



EKSELANS BY ITS

**2024**  
VERSION

# OPTICAL TRANSMITTERS AND RECEIVERS



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# OPTICAL TRANSMITTERS BASIC SERIE

REFERENCE		TO 3 1310	TO 3 FI
Code		271017	271001
RF Input			
Frequency	MHz	47 - 1000	30 - 2150
Flatness	dB	±0,75	±0,75
TV input level (AGC)	dBµV	70-80*	70-80*
SAT input level (AGC)	dBµV	-	58-78**
Input level TV + SAT (AGC)	dBµV	-	72-84***
Input regulation	dBµV	20	20
Return loss	dB	≥14	≥14
Input impedance	Ω	75	75
Connector		Tipo F	Tipo F
Optical output			
Wavelength	nm	1310	1310
Optical power output	dBm	3	3
Laser type		DFB	DFB
Optical adaptation	dB	>45	>45
Optical connector		SC / APC	SC / APC
Power supply	Vdc	12 (included)	12 (included)
Maximum current		-	500
LNB power supply	Vdc KHz	-	13 - 18 0 - 22
Operating temperature	°C	-20...+55	-20...+55
Dimensions	mm	73x103x23	73x103x23

(\*) 59 Ch PAL-I analogue channels

(\*\*)

(\*\*\*)

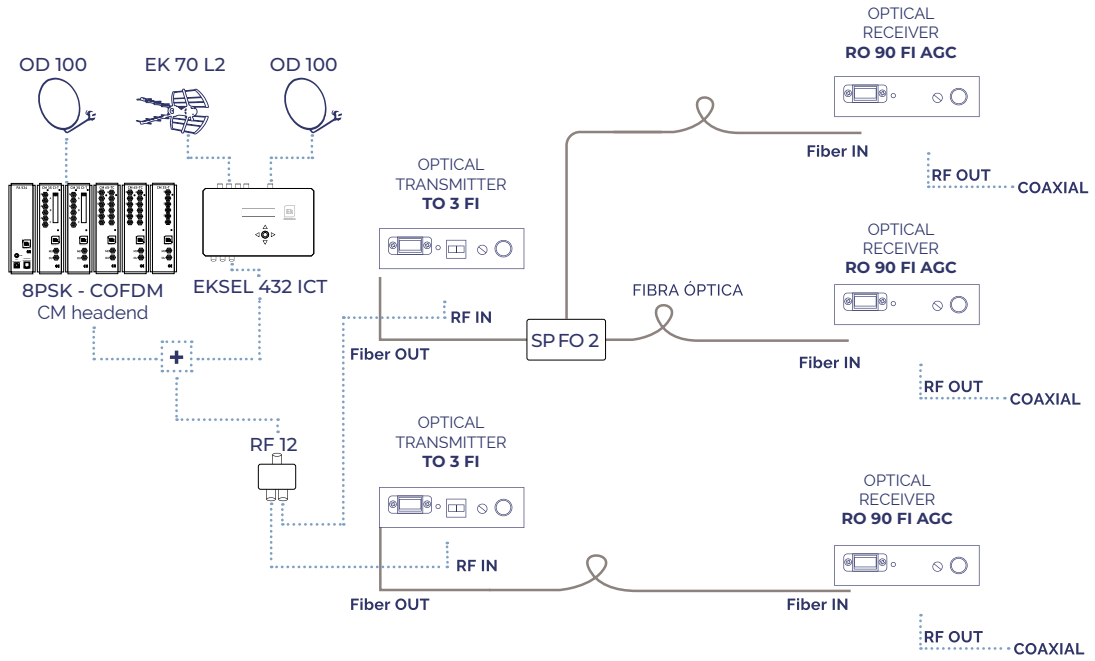
- Specifications and design are subject to change without notice.  
- The product complies with the requirements for CE marking. The declaration of conformity is available on the website [www.ek.plus](http://www.ek.plus).

