Tecnotelca
CONSULTORÍA SOPORTE TÉCNICO OUTSOURCING

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INFORME TECNICO

DIRIGIDO A	:	Ing. Fabian Columbus
REALIZADO POR	:	Ing. Jose Nunes
ASUNTO	:	REVISION TECNICA DE FUSIONADORA DE FIBRA OPTICA
FECHA	:	Guayaquil, 25 de noviembre 2024

N°: INF-TEC-022

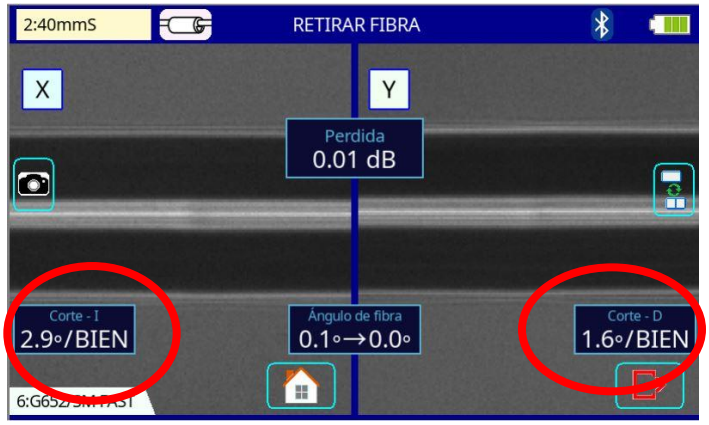
Las Fusionadoras de fibra optica son herramientas esenciales en la instalación y mantenimiento de redes de fibra óptica. Sin embargo, al igual que cualquier otro equipo, pueden fallar o dañarse, lo que requiere una reparación oportuna para garantizar la continuidad de los servicios. En este informe, se presentaran las novedades encontradas en la revisión de campo realizado en el equipo:

MODELO: 90S+
SERIAL: 1XA9MPLR6GDTB5T9
MARCA: FUJIKURA

ANALISIS TECNICO:

Se procedió a realizar una revisión física del equipo, esta se hizo en el campo de trabajo (radio base) en presencia del personal técnico operador del equipo, y pudimos constatar la falla en el equipo.

La falla radica en la cortadora, es decir estaba descalibrada y por eso arrojaba altos ángulos de corte, por lo que se procedió a calibrar la cortadora e indicar al operador de la máquina, como hacerlo.



Img 1 en la siguiente imagen podemos observar que los ángulos de cortes están elevados.

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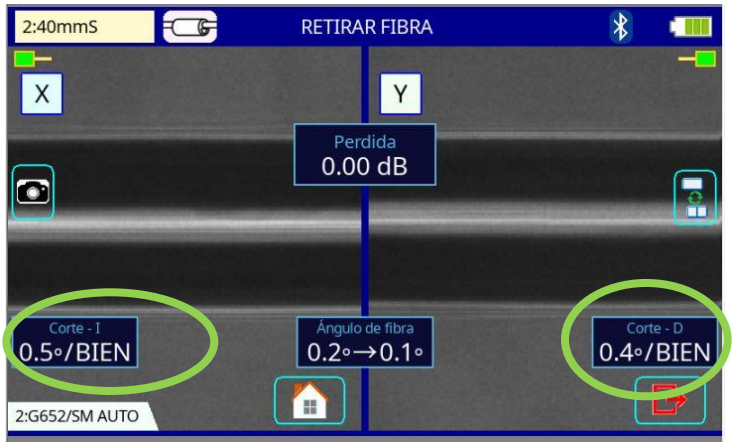
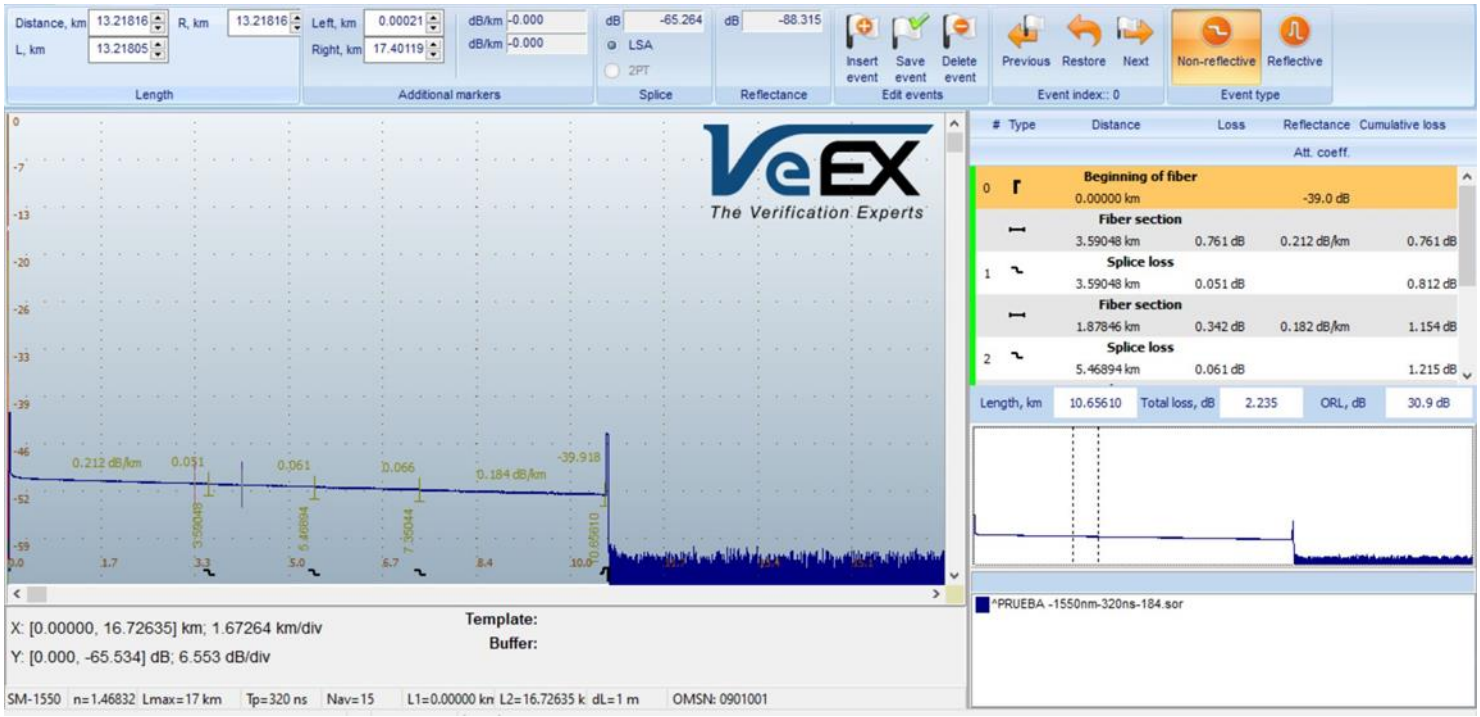
Una vez calibrada se procedió a estabilizar y calibrar el arco, arrojando valores positivos en las fusiones.



