





MHF[®] Series - Micro RF Coaxial Connectors








Click the photos below to get more detailed product information.

Product name		MHF [®] I LK	MHF [®] I	MHF [®] I	MHF [®] III
Appearance					
		MHF I with mechanical lock	Best Insertion Loss	Most Cable O.D. options	low profile 1.60 mm
Plug part number		-	20767-001R	20278-112R-**	20609-002R
Receptacle part number			20279-001E-** (3 pads) 20441-001E-01 (4 pads)		20369-001E-**
Maximum height (mm)		2.9	3.0	2.5	1.6
Outside dimension of receptacle (mm)			3.0 x 3.0		2.0 x 2.0
Coax O.D. (Center Conductor AWG)	2.00 mm (26)		●		
	1.80 mm (30)	●		●	
	1.37 mm (30)	●		●	
	1.32 mm (32)	●		●	
	1.13 mm (32)	●		●	
	0.95 mm (33)				
	0.81 mm (33)				
	0.81 mm (36)	●		●	●
	0.64 mm (36)				●
	0.48 mm (38)				
Frequency			DC - 9 GHz		DC - 6 GHz
VSWR (L=100mm)	DC - 3GHz		1.3 max.(PLUG) /1.3 max.(RECE)		1.3 max.
	3GHz - 6GHz		1.5 max.(PLUG) /1.4 max.(RECE)		1.5 max.
	6GHz - 9GHz		1.9 max.(PLUG) /1.8 max.(RECE)	1.6 max.(PLUG) 1.8 max.(RECE)	-
	9GHz - 12GHz		-		
	12GHz - 15GHz		-		
Service temp. (Celsius)			-40 degree - 90 degree		
Characteristic impedance			50ohm		
Rated voltage			AC60V		
Contact resistance			20m ohm max.		
Withstand voltage			AC200V/min		
Insulation resistance			500M ohm min./DC100V		

MHF[®] Series - Micro RF Coaxial Connectors








Click the photos below to get more detailed product information.

Product name		MHF [®] 4L LK	MHF [®] 4L	MHF [®] 4L	MHF [®] 4L	MHF [®] 4
Appearance						
		MHF 4L with Mechanical lock	Best Insertion Loss and VSWR	Industry Standard for M.2	Industry Standard for M.2	low profile 1.20 mm
Plug part number		-	20632-001R-37	20565-001R-13	20572-001R-08	20611-001R
Receptacle part number		20449-001E-**(MHF 4) 20579-001E(MHF 4L)				
Maximum height (mm)		2.0	1.7	1.4	1.2	1.2
Outside dimension of receptacle (mm)		2.0 x 2.0				
Coax O.D. (Center Conductor AWG)	2.00 mm (26)					
	1.80 mm (30)					
	1.37 mm (30)	●	●			
	1.32 mm (32)					
	1.13 mm (32)			●		
	0.95 mm (33)			●		
	0.81 mm (33)					
	0.81 mm (36)				●	●
	0.64 mm (36)				●	
0.48 mm (38)						
Frequency		DC - 12 GHz				DC - 6 GHz
VSWR (L=100mm)	DC - 3 GHz	1.3 max.				
	3 GHz - 6 GHz	1.4 max.		1.45 max	1.5 max.	
	6 GHz - 9 GHz	1.5 max.		1.6 max.	-	
	9 GHz - 12 GHz	1.6 max.		1.9 max.	-	
	12 GHz - 15 GHz			-		
Service temp. (Celsius)		-40 degree - 90 degree				
Characteristic impedance		50ohm				
Rated voltage		AC60V				
Contact resistance		20m ohm max.				
Withstand voltage		AC200V/min				
Insulation resistance		500M ohm min./DC100V				

