

# TRAINING COURSE

## DVB-T/H fundamentals and product integration

### Who should attend?

This training course is dedicated to TEAMCAST customers and partners who are willing to get knowledge about **DVB-T/H** and to develop expertise the usage and integration of TEAMCAST based DVB-T/H solution. This course is highly recommended especially for new partners or new customers as an excellent preparation **to integrate OEM products such as modulators and receivers.**

### Course objectives

This training course aims at providing basic theoretical and practical knowledge required to integrate TEAMCAST modules within DTV transmitter.

At first, basic understanding of the core technologies involved in DVB-T/H standard is provided. The trainer will in particular focus on introducing Single Frequency Network (SFN) principles, implementation, setting-up and operating.

Second of all, the course covers integration issues of the TEAMCAST modules: interface signal characterization and measurements, configuration adjustment, synchronization mechanisms, etc. This part shall lead the transmitter manufacturer to get the best integration of the DVB-T/H items and therefore to launch faster its own product range.

Finally, the training course also gives key information to understand and to optimize the transmitter set-up and management in both MFN and SFN operating modes. The attendees will learn about how to install, set-up and to maintain TEAMCAST DVB-T/H products.



### Trainer

TEAMCAST training course is led by a technical expert, member of the TEAMCAST customer service. This gives the opportunity to collect rich information about **practical experience** related to TEAMCAST products and environment.

### Duration

This training course usually takes place over **2 days.**

### Number of attendee(s)

Not restricted. For practical reason, a maximum of 5 people is recommended.

### Organization

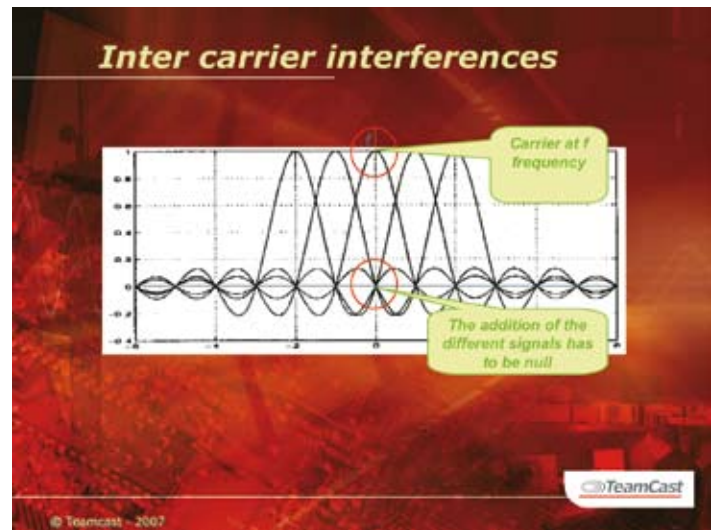
The training session can be located at your own site or at TEAMCAST. It shall be ideally done at the transmitter manufacturer site in order to run the practice directly on the DTV transmitter.

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## DVB-T/H fundamentals and product integration

### Course content

- **1 - DVB-T/H basic understanding**
  - a. Initial requirements and targeted applications
  - b. Generic architecture
- **2 - DVB-T overview**
  - a. COFDM
  - b. Interleaving and Coding
  - c. DVB-T spectrum
  - d. Guard Interval
  - e. Hierarchical mode
  - f. Receiving fundamentals and mechanisms
  - g. SFN principles and implementation
- **3 - DVB-H overview**
  - a. From DVB-T to DVB-H standard
  - b. Time Slicing and Power Saving
  - c. MPE Forward Error Correction
  - d. The physical layer
  - e. DVB-H network architecture
- **4 - 1st level of maintenance**
  - a. Modulator (MOD-2000)
  - b. MIP Inserter (MIP-1000)
  - c. Gap-filler (GFX-3000)
  - d. DVB-T/H receivers (RXH-1000 and POD-1000)
  - e. DVB-T/H end-to-end system architecture (MFN & SFN)
- **5 - Products integration**
  - a. Signal interface characterization
  - b. DVB-T/H signal measurements method
  - c. Configuration and synchronization issues
  - d. Control protocol
- **6 - 1st level of maintenance**
  - a. Operating limits
  - b. Errors and status
  - c. Checking input and output signals
  - d. Basic maintenance operations
  - e. Upgrade and RMA procedures
- **7 - Practical exercises**



**Synthesis tables**  
Bit rates and Carrier-to-Noise ratio:

Modulation	Coding rate	C/N (dB)	Bit rate in Mbit/s			
			$\mu=3/4$	$\mu=2/3$	$\mu=1/2$	$\mu=1/3$
Q-PSK	1/2	3.1	4.95	5.53	5.85	6.03
	2/3	4.9	5.54	7.37	7.81	8.04
	3/4	5.9	7.48	8.29	8.78	9.05
	5/6	6.9	8.29	9.22	9.76	10.05
	7/8	7.7	8.71	9.68	10.25	10.56
16-QAM	1/2	8.8	9.98	11.06	11.71	12.06
	2/3	11.1	12.27	14.75	15.67	16.09
	3/4	12.5	14.83	16.59	17.56	18.10
	5/6	13.5	16.59	18.43	19.52	20.11
	7/8	13.9	17.42	19.35	20.49	21.11
64-QAM	1/2	14.4	14.93	16.59	17.58	18.10
	2/3	16.5	19.91	22.12	23.42	24.13
	3/4	18.0	22.29	24.88	26.35	27.14
	5/6	19.3	24.88	27.65	29.27	30.16
	7/8	20.1	26.13	29.03	30.74	31.67

### Prices & Conditions

- **On site training course:**
  - 2 day training course (unlimited number of trainees): **To be defined with TeamCast Sales department**
  - Excluding travel and accommodation cost
  - Price covers demo materials and training documentation
- **TEAMCAST in-house training**
  - **A price for trainee will be quoted** for the complete 2 day session, including lunch. A minimal of two trainees shall be respected.
  - Price covers demo materials, training documentation, lunch and coffee breaks.
  - Participants are responsible for their own travel and accommodation costs.

For any interest or additional information, please contact [info@teamcast.com](mailto:info@teamcast.com)



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