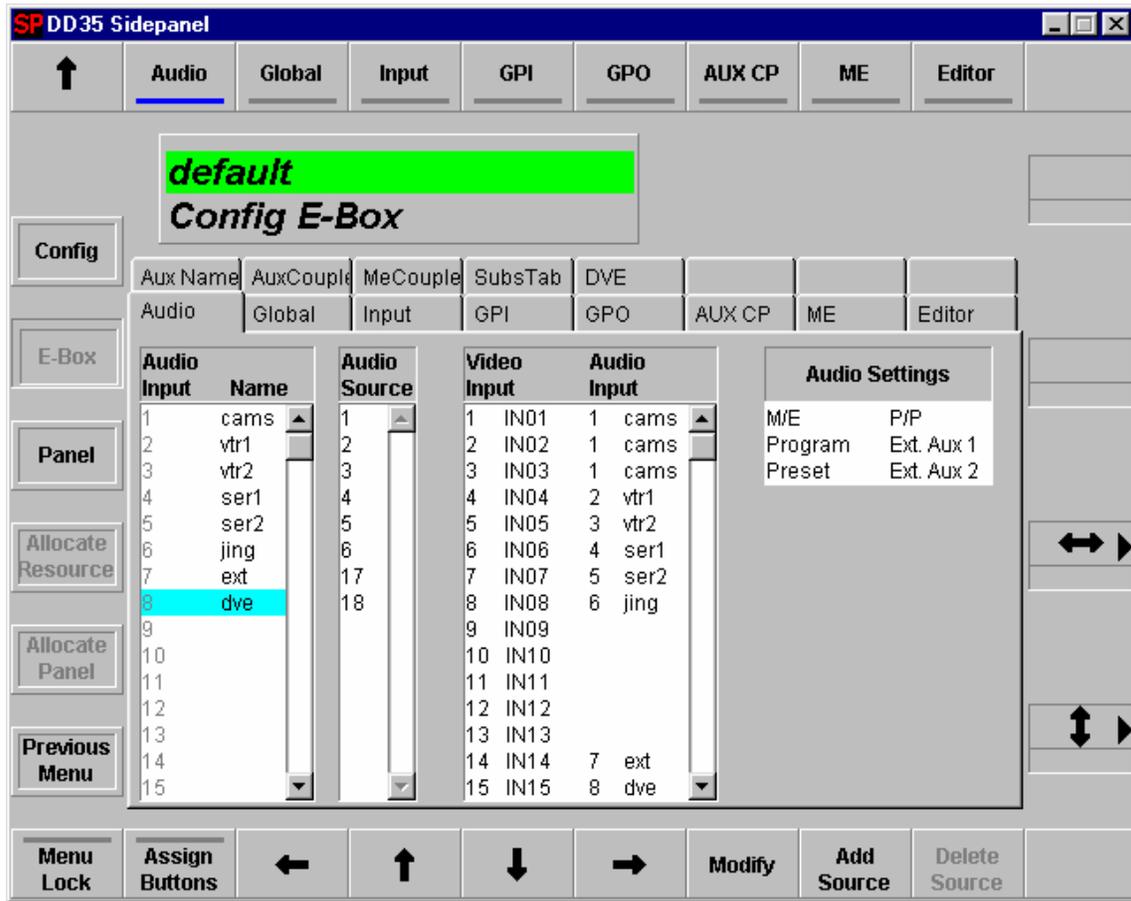
**Audio Inputs** can be named with "Modify" soft key or by a double click on them.

After the **Audio Inputs** are defined, they have to be coupled to **Video Inputs** in the third column with "Modify" or a double click. Only a single **Audio Input** can be coupled to each **Video Input**.

Note: Relevant for the coupling is the physical **Video Input**, i.e. you can re-assign them on any button, keeping the coupled **Audio Input**.

The Audio Settings define which M/E (ME1, ME2, ME3 or PP) and "ext. AUX" bus will control the audio mixer.

Here is an example of this set-up menu (for Audio Input number 8):



- Audio Mixers Set-Ups:

Many mixers have the possibility to be controlled by the ESAM2 protocol : such are Graham Patten, Yamaha, Zaxcom...

The operation setting up of them will of course depend on the manufacturer and model, please refer to the respective manuals to know how to validate the ESAM2 control.

- Protocol Interface Converters:

Some mixers don't have the ESAM2 protocol but another remote control interface. At least two manufacturers sell interface boxes that translate ESAM2 into those protocols:

Aspen Media : Digital Solutions BVE02 and AFV02 specially designed for Yamaha O2R.

JL Cooper : DAFV2 for Ramsa WR-DA7, Tascam TM-D8000, Yamaha 02R, 03D, 01V and Mackie D8B.