Img 2 Se sugiere que el angulo de corte debe estar por debajo de los 5°

Se procedió a realizar pruebas a través de un OTDR, tomando como referencia dos bobinas de lanzamiento de 5 km cada una:



Img 3 Distancia total de las bobins de lanzamiento

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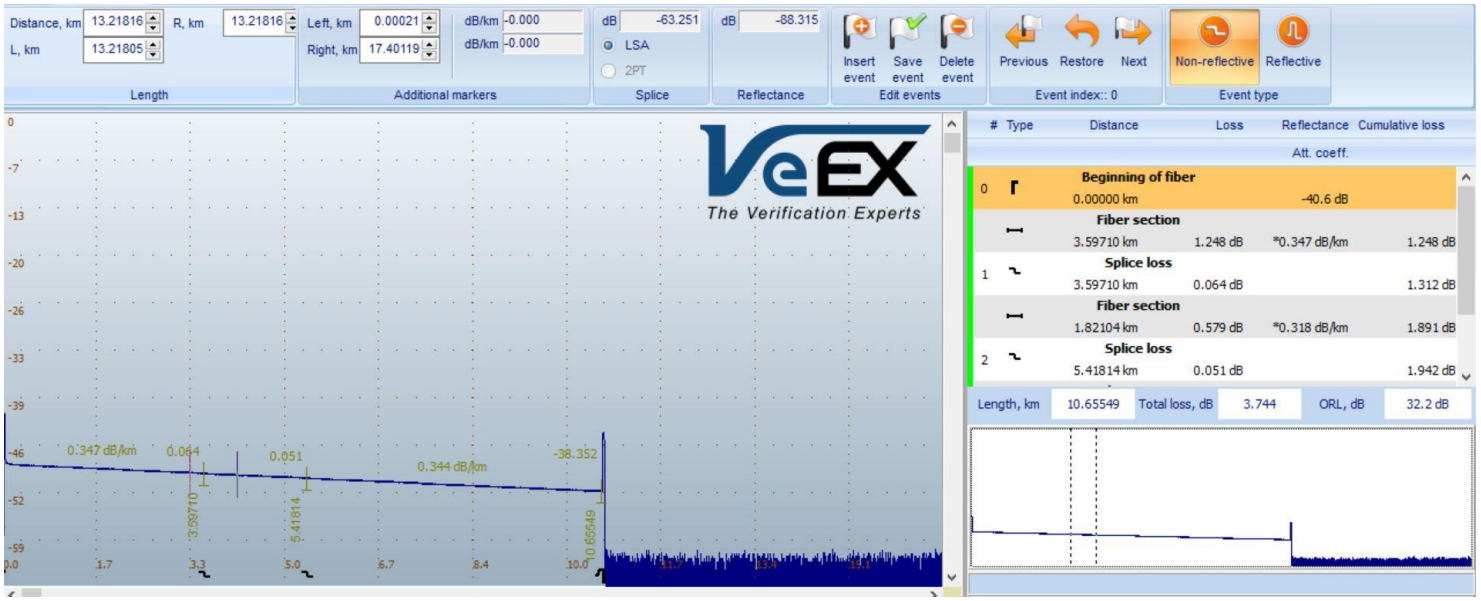
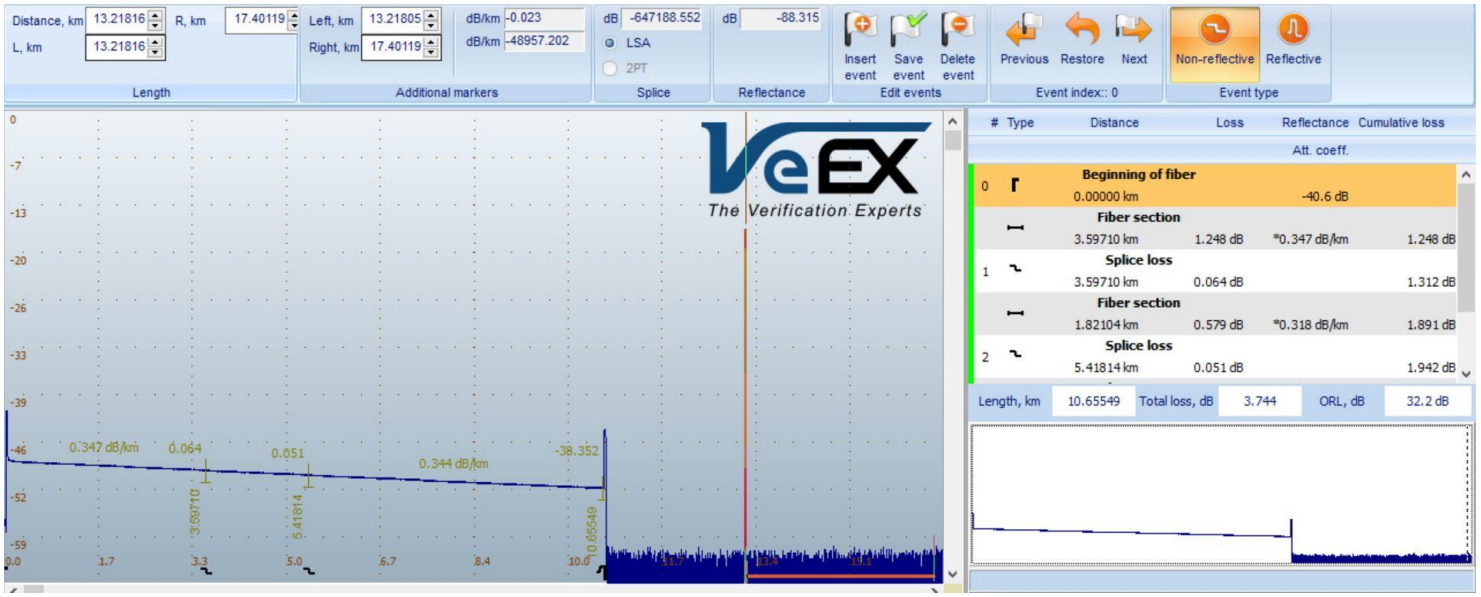
