

R2040 R2000-Series

Self-installation fiber node/receiver



Electrical and general data

Type	Typical value	Remark
Input power (V)	11 ... 18, typ. 12	-
Power supply type	external 12V / 12 W (1A)	-
Power cord type	F-male	-
Power port	2	Internal splitter
Power consumption (W)	4.5	-
Internal supply voltage (V)	9	-
DC current output of power supply (mA)	420	@ 9V laser on/off
Power indicator	green LED on	-
Dim switching of diodes 4 levels		-
Ambient temperature (°C)	-20 ... +55	-
Output impedance (Ω)	75	-
Safety requirements	acc. EN 60728-11:2010	-
EMC conditions, radiated power (dBpW)	acc EN 50083-2: 2012 < 20	30-1000 MHz
Immunity (dBμV/m)	> 125	-
Protective system	IP 20	-
Overvoltage protection (kV)	2	EN60728-3: 2010
Protection class	II	-
MTBF (h)	~ 200000	Acc. Telcordia SR-322
Conformity	CE	-

Mechanical data

Type	Typical value	Remark
Dimensions (mm)	110 x 110 x 46	FiberTwist box
Optical port	1	SC / APC connector
DC power port	1	P/N TK 18-001 2.0 DC JACK

Downstream receiver

Type	Typical value		Remarks
	R2040-UD	R2040-D	
Optical wavelength (nm)	1545-1560		other on request
Integrated WDM filter	yes	no	
Equivalent input noise current density (NCD) (pA/√Hz)	5		-
Responsivity R of photo diode (A/W)	0.95		-
Optical input power range (dBm)	-8 ... 2		green LED on: within this range
Optical input return loss (dB)	45		-
Optical RX diode	PIN		-
Optical level control (OLC) (dBm)	-7 ... 1		-
Frequency range (MHz)	105 ... 1218 or 204 ... 1218	47 ... 1218	fixed diplexer OFT D 1261
Ripple (dB)	max. +/- 1		-
Gain tolerance over temperature (dB)	max. +/- 1.5		-
Max. operating level, flat (dBμV) U _{max} (N) (BER 10 ⁻⁹)	76-77		EN60728-3-1, N=119 with splitter at 2 RF connectors
Return loss RF output (dB)	≥ 18 - 1.5/Okt.		Reference 85 - 1218 MHz
Group delay for RLK585-1 Diplexer (ns/4.43 MHz)	50	-	105-120.75 MHz
	10	-	120.75-1218 MHz
Group delay for RLK5200 Diplexer (ns/4.43 MHz)	50	-	258-296.7 MHz
	10	-	296.7-1218 MHz

Upstream transmitter

Type	Typical value	Remark	
Laser wavelength (nm)	1610, 1470, 1450, 1410	-	
Optical power (dBm)	3	-	
Laser type	Isolated DFB	-	
Relative Intensity Noise (RIN) (dB/Hz)	< -160	-	
Laser turn-on time (nsec.)	450	acc. IEC 60728-14	
Laser rise time (nsec.)	300	acc. IEC 60728-14	
Laser turn-off delay time (nsec.)	600	acc. IEC 60728-14	
Frequency range (MHz)	5 ... 85 /204	depending on fixed diplexer	
Ripple (dB)	max. +/- 0.75	-	
Optical output return loss (dB)	45	-	
Laser turn on RF level (dBμV)	90	-	
Return loss RF input (dB)	≥18	10 - 85 / 204 MHz	
Group delay for RLK585-1 Diplexer (ns/2 MHz)	50	5-10 MHz	
	10	10-61.75 MHz	
	20	61.75-65 MHz	
Group delay for RLK5200 Diplexer (ns/2 MHz)	50	5-10 MHz	
	10	10-80.75 MHz	
	20	80.75-85 MHz	
OMI per channel	8 x 256 QAM / 8 MHz	8%	Input level per ch 95 dBμV
	24 x 256 QAM / 8 MHz	6%	
Uplink signal indications	Diode on the right: Icon "Λ" (US) blink: burst mode (green LED)	red LED: Ingress, Laser diode defect	

R2000-Series product models

Model	Type	DOCSIS 3.1 Interface	Remark
FiberTwist-R2040-UD	Fiber node/receiver	Downstream / Upstream	-
FiberTwist-R2040-D	Fiber node/receiver	Downstream only	-