Please refer to their manufacturer's documentation for the Set Ups

- Operation

- Basic functions.

With the set-ups done, the operation is very simple and easy. The audio mixer will follow the selection made on the DD35 in accordance with the **Audio Input** table programmed in the DD35 menus.

When a **Video Source** with no corresponding **Audio Input** (such are IN09 to IN13 in our example) is selected, the audio mixer will stay its state.

When a level of a **Audio Source** is manually adjusted on the audio mixer, it will remain modified until the next time it will be selected.

- Enabling/disabling the function.

The Audio Follow Video mode can be disabled either in the switcher (the easiest way is to disable the port in Install/E-Box/Router menu), or in the mixer (the way depends on the model).

- Program/Preset of audio mixer control via Ext Aux Buses.

The **Program** (actual state of the audio mixer) and the **Preset** (future state of the audio mixer – after the transition to come) can be controlled manually from the DD35. The operation "following an M/E" and "manual control" can be parallel. The result, of course, depends on the order of the actions ("the last is winning" - principle).

Due to Ext. Aux. functionality the audio mixer state can be stored into any TiME Memo (SnapShots and TimeLines).

- Limitations.

- The maximum of **Audio Sources** controlled by the DD35 is 32 up to 2.2.x software version, and 64 from 2.3.C.

- Manual transitions (with fader bar) are not handled by ESAM2 protocol.

- Some audio mixers will perform a mute (fade over silence) during the transition if the same **Audio Sources** are selected in both Program and Preset.

- Note about the automation of the DD35.

The control of the DD35 by an Automation system and the Audio Follow are two fully independent functions. But quite often both are used in the same time to achieve a continuity control room. Here are the basics about the configuration of a DD35 to be controlled. If you need more information please refer to the installation and operation manuals.

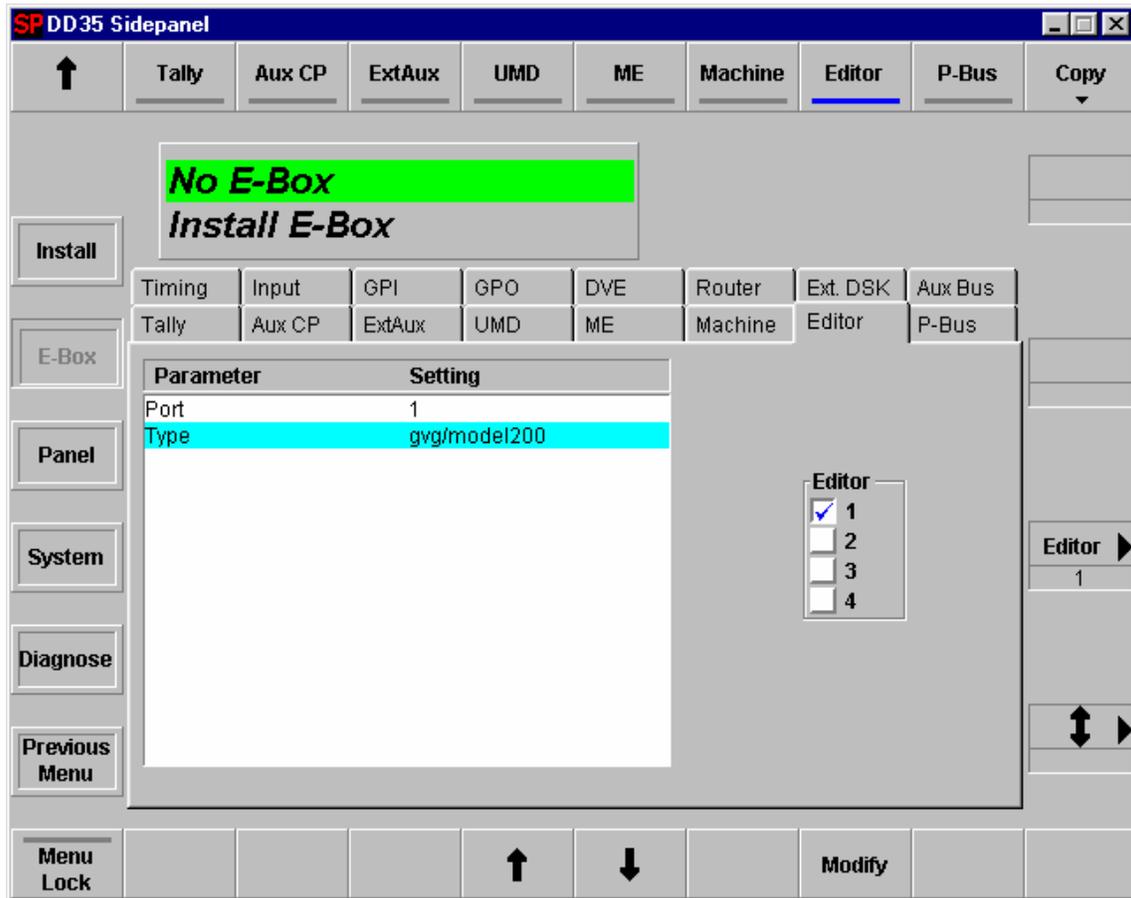
The control of the DD35 by an automation system is based on the editor control.

