

Rubidium Series TCC70XS Series Standalone Systems

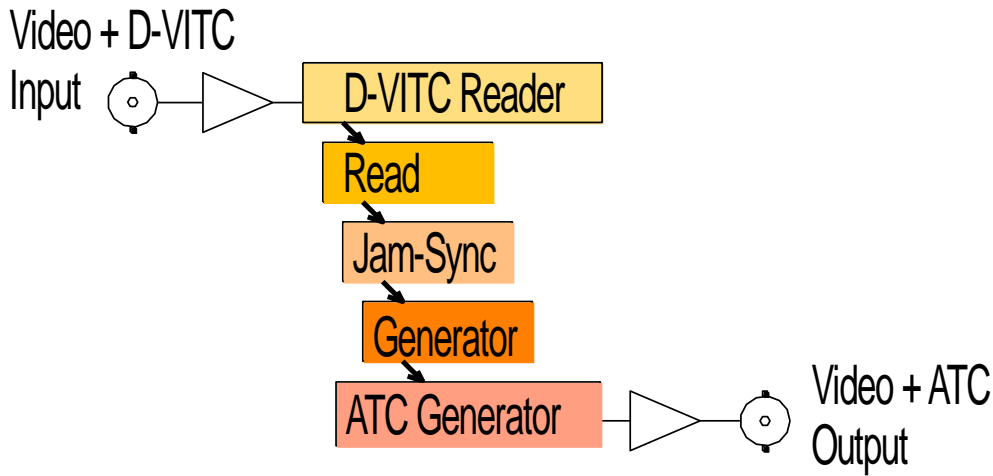


D-VITC to ATC Converter

Rubidium XT/XV and TCC70XS Application Note
Revision: 2.3
February 7, 2024



The following description walks you through the installation and the basic set-up process for your special application of an **XT/XV** Rubidium module.



Select the module according to the video standard you are using:

- XT: 3G or HD or SD digital video.
- XT: 3G or HD or SD digital video.

Please remember that D-VITC is specified for SD digital video only!

Step 1:

Load Factory Settings: Preset a Basic Configuration

Activate the **Profile** page and select: Profile: **Factory Settings**

Click on the **OK** button.



Step 2:

Activate/Deactivate Functions

Activate the **Functions** page and activate/deactivate as shown:

D-VITC Read	Jam	Generate	D-VITC Generate	ANC Generate	Video
Connection	Functions	Profile	System	Keys	Read
	Edit		Use		
System	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
Keys	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
Read	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
LTC Read	<input type="checkbox"/>		<input type="checkbox"/>		
D-VITC Read	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
ANC Read	<input type="checkbox"/>		<input type="checkbox"/>		
Jam	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
Generate	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
LTC Generate	<input type="checkbox"/>		<input type="checkbox"/>		
D-VITC Generate	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
ANC Generate	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
Link	<input type="checkbox"/>		<input type="checkbox"/>		
Video	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
Insert	<input type="checkbox"/>		<input type="checkbox"/>		
Serial	<input type="checkbox"/>		<input type="checkbox"/>		

- We suggest that you deactivate the **Use** check-boxes of all functions you are presently not using.
- We suggest that you deactivate the **Edit** check-boxes of all functions after the installation process. That avoids unintentional operating and malfunctions.

Step 3:

D-VITC Time Code Reader Configuration

Activate the **D-VITC Read** page and select:

Frame Rate: If you have always the same frame rate at the input (24/25/30/30 drop), please fix it accordingly. Frame rate of time code input should be equal to the frame rate of time code output and equal to the picture rate of the video signal. If you are working with different video formats (NTSC, PAL), select "Auto", in this case the frame rate of the incoming D-VITC will be detected automatically.

D-VITC Read	Jam	Generate	D-VITC Generate	ANC Generate	Video						
Connection	Functions	Profile	System	Keys	Read						
Frame Rate: <input type="text" value="Auto"/>											
Line Select: <table border="1"> <tr> <td>Mode</td> <td><input type="text" value="All"/></td> </tr> <tr> <td>1st Line</td> <td><input type="text" value="14"/></td> </tr> <tr> <td>2nd Line</td> <td><input type="text" value="14"/></td> </tr> </table>						Mode	<input type="text" value="All"/>	1st Line	<input type="text" value="14"/>	2nd Line	<input type="text" value="14"/>
Mode	<input type="text" value="All"/>										
1st Line	<input type="text" value="14"/>										
2nd Line	<input type="text" value="14"/>										
Threshold: <table border="1"> <tr> <td>Mode</td> <td><input type="text" value="50%"/></td> </tr> <tr> <td>Value</td> <td><input type="text" value="97"/></td> </tr> </table>						Mode	<input type="text" value="50%"/>	Value	<input type="text" value="97"/>		
Mode	<input type="text" value="50%"/>										
Value	<input type="text" value="97"/>										