Se realizaron las pruebas durante 12 veces de los cuales dos de las pruebas tuvieron un valor por fusión de; 0.05 dBm y 0.07 dBm.



Img 4 podemos observar en la grafica que el valor de la fusión es de 0.051 dB en la longitud de onda 1310 nm



Img 5 podemos observar en la grafica que el valor de la fusión es de 0.051 dB en la longitud de onda 1550 nm

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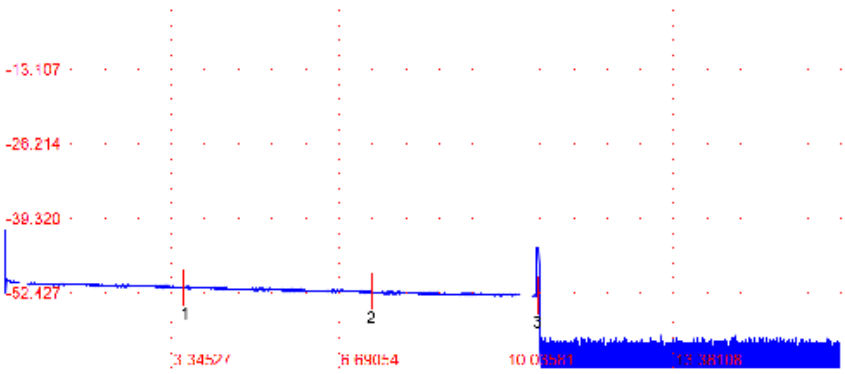
HILO 1 PRUEBA PROCISA 90S.sor