The DD35 accepts 3 protocols to be remoted:

- GVG200
- DD30
- DD35

The choice will depend on the automation itself.

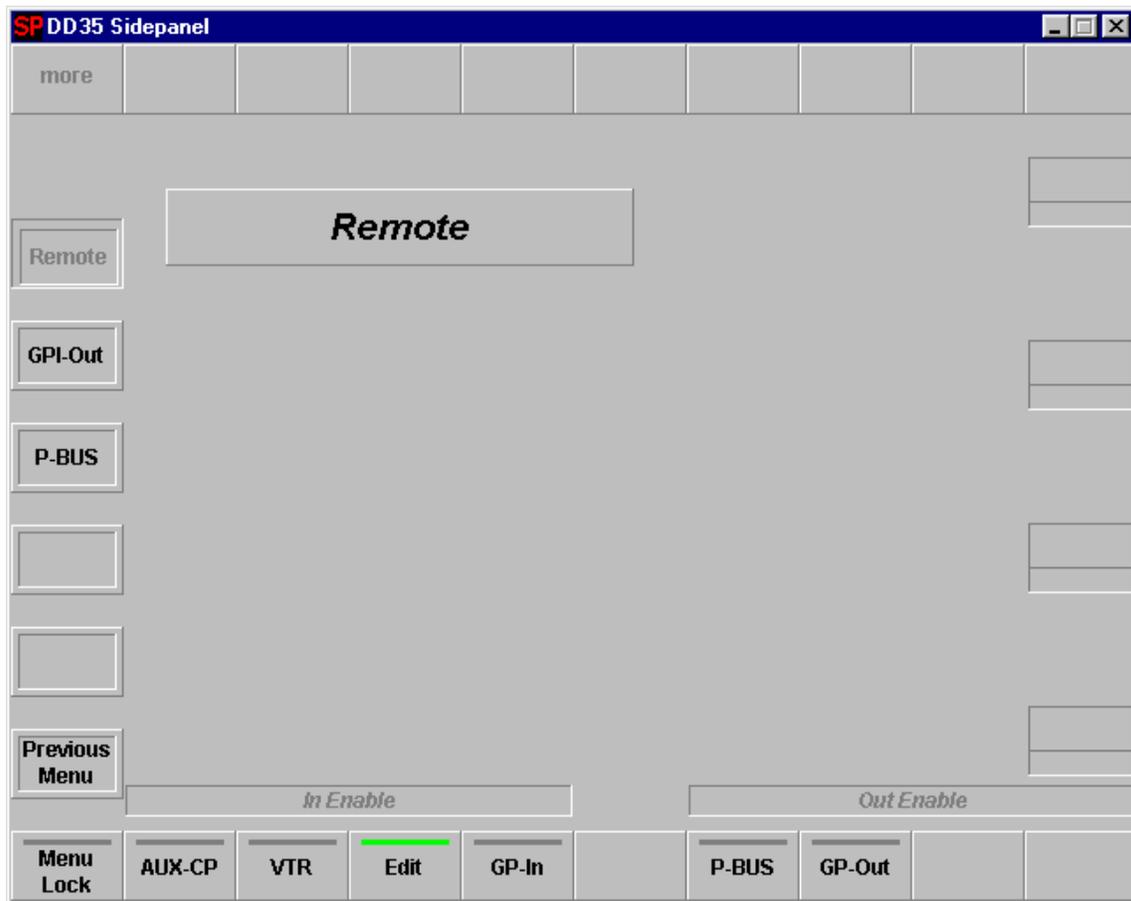
The automation is set up into the Install/E-Box/Editor menu.:



With the DD35 protocol the automation can have full control over the switcher. On the other hand some automation systems are limited and only able to address a specific M/E (often M/E1).

Using the Config/E-Box/Editor menu, it is possible to divert (remap) the control to another M/E (e.g. P/P) that will then receive and execute the commands. A similar remapping can be done for the aux buses.

The control is enabled/disabled with the "Edit Enable" button in the aux bus subpanel, or in the Remote menu under In\_Enable.



- Conclusion

The Audio Follow Video is a very powerful tool that will help a lot in many cases. Combined with Editor remote, Media Player control, GPI's In/Out, P-Bus... it will help you on transforming your DD35 switcher into the "Control Tower" of your control room.

- Disclaimer

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