Step 4:

Time Code Reader Configuration

Activate the **Read** page and select:

Frame Rate: If you have always the same frame rate at the input (24/25/30/30 drop), please fix it accordingly. Frame rate of time code input should be equal to the frame rate of time code output and equal to the picture rate of the video signal. If you are working with different video formats (NTSC, PAL), select "Auto", in this case the frame rate of the incoming time code will be detected automatically.

Priority: All "Off" except **D-VITC Read** with highest priority.

MTD: "Source = Off".

User: "Mode = Off".

D-VITC Read	Jam	Generate	D-VITC Generate	ANC Generate	Video
Connection	Functions	Profile	System	Keys	Read

Frame Rate

Priority

	Off	Low	...	High	
ATC VITC Read	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	High
ATC LTC Read	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	
D-VITC Read	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	
LTC Read	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	...
Telegram 3	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Telegram 2	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Telegram 1	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Low

MTD

Source

User

Mode



Step 5:

Set Sync Mode and Frame Rate of the Time Code Generator

Activate the **Generate** page and select:

Frame Rate: If you are working with one frame rate only, please fix it accordingly. Frame rate of time code output should be equal to the picture rate of the video signal.

If you are working with different video formats, select "Follow Video"; in this case the frame rate of the time code output will follow the picture rate of the video.

Sync: "Video".

Connection	Functions	Profile	System	Keys	Read
D-VITC Read	Jam	Generate	D-VITC Generate	ANC Generate	Video

Frame Rate: 25 Automatic: Follow Video

Sync: Video

PPS: Rising Edge

Generator

Time: 10 : 00 : 00 : 00 Set Time

User: 00000000 Set User

Step 6:

Activate the Jam-Sync Mode

Activate the **Jam** page and select:

Mode: "Continuous" - if the time addresses of the ATC output should continuously be generated in an up-counting manner.

"Cont. 1 Frame" or "Cont. Wheel" - if the ATC time counter should stop in case of a D-VITC failure or in case of a "still" time code input.

Values: "Time, User".

Use Offset: Not activated – unless you explicitly have to do an offset correction.

Connection	Functions	Profile	System	Keys	Read
D-VITC Read	Jam	Generate	D-VITC Generate	ANC Generate	Video

Mode: Continuous

Values: Time, User

Wheel: 8

Use Offset:

Offset: 00 : 00 : 00 : 00

Single Jam



Step 7:

ATC Generator Configuration

Generate ATC_LTC or ATC_VITC:

Activate the **ANC Generate** page and select:

VITC: If you want to generate ATC_VITC it is recommended to select "On (Standard)".

LTC: If you want to generate ATC_LTC it is recommended to select "On (Standard)".

Connection	Functions	Profile	System	Keys	Read
D-VITC Read	Jam	Generate	D-VITC Generate	ANC Generate	Video

ATC		Line	TC Bypass	All Fields
LTC	Off	10	<input type="checkbox"/>	<input type="checkbox"/>
VITC	On (Standard)	9	<input type="checkbox"/>	<input checked="" type="checkbox"/>
All ATC	Mark for Deletion		<input type="checkbox"/>	

SMPTE 12M recommendations for ATC locations:

ATC_LTC, inserted on digital standard definition (SD) 525/60: V-ANC, line 13.

ATC_LTC, inserted on digital standard definition (SD) 625/50: V-ANC, line 9.

ATC_LTC, inserted on digital high definition (HD): H-ANC, line 10.

ATC_VITC, inserted on digital standard definition (SD) 525/60: V-ANC, line 13.

ATC_VITC, inserted on digital standard definition (SD) 625/50: V-ANC, line 9.

ATC_VITC, inserted on digital high definition (HD): H-ANC, line 9.

TC Bypass:

Checking **TC Bypass** will activate the following automatic: Only in case that there is no ATC_LTC or ATC_VITC present in the incoming video, the ATC_LTC or ATC_VITC generator will insert a new one. If there is already a ATC_LTC or ATC_VITC, then no new ATC_LTC or ATC_VITC will be inserted.