X: [0.00000, 16.72635] km: 3.34527 km/div
Y: [-65.534, 0.000] dB; 13.107 dB/div

22.11.2024 10:45:25	
FC500 #0901001	
1550.0 nm	
Job:	
Cable:	
Fiber:	182
Trace:	
Fiber Type:	
Originating Location:	start position
Terminating Location:	end position
Operator:	JOSE NUNES
Comment:	
Refractive Index:	1.4683
Backscattering coef.:	-80 dB
Resolution:	1 m
Pulse Width:	320 ns
Number of Averages:	15
Length:	10.65507 km
Total Loss:	2.214 dB
ORL:	31.0 dB
Latency:	0.052 ms

#		Distance, km	Loss, dB	Reflectance, dB	Attenuation Coef., dB/km	Cumul. Loss, dB
[0	R	0.00000		-39.9		
1	S	3.58742	0.049		0.213	0.813
2	S	7.34534	0.067		0.193	1.605
3]	R	10.65507		-39.8	0.184	2.214

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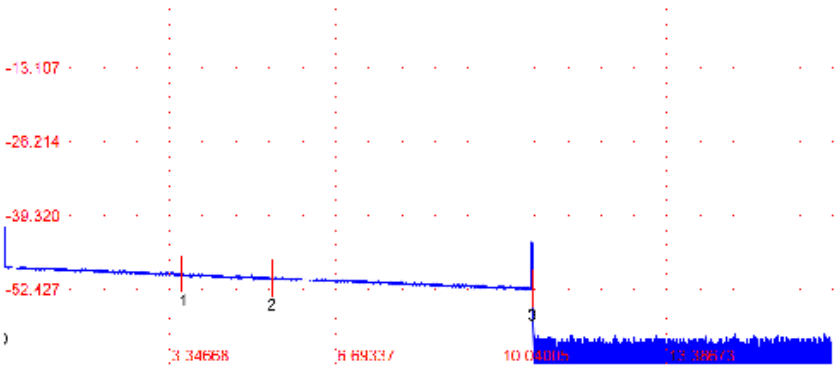
HILO 2 PRUEBA PROCISA 90S.sor



X: [0.00000. 16.73342] km: 3.34668 km/div
Y: [-65.534, 0.000] dB; 13.107 dB/div

22.11.2024 11:15:38	
FC500 #0901001	
1310.0 nm	
Job:	
Cable:	
Fiber:	189
Trace:	
Fiber Type:	
Originating Location:	start position
Terminating Location:	end position
Operator:	JOSE NUNES
Comment:	
Refractive Index:	1.4677
Backscattering coef.:	-80 dB
Resolution:	1 m
Pulse Width:	320 ns
Number of Averages:	15
Length:	10.65549 km
Total Loss:	3.744 dB
ORL:	32.2 dB
Latency:	0.052 ms

#		Distance, km	Loss, dB	Reflectance, dB	Attenuation Coef., dB/km	Cumul. Loss, dB
[0	R	0.00000		-40.6		
1	S	3.59710	0.064		0.347	1.312
2	S	5.41814	0.051		0.318	1.942
3]	R	10.65549		-38.4	0.344	3.744

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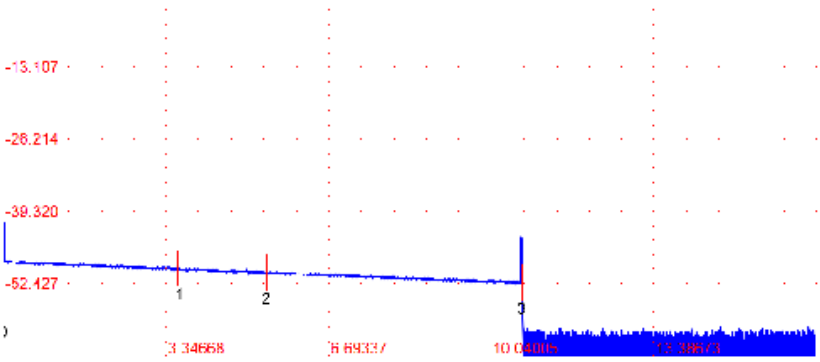
HILO 3 PRUEBA PROCISA 90S.sor



X: [0.00000. 16.73342] km: 3.34668 km/div
Y: [-65.594, 0.000] dB; 13.107 dB/div

22.11.2024 11:16:39	
FC500 #0901001	
1310.0 nm	
Job:	
Cable:	
Fiber:	190
Trace:	
Fiber Type:	
Originating Location:	start position
Terminating Location:	end position
Operator:	JOSE NUNES
Comment:	
Refractive Index:	1.4677
Backscattering coef.:	-80 dB
Resolution:	1 m
Pulse Width:	320 ns
Number of Averages:	15
Length:	10.65549 km
Total Loss:	3.744 dB
ORL:	32.2 dB
Latency:	0.052 ms