## TO 3 1310 · TO 3 FI

- ✓ They allow the distribution of radiofrequency signal over long distances taking advantage of optical fiber
- ✓ Led indicator of the optical output level
- ✓ Allows selection of satellite band and polarity (TO 3 FI)
- ✓ Input level regulation



# APPLICATION EXAMPLE



# OPTICAL TRANSMITTERS BASIC SERIE

NEW

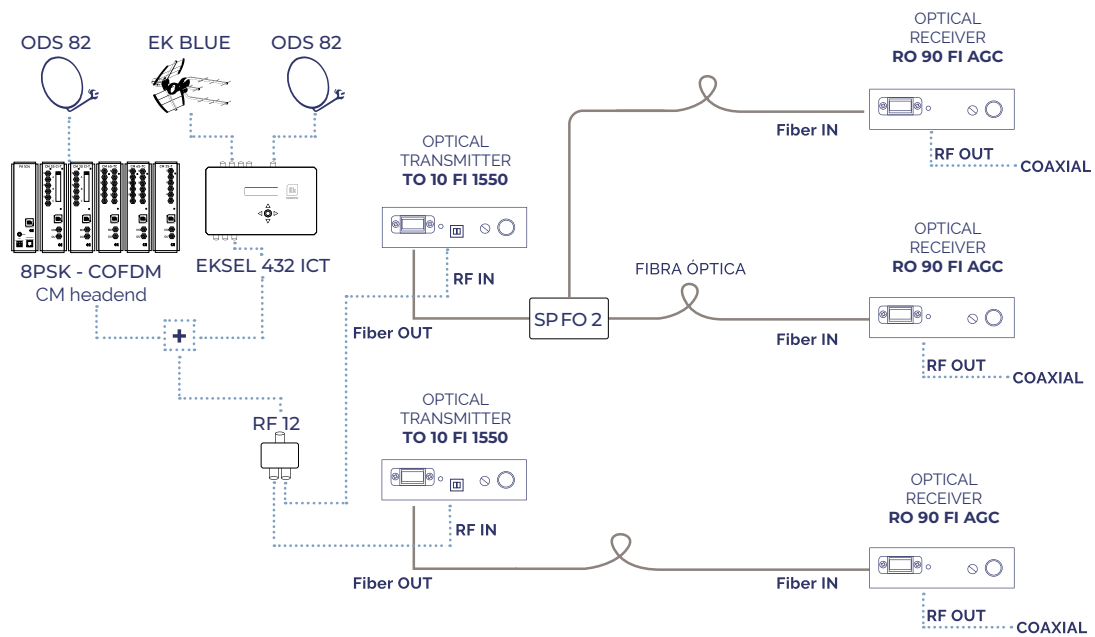
## TO 10 FI 1550

- ✓ Permite la distribución de señal de radiofrecuencia a grandes distancias aprovechando las ventajas de la fibra óptica
- ✓ Led indicador del nivel óptico de salida
- ✓ Permite la selección de la banda y polaridad de satélite
- ✓ Regulación del nivel de entrada
- ✓ Longitud de onda: 1550nm
- ✓ Potencia óptica: 10 dBm

REFERENCIA		TO 3 1310	TO 3 FI
Código		271017	271001
Entrada RF			
Frecuencia	MHz	47 - 1000	47 - 2150
Planitud	dB	±0,75	±0,75
Nivel de entrada TV	dBµV	70-80*	70-80*
Nivel de entrada SAT	dBµV	-	58-78**
Nivel de entrada TV+SAT	dBµV	-	72-84***
Regulación de entrada	dBµV	20	20
Perdidas de retorno	dB	≥14	≥14
Impedancia de entrada	Ω	75	75
Conector		Tipo F	Tipo F
Salida óptica			
Longitud de onda	nm	1310	1310
Potencia óptica de salida	dBm	3	3
Tipo de láser		DFB	DFB
Adaptación óptica	dB	>45	>45
Conector óptico		SC / APC	SC / APC
Alimentación	Vdc	12 (alimentador incluido)	12 (alimentador incluido)
Corriente máxima	mA	-	500
Alimentación LNB	Vdc KHz	-	13 - 18 0 - 22
Temperatura de funcionamiento	°C	-20...+55	-20...+55
Medidas	mm	73x103x23	73x103x23



