

Essential Common Public Radio Interface

A 3 day training course



Description

This course is designed to give the delegate a technical overview of the CPRI protocols and link setup. We will explain the industry cooperation to define the key internal interface between the radio equipment control and the radio equipment. Also explained will be the SAP that the CPRI link supports for IQ Interface, frame synchronisation, link control and management and the master and slave ports. We will investigate the CPRI block diagram and together with the data formats and sample mapping solutions.



Key outcomes

By the end of the course delegates will be able to:

- ✓ Explain the CPRI Block diagram, frame format & Protocol stacks.
- ✓ Explain how the synchronisation is compliant with 3GPP & WiMAX requirements
- ✓ Describe the two electrical characteristics of CPRI standard
- ✓ Explain CPRI standards structure and system & Interface definitions
- ✓ List the four standard bit rates of the CPRI.



Training approach

This structured course uses Instructor Led Training to provide the best possible learning experience. Small class sizes ensure students benefit from our engaging and interactive style of teaching with delegates encouraged to ask questions throughout the course. Quizzes follow each major section allowing checking of learning.



Details

Who will benefit?

Anyone looking for a technical overview of the CPRI protocols and link set up.

Prerequisites

None

Duration: 3 days

Overall rating:



Generic training



Generic training complements product specific courses covering the complete picture of all relevant devices including the protocols "on the wire".

"Friendly environment with expert teaching that teaches the why before the how."
G.C. Fasthosts

Small class sizes



We limit our maximum class size to 8 delegates; often we have less than this. This ensures optimal interactivity between delegates and instructor.

"Excellent course. The small class size was a great benefit..."
M.B. IBM

Hands On training



The majority of our courses use hands on sessions to reinforce the theory.

"Not many courses have practice added to it. Normally just the theoretical stuff is covered."
J.W. Vodafone

Our courseware



We write our own courses; courseware does not just consist of slides and our slides are diagrams not bullet point text.

"Comprehensive materials that made the course easy to follow and will be used as a reference point."
V.B. Rockwell Collins

Customise your course



Please contact us if you would like a course to be customised to meet your specific requirements. Have the course your way.

"I was very impressed by the combination of practical and theory. Very informative. Friendly approachable environment, lots of hands on."
S.R. Qinetiq

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Course content

System Description

Subsystems. Nodes. Protocol layers. Protocol data planes. User data planes. Antenna carriers. Service Access Points (SAP). Link. Passive Link. Hop. Multi-hop Connection. Logical Connection. Master Port & Slave Port.

System Architecture

Basic System Architecture & Common Public Radio Interface Definition. System Architecture with a link between Res. Reference configurations: Chain topology, Tree topology, Ring topology. RECs & REs in both chain & tree topology

Functional description

Radio Functionality. Functional Decomposition between REC and RE: For UTRA FDD, For WiMAX & E-UTRA, For GSM. CPRI Control Functionality

Interface Baseline

Interface Specification. Protocol Overview. IQ Data. Synchronisation. L1 Inband Protocol. C & M Data. Protocol Extensions. Vendor Specific Information.

Physical Layer Specifications

Line Bit Rate. Physical Layer Modes. Electrical Interface. Optical Interface. Line Coding. Bit Error Correction/ Detection. Frame Structure. Mapping Methods. Container Blocks. Hyperframes. GSM, UMTS & WiMAX Timing. Link Delay Accuracy & Cable Delay Calibration. Link Maintenance

Data Link Layer (Layer 2) Specification

Layer 2 Framing for Fast & Slow C & M Channels. Medium Access Control/Data Mapping. Flow Control.

Start-up Sequence

General. Layer 1 Start-up Timer. State Description. Transition Description.

Interoperability

Reserved Bandwidth. Version Numbers.

Supplementary Specification Details

Delay Calibration Example. Reference Test Points.

List of Abbreviations & Glossary

What our customers say

"Absolutely brilliant, very knowledgeable and helpful trainer would recommend to teach anyone. Kept me interested 100% of the time which is very impressive as this does not happen often, if at all!"

O. B. Network Rail

"The best technical course I've been on!"

L. W. Fujitsu Telecoms Europe

"Very well thought out and structured course. Would recommend 100%. Lots of equipment, good quality."

A.R. Unipart

"Course content is interesting. Relevant to current systems and presented well."

S.S-T. Arqiva