Mark for Deletion:

Checking this box will mark all ATC data packets for deletion. The data packets are still present and at the same location, but the data content will not be evaluated anymore. The ATC Generator is able to insert new ATC data packets into this modified data stream.



Step 8:

Optionally: Remove D-VITC out of the Video Channel

Activate the **D-VITC Generate** page and select:

Line Select

Mode: Off. No new D-VITC will be generated.

Blanking

Selected lines can be blanked, this removes a D-VITC from the video signal. Select the D-VITC line(s) or a line range.

Connection	Functions	Profile	System	Keys	Read
D-VITC Read	Jam	Generate	D-VITC Generate	ANC Generate	Video

Line Select	
Mode	Off
1st Line	14
2nd Line	14

Blanking	
Mode	Lines
1st Line	14
2nd Line	14

TC Bypass



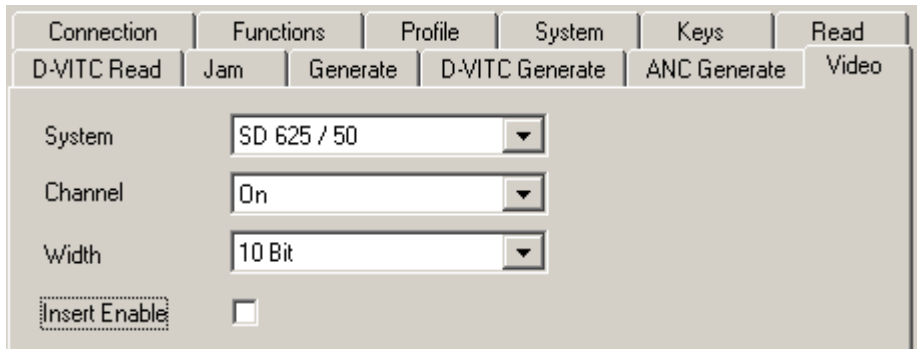
Step 9:

Configuration of the Video Channel

Activate the **Video** page and select:

System: Fix it according to your application.
If you are working with different video formats, select "Auto".

Insert Enable: Check this box only in case you want to have a visible window inserted onto the video screen.



Step 10:

Optionally: Select LED Functions to Watch Status

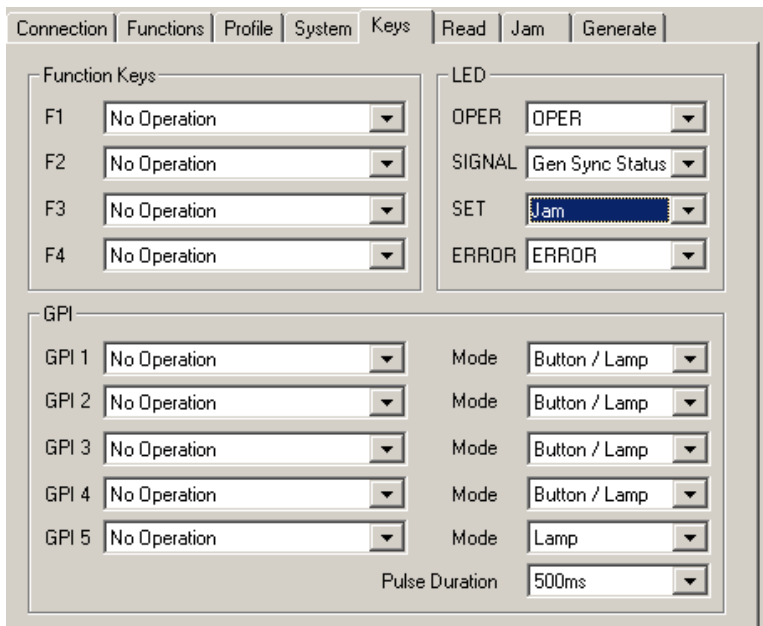
Activate the **Keys** page and select:

LED SIGNAL: "Gen Sync Status" indicates the status of the video synchronization:

- LED lights up during video lock.
- LED flashes slowly during the fine trim procedure.
- LED flashes fast if video synchronization is lost.

LED SET: "Jam" indicates the status of the Jam-Sync mode:

- LED lights up = Generator accepts reader input time code.
- LED flashes = Generator does not accept or receive the reader time code.



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