#		Distance, km	Loss, dB	Reflectance, dB	Attenuation Coef., dB/km	Cumul. Loss, dB
[0	R	0.00000		-40.6		
1	S	3.59710	0.064		0.347	1.312
2	S	5.41814	0.051		0.318	1.942
3]	R	10.65549		-38.4	0.344	3.744

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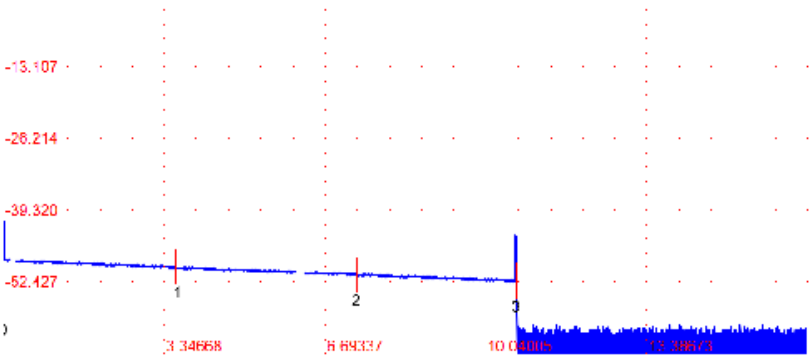
HILO 4 PRUEBA PROCISA 90S.sor



X: [0.00000. 16.73342] km: 3.34668 km/div
Y: [-65.534, 0.000] dB; 13.107 dB/div

22.11.2024 11:20:48
FC500 #0901001
1310.0 nm

Job:	
Cable:	
Fiber:	196
Trace:	
Fiber Type:	
Originating Location:	start position
Terminating Location:	end position
Operator:	JOSE NUNES
Comment:	
Refractive Index:	1.4677
Backscattering coef.:	-80 dB
Resolution:	1 m
Pulse Width:	320 ns
Number of Averages:	15
Length:	10.65549 km
Total Loss:	3.698 dB
ORL:	32.1 dB
Latency:	0.052 ms

#		Distance, km	Loss, dB	Reflectance, dB	Attenuation Coef., dB/km	Cumul. Loss, dB
[0	R	0.00000		-40.6		
1	S	3.59710	0.066		0.347	1.314
2	S	7.35048	0.064		0.331	2.621
3]	R	10.65549		-38.0	0.326	3.698

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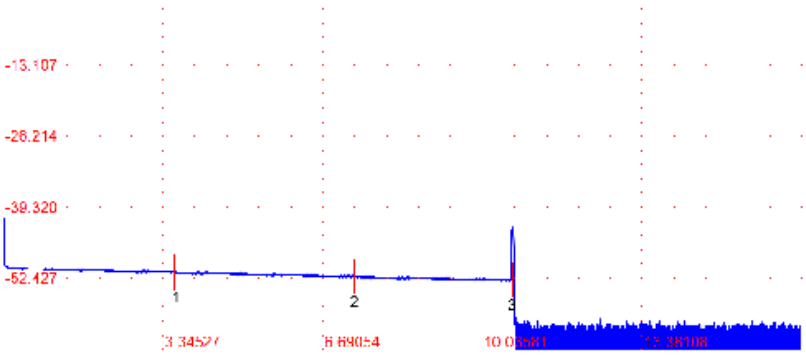
HILO 5 PRUEBA PROCISA 90S.sor



X: [0.00000, 16.72635] km: 3.34527 km/div
Y: [-65.534, 0.000] dB; 13.107 dB/div

22.11.2024 11:01:03	
FC500 #0901001	
1550.0 nm	
Job:	
Cable:	
Fiber:	183
Trace:	
Fiber Type:	
Originating Location:	start position
Terminating Location:	end position
Operator:	JOSE NUNES
Comment:	
Refractive Index:	1.4683
Backscattering coef.:	-80 dB
Resolution:	1 m
Pulse Width:	320 ns
Number of Averages:	15
Length:	10.65610 km
Total Loss:	2.188 dB
ORL:	30.8 dB
Latency:	0.052 ms

#		Distance, km	Loss, dB	Reflectance, dB	Attenuation Coef., dB/km	Cumul. Loss, dB
[0	R	0.00000		-39.1		
1	S	3.59456	0.045		0.212	0.807
2	S	7.35350	0.071		0.186	1.577
3]	R	10.65610		-38.1	0.185	2.188