# APPLICATION EXAMPLE



# OPTICAL RECEIVER

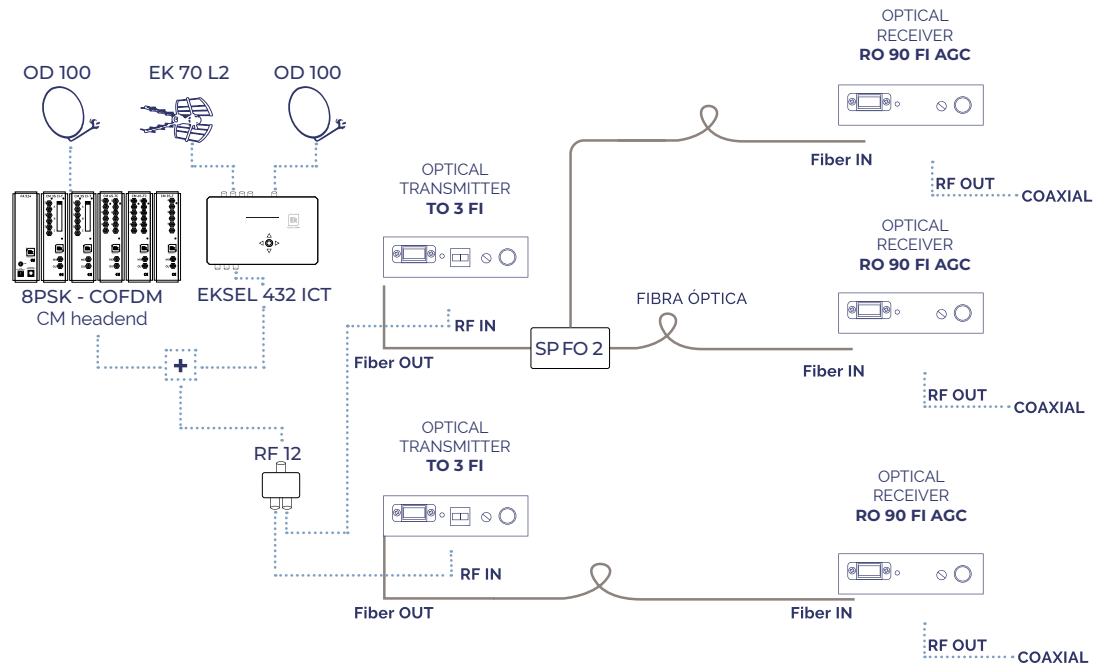
REFERENCE		RO 88 AGC	RO 90 FI AGC
Code		270002	270003
Optical input			
Wavelength	nm	1260-1620	1260-1620
Optical power	dBm	+2/-15	+3/-15
AGC range	dBm	0 / -12	2 / -7
Efficiency	A/W	≥0,85/1310 nm ≥0,9/1550 nm	≥0,9/1310 nm ≥0,95/1550 nm
Optical return loss	dB	>45	>45
Optical connector		SC / APC	SC / APC
RF Output			
Frequency range	MHz	47 - 862	47 - 2150
Flatness	dB	≥0,75	≥1,5
Output level	dBμV	>80 AGC	TV >80 (AGC) FI >70 (AGC)
Regulation	dB	20	20
Return loss	dB	≥14	≥14
Connector		F type	F type
Voltage feeding	Vdc	12 (included)	12 (included)
Dimensions		73 x 103 x 23	
Power consumption	W	<1	<1
Working temperature	°C	-20...+55	-20...+55

## RO 88 AGC · RO 90 FI AGC

- ✓ It allows the reception of optical signal and its distribution in radiofrequency
- ✓ Automatic gain control



# APPLICATION EXAMPLE



# TER + SAT (4 POL) IN ONE SINGLE FIBER

## TO 4 ST · RO ST 44

- ✓ Permite la transmisión de 4 polaridades de satélite y TDT a través de una única fibra
- ✓ Excelente linealidad y planitud.
- ✓ Fibra monomodo alta pérdida de retorno
- ✓ Tecnología de ruido ultra bajo
- ✓ LED rojo para indicación de potencia
- ✓ Incorpora CWDM (TO 4 ST / RO ST 44), utilizando PD de alta linealidad (RO ST 44)
- ✓ Incorpora AGC óptico (RO ST 44)
- ✓ Laser tipo DFB (TO 4 ST)
- ✓ Compatible con LNBs tipo quattro o quad (TO 4 ST)
- ✓ Admite hasta 16 RO 44 ST (TO 4 ST)



