

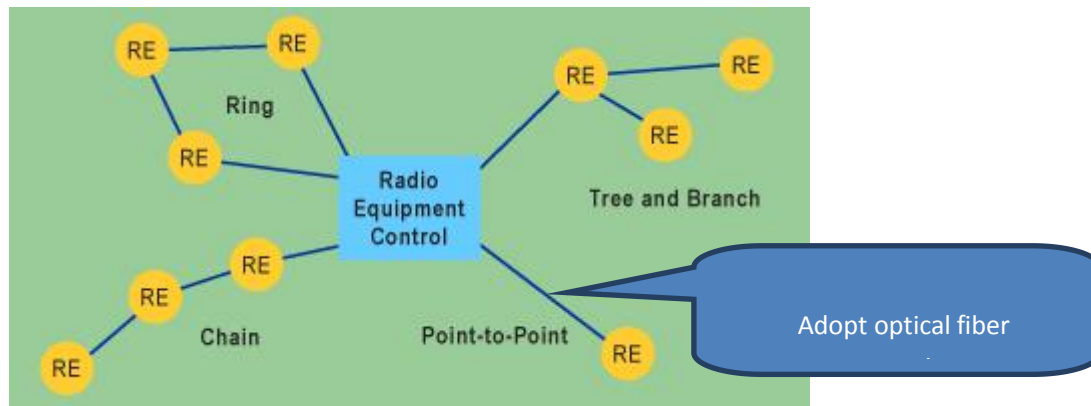
CPRI 通用公共射频数字接口的 SFP+/SFP28 光模块应用介绍

通用公共射频数字接口(CPRI)是一种标准化协议,定义了无线基础设施基站的射频设备控制(REC)和射频设备(RE)之间的数字接口。这实现了不同供应商设备的互操作性,保护了无线服务提供商的软件投入。CPRI 还在不断发展,线路速率也在不断提高,目前最新标准 V7.0 最高工作速率 (Line Bit Rate) 已经高达 24.3Gbps,应对的是 25Gbps SFP28 光模块可以满足其工作速率需求。



CPRI 支持使用分布式体系结构,含有 REC 的基站通过承载 CPRI 数据的光纤链路连接至远程射频前端(RRH 或者 RE)。由于只需要将远程射频前端安装在环境较差的地点,因此,这一体系结构降低了服务供应商的成本。基站可以位于环境比较好的中心地带,信号覆盖、气候以及供电都比较理想的地区。在一个典型的网络中,几个远程射频前端会通过图 1 所示的一种拓扑连接至同一个基站,图中蓝线表示 CPRI 链路。

BBU 称为基带处理单元，RRU 是射频拉远单元，他们之间用数字光模块连接，RRU 会把数字基带信号进行处理后，变频，射频滤波，射频放大后通过天线发射出去。



针对 CPRI 通用公共射频数字接口，易飞扬开发了完整的满足 CPRI 工作速率的 SFP+/SFP28 光模块产品线，特别是开发了能够满足工业级工作温度的 CPRI 光模块，光纤接口类型有双纤和单纤可选，工作距离可达 60/80 公里，充分满足的客户需求。

CPRI Specification V7.0 (2015-10-09)

Interface Specification

Common Public Radio Interface (CPRI); Interface Specification

4.2. Physical Layer (Layer 1) Specification

4.2.1. Line Bit Rate

In order to achieve the required flexibility and cost efficiency, several different line bit rates are defined. Therefore, the CPRI line bit rate may be selected from the following option list:

- CPRI line bit rate option 1: 614.4 Mbit/s, 8B/10B line coding (1 x 491.52 x 10/8 Mbit/s)
- CPRI line bit rate option 2: 1228.8 Mbit/s, 8B/10B line coding (2 x 491.52 x 10/8 Mbit/s)
- CPRI line bit rate option 3: 2457.6 Mbit/s, 8B/10B line coding (4 x 491.52 x 10/8 Mbit/s)
- CPRI line bit rate option 4: 3072.0 Mbit/s, 8B/10B line coding (5 x 491.52 x 10/8 Mbit/s)
- CPRI line bit rate option 5: 4915.2 Mbit/s, 8B/10B line coding (8 x 491.52 x 10/8 Mbit/s)
- CPRI line bit rate option 6: 6144.0 Mbit/s, 8B/10B line coding (10 x 491.52 x 10/8 Mbit/s)
- CPRI line bit rate option 7: 9830.4 Mbit/s, 8B/10B line coding (16 x 491.52 x 10/8 Mbit/s)
- CPRI line bit rate option 7A: 8110.08 Mbit/s, 64B/66B line coding (16 x 491.52 x 66/64 Mbit/s)
- CPRI line bit rate option 8: 10137.6 Mbit/s, 64B/66B line coding (20 x 491.52 x 66/64 Mbit/s)
- CPRI line bit rate option 9: 12165.12 Mbit/s, 64B/66B line coding (24 x 491.52 x 66/64 Mbit/s)
- CPRI line bit rate option 10: 24330.24 Mbit/s, 64B/66B line coding (48 x 491.52 x 66/64 Mbit/s)

It is mandatory that each REC and RE support at least one of the above cited CPRI line bit rates.



易飞扬的 CPRI 产品线:

CPRI 支持速率 CPRI supporting rate	光模块封装 Optical module packaging	产品型号 Product model	类型 Type	工作距离 Working distance	工作温度 Working temperature
2.4576Gbps/3.0720Gbps/4.9142Gbps	SFP	GBP-31555G-L4TI	单纤 Single-fiber	40km	-40 ~ 85
2.4576Gbps/3.0720Gbps/4.9143Gbps	SFP	GBP-55315G-L4TI	单纤 Single-fiber	40km	-40 ~ 85
2.4576Gbps/3.0720Gbps/4.9143Gbps	SFP	GBP-31555G-L8TI	单纤 Single-fiber	80km	-40 ~ 85
2.4576Gbps/3.0720Gbps/4.9143Gbps	SFP	GBP-55315G-L8TI	单纤 Single-fiber	80km	-40 ~ 85
2.4576Gbps/3.0720Gbps/4.9143Gbps	SFP	GP-315G-L2TI	双纤 Dual-fiber	20km	-40 ~ 85
2.4576Gbps/3.0720Gbps/4.9143Gbps	SFP	GP-315G-L4TI	双纤 Dual-fiber	40km	-40 ~ 85
6.1440Gbps/9.8304Gbps/10.1376Gbps	SFP+	GPP-31192-L2TI	双纤 Dual-fiber	20km	-40 ~ 85
6.1440Gbps/9.8304Gbps/10.1376Gbps	SFP+	GPP-31192-L4TI	双纤 Dual-fiber	40km	-40 ~ 85
6.1440Gbps/9.8304Gbps/10.1376Gbps	SFP+	GBP-2733192-L2TI	单纤 Single-fiber	20km	-40 ~ 85



6.1440Gbps/9.8304Gbps/10.1376Gbps	SFP+	GBP-3327192-L2TI	单纤 Single-fiber	20km	-40 ~ 85
6.1440Gbps/9.8304Gbps/10.1376Gbps	SFP+	GBP-2733192-ERTI	单纤 Single-fiber	40km	-40 ~ 85
6.1440Gbps/9.8304Gbps/10.1376Gbps	SFP+	GBP-3327192-ERTI	单纤 Single-fiber	40km	-40 ~ 85
6.1440Gbps/9.8304Gbps/10.1376Gbps	SFP+	GBP-2733192-E6TI	单纤 Single-fiber	60km	-40 ~ 85
6.1440Gbps/9.8304Gbps/10.1376Gbps	SFP+	GBP-3327192-E6TI	单纤 Single-fiber	60km	-40 ~ 85
12.16512Gbps	SFP+	GPP-8514G-SRC	双纤 Dual-fiber	150m	0~70
24.33024Gbps	SFP28	GPP-85250-SRC	双纤 Dual-fiber	100m	0~70
24.33024Gbps	SFP28	GPP-31250-LRC	双纤 Dual-fiber	10km	0~70