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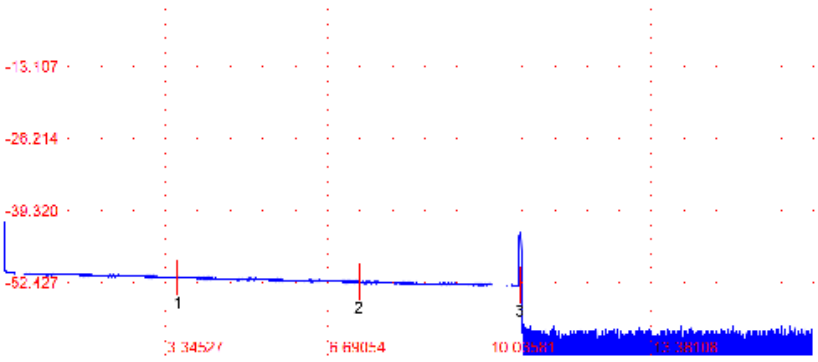
HILO 6 PRUEBA PROCISA 90S.sor



X: [0.00000. 16.72635] km: 3.34527 km/div
Y: [-65.534, 0.000] dB; 13.107 dB/div

22.11.2024 11:06:02
FC500 #0901001
1550.0 nm

Job:	
Cable:	
Fiber:	185
Trace:	
Fiber Type:	
Originating Location:	start position
Terminating Location:	end position
Operator:	JOSE NUNES
Comment:	
Refractive Index:	1.4683
Backscattering coef.:	-80 dB
Resolution:	1 m
Pulse Width:	320 ns
Number of Averages:	15
Length:	10.65610 km
Total Loss:	2.220 dB
ORL:	30.8 dB
Latency:	0.052 ms

#		Distance, km	Loss, dB	Reflectance, dB	Attenuation Coef., dB/km	Cumul. Loss, dB
[0	R	0.00000		-39.0		
1	S	3.58129	0.048		0.213	0.811
2	S	7.33411	0.063		0.195	1.606
3]	R	10.65610		-38.3	0.185	2.220

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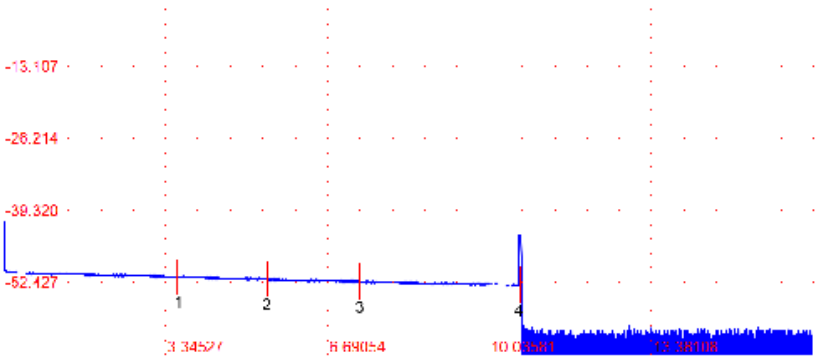
HILO 7 PRUEBA PROCISA 90S.sor



X: [0.00000. 16.72635] km: 3.34527 km/div
Y: [-65.534, 0.000] dB; 13.107 dB/div

22.11.2024 11:09:29	
FC500 #0901001	
1550.0 nm	
Job:	
Cable:	
Fiber:	186
Trace:	
Fiber Type:	
Originating Location:	start position
Terminating Location:	end position
Operator:	JOSE NUNES
Comment:	
Refractive Index:	1.4683
Backscattering coef.:	-80 dB
Resolution:	1 m
Pulse Width:	320 ns
Number of Averages:	15
Length:	10.65610 km
Total Loss:	2.239 dB
ORL:	30.9 dB
Latency:	0.052 ms

#		Distance, km	Loss, dB	Reflectance, dB	Attenuation Coef., dB/km	Cumul. Loss, dB
[0	R	0.00000		-39.1		
1	S	3.59762	0.047		0.213	0.813
2	S	5.44750	0.056		0.181	1.204
3	S	7.35759	0.071		0.185	1.628
4]	R	10.65610		-38.8	0.185	2.239

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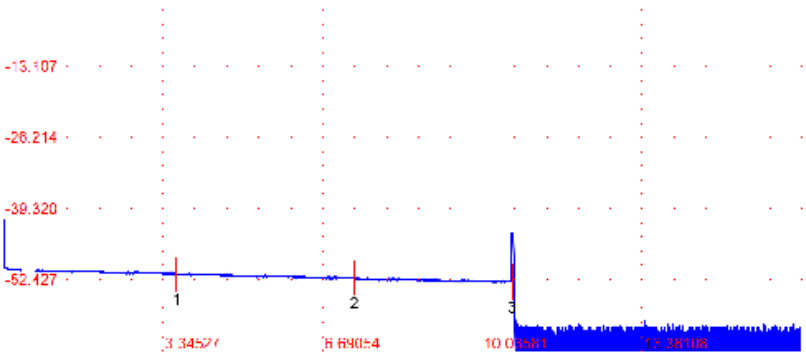
HILO 8 PRUEBA PROCISA 90S.sor