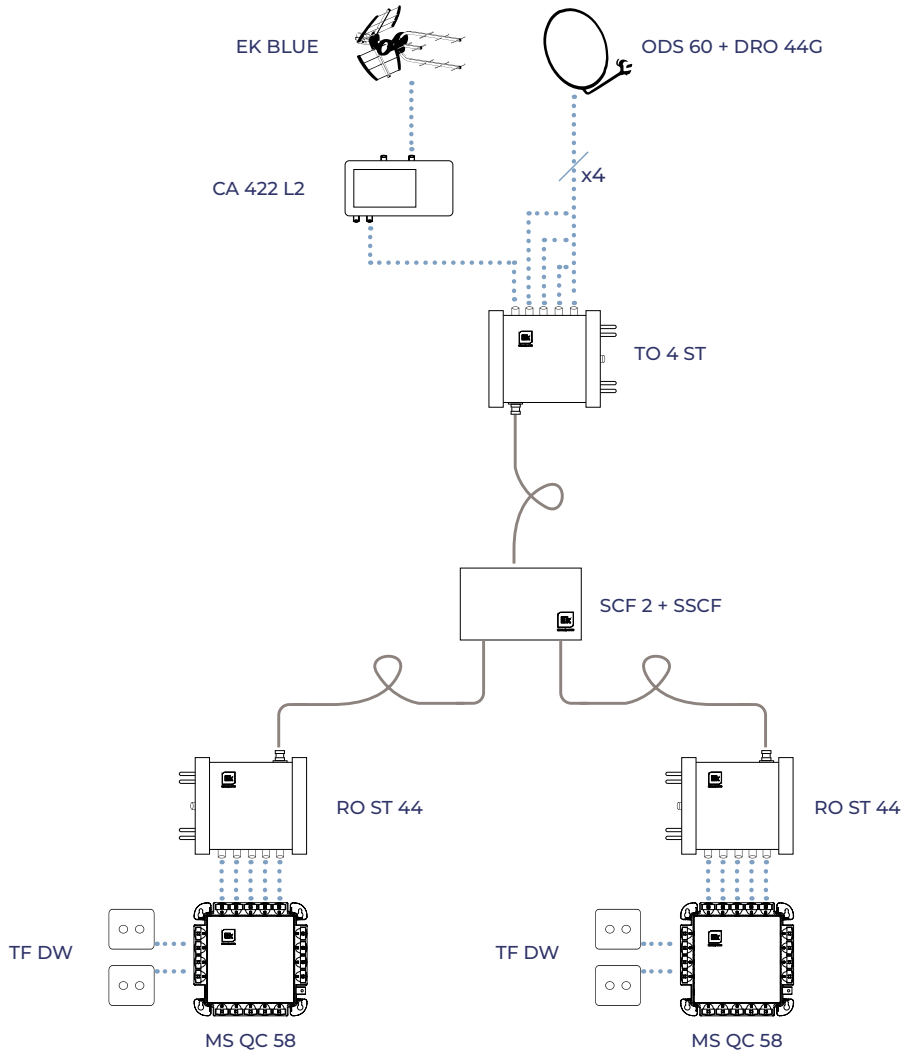
TO 4 ST

RO ST 44

REFER-ENCE			TO 4ST			REFER-ENCE			RO ST 44		
Code			276001			Code			276003		
User interface						User interface					
RF Connector			F-hembra			RF Connector			F-hembra		
Optical connector			SC/APC			Optical connector			SC/APC		
Power supply			F-hembra			Power supply			F-hembra		
Optical parameters						Optical parameters					
Return loss		dB	≥ 45dB			Pérdidas de retorno		dB	≥ 45dB		
Output wave-length		nm	1510 VL			Output wavelength		nm	1510 VL		
			1530 HL						1530 HL		
			1550 VH+-Terr.						1550 VH+-Terr.		
			1570 HH						1570 HH		
Responsiveness		A/W	≥ 0.9			Responsiveness		A/W	≥ 0.9		
Output power per $\lambda$		dBm	+3			Input power per $\lambda$		dBm	-15~3		
									-7~2 AGC		
Fiber optic type			Monomodo			Fiber optic type			Monomodo		
Terr parameters + Sat-IF						Terr parameters + Sat-IF					
Input impedance		$\Omega$	75			Input impedance		$\Omega$	75		
Terr. Frequency range		MHz	47~860			Terr. Frequency range		MHz	47~860		
Terr. Curly		dB	± 0.75			Terr. Curly		dB	± 0.75		
Terr. input level		dB $\mu$ V	65-85			Terr. input level		dB $\mu$ V	≥ 80 AGC		
