Application Note DT-AN-2174B-2

DTA-2174B – Migrate from a DTA-2174

1. Introduction

The DTA-2174B was developed as drop-in replacement for the DTA-2174, so in principle migrating your application from using the DTA-2174 to the DTA-2174B is as simple as compiling your code against the latest version of the DTAPI and using the latest drivers. However, the DTA-2174B is based on our latest generation SDI hardware and firmware architecture, which allowed us to add a few new features as well as lowering production costs, so that the DTA-2174B can be offered at a price below that of the DTA-2174. This does also mean there there are some functional differences between the two, one should account for when migrating from the DTA-2174 to a DTA-2174B.

The key differences to account for, are:
- DTA-2174B, is supported through the DtPcie driver;
- DTA-2174B, uses firmware variants (refer to the DT-AN-2174-1 application note for the details).

With the above differences in mind, the recommended recipe for updating your application to support the DTA-2174B is as follows.

Step	Description
1	- Download and install the latest SDK from the DekTec website. NOTE: the DTA-2174B is supported in the SDK release from January 2020 onwards.
2	- Linux users must build and install the DtPcie driver, included with the SDK; - Windows users must install the DtPcie driver as part of the SDK installation process or download and install the separate DtPcie Windows installer.
3	- Update your code to always check at start-up, if the firmware variant with the functionality your application needs is currently active (e.g. variant 2 for quad-link input/output). If not, invoke special code to switch to the firmware variant your application requires (see DT-AN-2174-1, for details on how to switch between variants);
4	- Rebuild your application against the DTAPI library from the just installed SDK.
5	- Your application now supports the DTA-2174B. - When distributing your application, do not forget to include the Dta and DtPcie drivers, so that both the DTA-2174 and DTA-2174B are supported.

A detailed comparison of the functional similarities and differences between the DTA-2174 and DTA-2174B is provided in §2.

2. Comparing the DTA-2174 and DTA-2174B

The DTA-2174B matches the features of the DTA-2174 blow-by-blow and surpasses them in a few places. The blue shaded cells highlight the differences between the two.

Feature	DTA-2174	DTA-2174B
PCI Express	PCIe3 x4	PCIe3 x4
Passively cooled	No, uses fan	Yes
Physical Ports		
Number of bidirectional ports	4	4
Number of genlock ports	1	1
Connector type	DIN 1.0/2.3	micro-BNC
Conversion cable to BNC included	Yes	No[1]
Physical Link Standards		
12G-SDI	No	Yes[2]
6G-SDI	No	Yes[2]
3G-SDI	Yes	Yes
HD-SDI	Yes	Yes
SD-SDI	Yes	Yes
DVB-ASI	Yes	Yes
Video Formats		
2160p23.98/24/25/29.97/30/50/59.94/60	Yes[4]	Yes[2,3]
1080p(sf)23.98/24/25/29.97/30	Yes	Yes
1080p50/59.94/60; 1080i50/59.94/60	Yes	Yes
720p23.98/24/25/29.97/30/50/59.94/60	Yes	Yes
525i/625i	Yes	Yes
4K Multi-Link		
SMPTE-425-5	Yes	Yes[3]
Quadrant method	Yes	Yes
Hardware accelerated[5]	No	Yes
Genlock Support		
Bi-/tri-level	Yes	Yes
Configurable pixel offset	±1 line	±0.5 frame
Driver / API		
Required driver	Dta	DtPcie
Matrix API® 2.0	Yes	Yes
DtInputChannel/DtOutputChannel	Yes	Yes
Miscellaneous		
Minimum end-to-end delay	5 frames	2 frames
Double-buffered outputs	Yes	Yes
Firmware variants[6]	No	Yes

[1] micro-BNC-to-BNC converter cable is sold separately (order code is: DTB-UBNC-BNC).

[2] 6G-SDI and 12G-SDI are, supported in DTA-2174B firmware variants 2 and 3, only for port 1.

[3] SMPTE-425-5 quad-link is supported in DTA-2174B firmware variant 2.

[4] DTA-2174 supports 2160p only with a quad-link 3G interface.

[5] DTA-2174B uses hardware acceleration to convert between a single 4K stream and quad-link 3G.

[6] The available firmware variants are described in detail in application note DT-AN-2174-1.