X: [0.00000. 16.72635] km: 3.34527 km/div
Y: [-65.534, 0.000] dB; 13.107 dB/div

22.11.2024 11:12:22	
FC500 #0901001	
1550.0 nm	
Job:	
Cable:	
Fiber:	187
Trace:	
Fiber Type:	
Originating Location:	start position
Terminating Location:	end position
Operator:	JOSE NUNES
Comment:	
Refractive Index:	1.4683
Backscattering coef.:	-80 dB
Resolution:	1 m
Pulse Width:	320 ns
Number of Averages:	15
Length:	10.65507 km
Total Loss:	2.196 dB
ORL:	30.9 dB
Latency:	0.052 ms

#		Distance, km	Loss, dB	Reflectance, dB	Attenuation Coef., dB/km	Cumul. Loss, dB
[0	R	0.00000		-39.2		
1	S	3.60579	0.047		0.212	0.811
2	S	7.35248	0.069		0.189	1.589
3]	R	10.65507		-38.6	0.184	2.196

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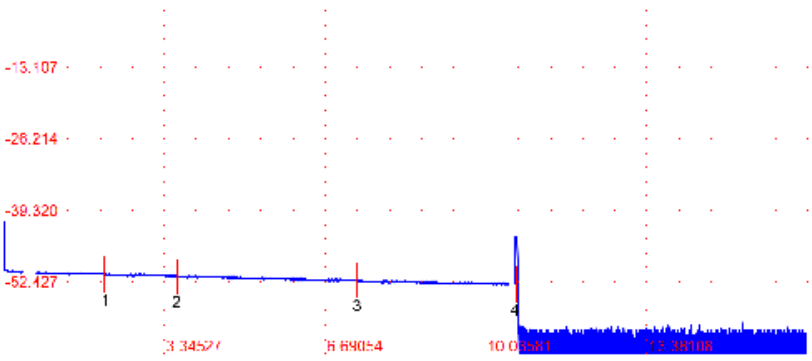
HILO 9 PRUEBA PROCISA 90S.sor



X: [0.00000. 16.72635] km: 3.34527 km/div
Y: [-65.534, 0.000] dB; 13.107 dB/div

22.11.2024 11:15:10
FC500 #0901001
1550.0 nm

Job:	
Cable:	
Fiber:	188
Trace:	
Fiber Type:	
Originating Location:	start position
Terminating Location:	end position
Operator:	JOSE NUNES
Comment:	
Refractive Index:	1.4683
Backscattering coef.:	-80 dB
Resolution:	1 m
Pulse Width:	320 ns
Number of Averages:	15
Length:	10.65507 km
Total Loss:	2.216 dB
ORL:	30.9 dB
Latency:	0.052 ms

#		Distance, km	Loss, dB	Reflectance, dB	Attenuation Coef., dB/km	Cumul. Loss, dB
[0	R	0.00000		-39.2		
1	S	2.09897	0.030		0.209	0.469
2	S	3.60477	0.060		0.186	0.809
3	S	7.35759	0.062		0.196	1.606
4]	R	10.65507		-39.5	0.185	2.216

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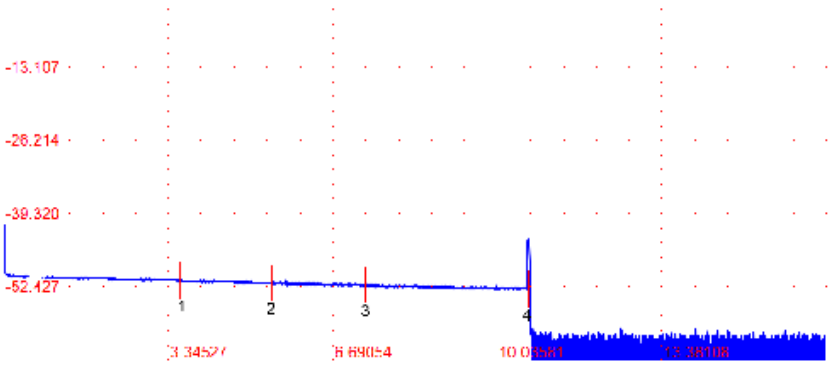
HILO 10 PRUEBA PROCISA 90S.sor



X: [0.00000, 16.72635] km: 3.34527 km/div
Y: [-65.534, 0.000] dB; 13.107 dB/div

22.11.2024 11:18:25
FCS00 #0901001
1550.0 nm

Job:	
Cable:	
Fiber:	194
Trace:	
Fiber Type:	
Originating Location:	start position
Terminating Location:	end position
Operator:	JOSE NUNES
Comment:	
Refractive Index:	1.4683
Backscattering coef.:	-80 dB
Resolution:	1 m
Pulse Width:	320 ns
Number of Averages:	15
Length:	10.65507 km
Total Loss:	2.253 dB
ORL:	30.9 dB
Latency:	0.052 ms