Terr. Return loss		dB	≥ 14			Terr. Return loss		dB	≥ 14		
Sat-IF frequency range		MHz	950~2150			CNR		dB	≥ 50		
Sat-IF return loss		dB	≥ 10dB			CSO		dB	≥ 62 (*)		
Planitud Sat-IF		dB	± 1.5			CTB		dB	≥ 65 (*)		
Sat-IF input level		dB $\mu$ V	65-85			Sat-IF frequency range		MHz	950~2150		
LNB power		V/KHz	13-18/0-22			Sat-IF return loss		dB	≥ 10dB		
Other parameters						Other parameters					
Power supply		Vdc	20 (Incluida)			Planitud Sat-IF		dB	± 1.5		
Power consumption		W	< 10			Sat-IF input level		dB $\mu$ V	75 ± 5 AGC		
						AGC stability		dB	± 1		
Other parameters						Other parameters					
Power supply		Vdc	20 (Incluida)			Power supply		Vdc	20 (Incluida)		
Power consumption		W	< 10			Power consumption		W	< 10		



# APPLICATION EXAMPLE



# RF OVERLAY OPTICAL RECEIVERS

## RO 68 CWD · RO 88 CWD · RO 65 FI CWD RO 90 FI CWD

- ✓ It allows the reception of optical signal and can continue distributing it in radiofrequency
- ✓ Compatible with GPON networks. Wavelength pitch 1310/1490 nm
- ✓ RO 68 CWD/ RO 65 FI CWD: passive behavior. No need power



