DTAPI 5.2 Release Notes

Capability Changes

SDK

Feb 2013

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1. Introduction

The February 2013 SDK release integrates advanced software demodulation (using SDR technology) into DTAPI for use with the DTA-2131 I/Q sampler[1]. This initial release has support for DVB-T, DVB-T2, DVB-C2 and ISDB-T demodulation. In future release the software implementation makes it possible to extend the supported standards to create a universal receiver, similar to DekTec's modulator products!

Unfortunately some incompatibilities with older SDK versions had to be introduced:

- *Modulation capabilities have been renamed;*
- *Modulation capabilities have been split into modulator and receiver capabilities.*

This document presents the new organisation of the DTAPI capabilities associated with modulator and receiver functions. Two major components are:

- Separating modulator and receiver capabilities;
- Separating software demodulation in "standard" and "advanced" functions.

2. Separating Modulator and Receiver Capabilities

To avoid confusion when using capabilities for modulators and receivers, modulator and receiver capabilities have been separated (modulation capabilities in previous SDK versions applied both to modulators and to receivers):

- Modulator-specific capabilities get a name starting with "**TX_**";
- Receiver-specific capabilities get a name starting with "**RX_**";
- All old modulator/receiver capabilities (e.g. **DVBT2**) are removed from DTAPI.h.

3. Modulator Capabilities

The names of modulator capabilities are prepended by "TX_".

Capability	Order code	Remarks
CM	DTC-305-CM	
TX_16MHZ	DTC-380-16MHZ	16-MHz bandwidth mode (DTA-2111 only)
TX_ATSC	-	Included in basic product
TX_CMMB	DTC-375-CMMB	
TX_DAB	DTC-376-DAB	
TX_DTMB	DTC-374-DTMB	
TX_DVBC2	DTC-379-C2	
TX_DVBS	-	Included in basic product
TX_DVBS2	DTC-372-S2	Included in DTA-2107 without requiring license
TX_DVBT	-	Included in basic product
TX_DVBT2	DTC-378-T2	
TX_GOLD		
TX_IQ	DTC-371-IQ	
TX_ISDBS	DTC-373-IS	
TX_ISDBT	DTC-370-ISDB	
TX_MH	DTC-377-MH	
TX_QAMA	-	Included in basic product

[1] The DTA-2135 is supported too, but DekTec strongly recommends to use the DTA-2131 for improved performance.

TX_QAMB	-	,, ,, ,, ,,
TX_QAMC	-	,, ,, ,, ,,
TX_T2MI	,, ,, ,,	Enabled by the DTC-378-T2 license

4. Receiver Capabilities

The receiver capabilities (with the exception of **RX_ADV**) indicate the ability of a device to receive a certain modulation standard using the "old" DTAPI interface. Capability **RX_ADV**, which requires a license, enables the "advanced demodulator API". It is only available on receiver devices that can output I/Q samples (at the moment only DTA-2131 and the obsolete but still supported DTA-2135).

The advanced demodulator API supports generation of multiple real-time streams and advanced measurements simultaneously. Each stream can be a data stream, or a stream of measurement values. The streams are generated with callback function provided by the user. Multiple streams can be generated in parallel:

- For DVB-C2 and DVB-T2: multiple PLPs can be generated in parallel (data PLPs can be combined with common PLPs);
- For DVB-T2 a full T2MI can be generated (but not in parallel to one or more PLPs);
- For ISDB-T, layer A, B and C can be demodulated in parallel.

Example: Both DTA-2138 and DTA-2131 have capability **RX_DVBT2**, and offer (largely) the same basic DTAPI functions and statistics but only the DTA-2131 supports **RX_ADV**.

Capability	Order code	**RX_GOLD**	Remarks
RX_ADV	DTC-360-RXA	y	DTA-2131 only; Enables the advanced demodulator API
RX_ATSC	-	y	Included in basic product
RX_CMMB	-	y	,, ,, ,, ,,
RX_DAB	-	y	,, ,, ,, ,,
RX_DTMB	-	y	,, ,, ,, ,,
RX_DVBC2	-	y	,, ,, ,, ,,
RX_DVBS	-	y	,, ,, ,, ,,
RX_DVBS2	-	y	,, ,, ,, ,,
RX_DVBT	-	y	,, ,, ,, ,,
RX_DVBT2	-	y	,, ,, ,, ,,
RX_IQ	DTC-361-IQ	y	DTA-2131 only; Enables reading of I/Q samples. For I/Q sample recording, or special applications, or custom SDR implementations
RX_ISDBS	-	y	Included in basic product
RX_ISDBT	-	y	,, ,, ,, ,,
RX_MH	-	y	,, ,, ,, ,,
RX_QAMA	-	y	,, ,, ,, ,,
RX_QAMB	-	y	,, ,, ,, ,,
RX_QAMC	-	y	,, ,, ,, ,,
RX_T2MI	DTC-362-T2MI	y	Enables reading of a full T2MI stream for DVB-T2
DP	DTC-310-DP	y	DtTV, DtGrabber+
SX	DTC-320-SX	y	StreamXpert
RX_GOLD			Gold upgrade premium of €500 applies for upgrading to RX_GOLD after initial order

As the table shows, most receiver capabilities are not chargeable commercial options and not linked to a license. This means:

- For receivers with hardware demodulator chips, receiver capabilities are linked directly to the modulation standards supported by the receiver chip set.
- For I/Q samplers (DTA-2131) receiver capabilities will be added to the SDK as soon as the corresponding software demodulator becomes available.

4.1. No Backward Compatibility on Compilation Level

The removal of old modulator/receiver capabilities from DTAPI.h breaks backward compatibility on compilation level. To recompile an application that uses DTAPI, all references to old-style capabilities have to be prepended by `TX_` or `RX_`.

4.2. Backward Compatibility on Driver Level

If a user installs a new driver, old applications will continue to run unmodified.