#		Distance, km	Loss, dB	Reflectance, dB	Attenuation Coef., dB/km	Cumul. Loss, dB
[0	R	0.00000		-39.2		
1	S	3.59660	0.045		0.212	0.807
2	S	5.44342	0.070		0.183	1.215
3	S	7.35146	0.073		0.185	1.641
4]	R	10.65507		-39.2	0.185	2.253

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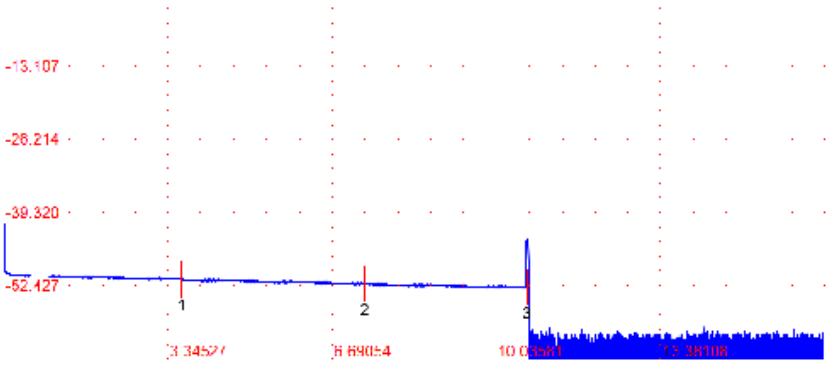
HILO 11 PRUEBA PROCISA 90S.sor



X: [0.00000, 16.72635] km: 3.34527 km/div
Y: [-65.534, 0.000] dB; 13.107 dB/div

22.11.2024 11:21:21
FC500 #0901001
1550.0 nm

Job:	
Cable:	
Fiber:	197
Trace:	
Fiber Type:	
Originating Location:	start position
Terminating Location:	end position
Operator:	JOSE NUNES
Comment:	
Refractive Index:	1.4683
Backscattering coef.:	-80 dB
Resolution:	1 m
Pulse Width:	320 ns
Number of Averages:	15
Length:	10.65507 km
Total Loss:	2.201 dB
ORL:	30.9 dB
Latency:	0.052 ms

#		Distance, km	Loss, dB	Reflectance, dB	Attenuation Coef., dB/km	Cumul. Loss, dB
[0	R	0.00000		-39.2		
1	S	3.60273	0.047		0.212	0.811
2	S	7.35963	0.067		0.190	1.592
3]	R	10.65507		-39.7	0.185	2.201

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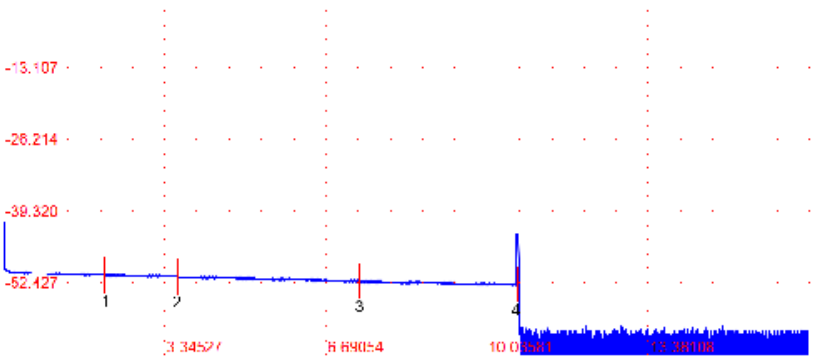
HILO 12 PRUEBA PROCISA 90S.sor



X: [0.00000, 16.72635] km; 3.34527 km/div
Y: [-65.534, 0.000] dB; 13.107 dB/div

22.11.2024 11:24:56
FC500 #0901001
1550.0 nm

Job:	
Cable:	
Fiber:	199
Trace:	
Fiber Type:	
Originating Location:	start position
Terminating Location:	end position
Operator:	JOSE NUNES
Comment:	
Refractive Index:	1.4683
Backscattering coef.:	-80 dB
Resolution:	1 m
Pulse Width:	320 ns
Number of Averages:	15
Length:	10.65507 km
Total Loss:	2.203 dB
ORL:	30.9 dB
Latency:	0.052 ms

#		Distance, km	Loss, dB	Reflectance, dB	Attenuation Coef., dB/km	Cumul. Loss, dB
[0	R	0.00000		-39.3		
1	S	2.08978	0.029		0.211	0.470
2	S	3.60579	0.061		0.186	0.813
3	S	7.38209	0.067		0.190	1.597
4]	R	10.65507		-38.5	0.185	2.203

CONCLUSION TECNICA:

- Si el problema persiste se sugiere cambiar el Blade de corte de la cortadora.

Firmado electrónicamente por:
JOSE LEONARDO NUNES GONZALEZ