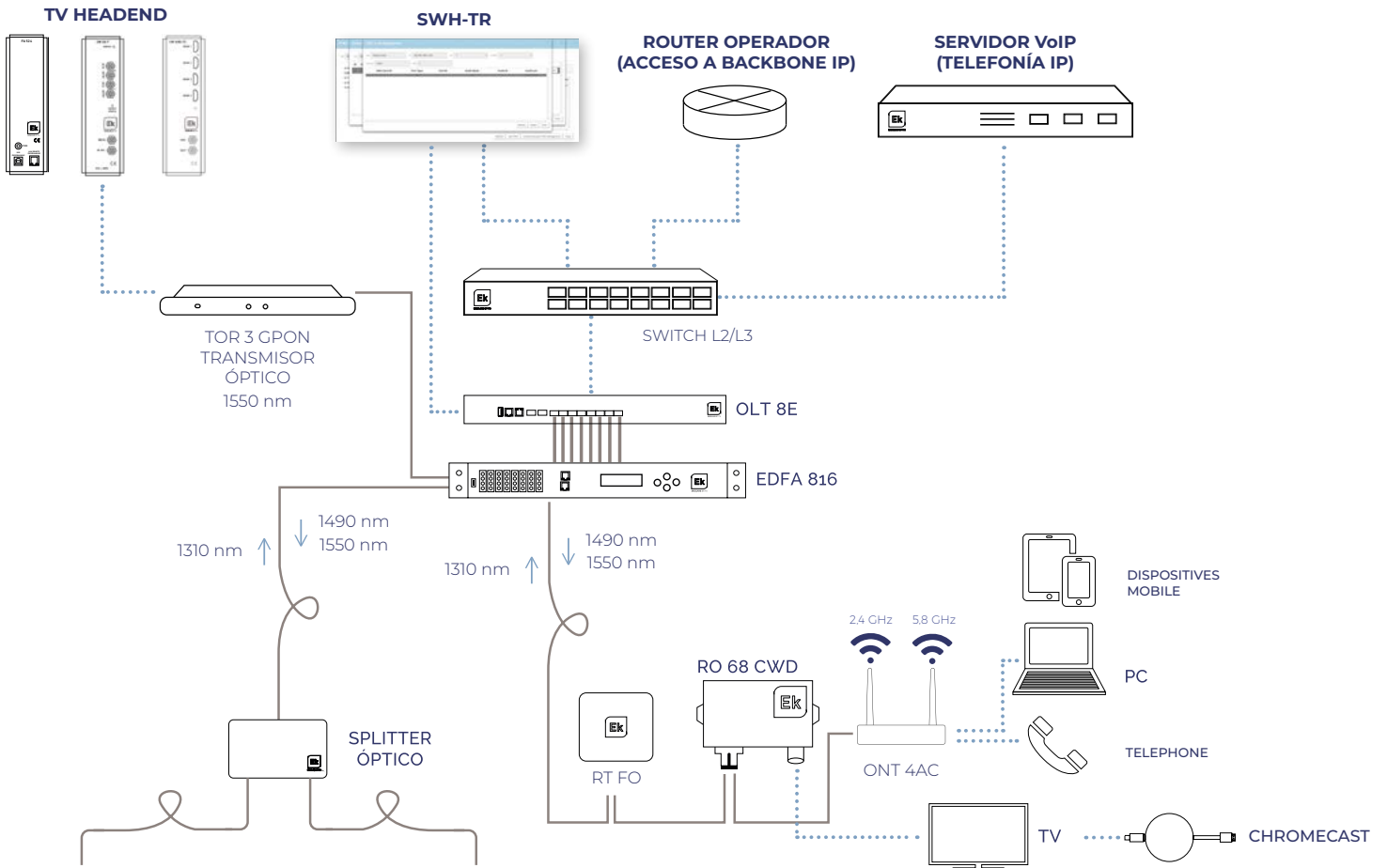
RO 68 CWD



RO 88 CWD

REFERENCE		RO 68 CWD	RO 88 CWD	RO 65 FI CWD	RO 90 FI CWD
Code		270005	270004	270006	270007
Optical input					
Wavelength	nm	1540 - 1563	1540 - 1563	1540 - 1563	1540 - 1563
Pass wavelength	nm	1310 / 1490	1310 / 1490	1310 / 1490	1310 / 1490
Optical input level	dBm	0 / -10	+2 / -20	0 / -10	+3 / -15
ACC range	dBm	-	0 / -12	-	+2 / -7
Efficiency	A/W	≥0,9/1550 nm	≥0,85/1310 nm ≥0,9/1550 nm	≥0,9/1550 nm	≥0,9/1310 nm ≥0,95/1550 nm
Optical return loss	dB	>45	>45	>45	>45
Optical connector	-	SC/APC (IN/OUT)	SC/APC (IN/OUT)	SC/APC (IN/OUT)	SC/APC (IN/OUT)
RF Output					
Frequency range	MHz	47 - 1000	47 - 1000	47 - 2350	47 - 2150
Flatness	dB	± 1	± 0,75	± 1,5	± 0,75
Output level	dBμV	62 @ -1dBm*	>80 (AGC)*	60 @ -1dBm**	>80 (AGC)**
Output level regulation	dB	-	0 - 20	-	0 - 20
MER	dB	≥31dB	≥31dB	≥31dB	≥31dB
VBER	-	1E-8	1E-8	1E-8	1E-8
Return loss	dB	≥14	≥14	≥14	≥14
Output connector	-	F	F	F	F
General					
Voltage feeding	Vdc	Not required	12 (PSU included)	Not required	12 (PSU included)
Dimensions	mm	73 x 103 x 23			
Power consumption	W	-	≤1	-	≤1
Working temperature	°C	-20 / +55	-20 / +55	-20 / +55	-20 / +55

# APPLICATION EXAMPLE





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