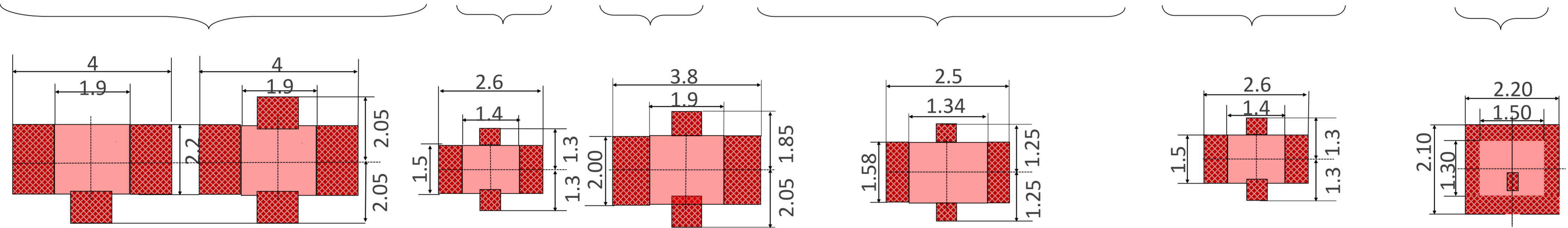
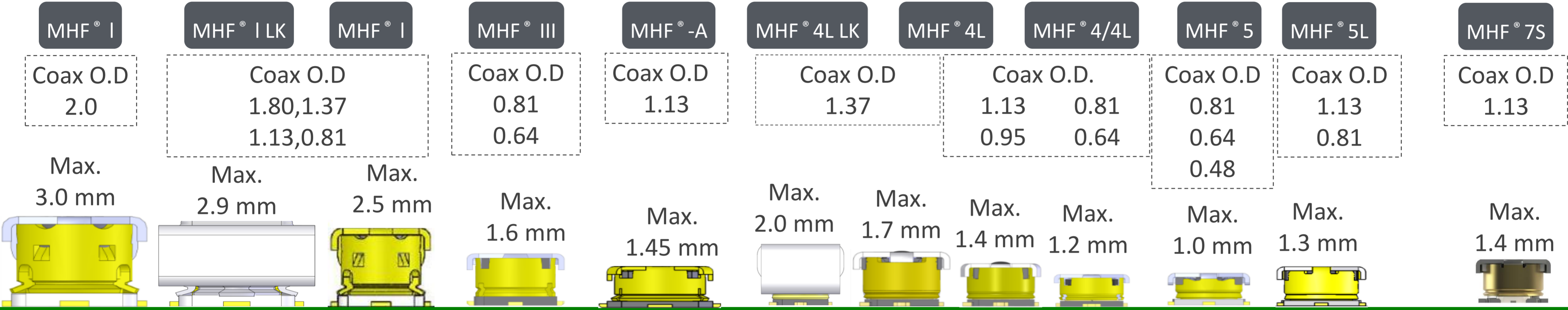
MHF® Series - Micro RF Coaxial Connectors



Click the photos below to get more detailed product information.














Product name		MHF® 5L	MHF® 5L	MHF® 5	MHF® 5	MHF® 7S
Appearance						
		Improved Insertion Loss and VSWR through 15GHz	Improved Insertion Loss and VSWR through 15GHz	low profile 1.00 mm	low profile 1.00 mm	Unique shielded design increases EMC performance
Plug part number		20668-001R-13	20714-001R-81	20711-001R-81	20615-002R-48	20980-001R-13
Receptacle part number		20566-001E-01				20981-001E-02
Maximum height (mm)		1.3		1.0		1.4
Outside dimension of receptacle (mm)		2.0 x 2.0				2.0 x 2.0
Coax O.D.(Center Conductor AWG)	2.00 mm (26)					
	1.80 mm (30)					
	1.37 mm (30)					
	1.32 mm (32)					
	1.13 mm (30)					
	1.13 mm (32)	●				●
	0.95 mm (33)					
	0.81 mm (33)		●			
	0.81 mm (36)			●		
	0.64 mm (36)			●		
0.48 mm (38)				●		
Frequency		DC - 15GHz		DC - 12GHz		DC - 15GHz
VSWR (L=100mm)	DC - 3GHz	1.3 max.				1.3 max.
	3GHz - 6GHz	1.4 max.		1.5 max.		1.35 max.
	6GHz - 9GHz	1.5 max.		1.6 max.		1.4 max.
	9GHz - 12GHz	1.5 max.		1.7 max.	1.6 max.	1.45 max.
	12GHz - 15GHz	1.6 max.		-		1.5 max.
Service temp. (Celsius)		-40 degree - 90 degree				
Characteristic impedance		50ohm				
Rated voltage		AC60V				
Contact resistance		20m ohm max.				
Withstand voltage		AC200V/min				
Insulation resistance		500M ohm min./DC100V				

Micro RF coax connector : Foot pattern



MHF[®] I Rece 3Pad MHF[®] I Rece 4Pad MHF[®] III Rece MHF[®] -A Rece MHF[®] 4/4L Rece MHF[®] 5/5L Rece MHF[®] 7S Rece

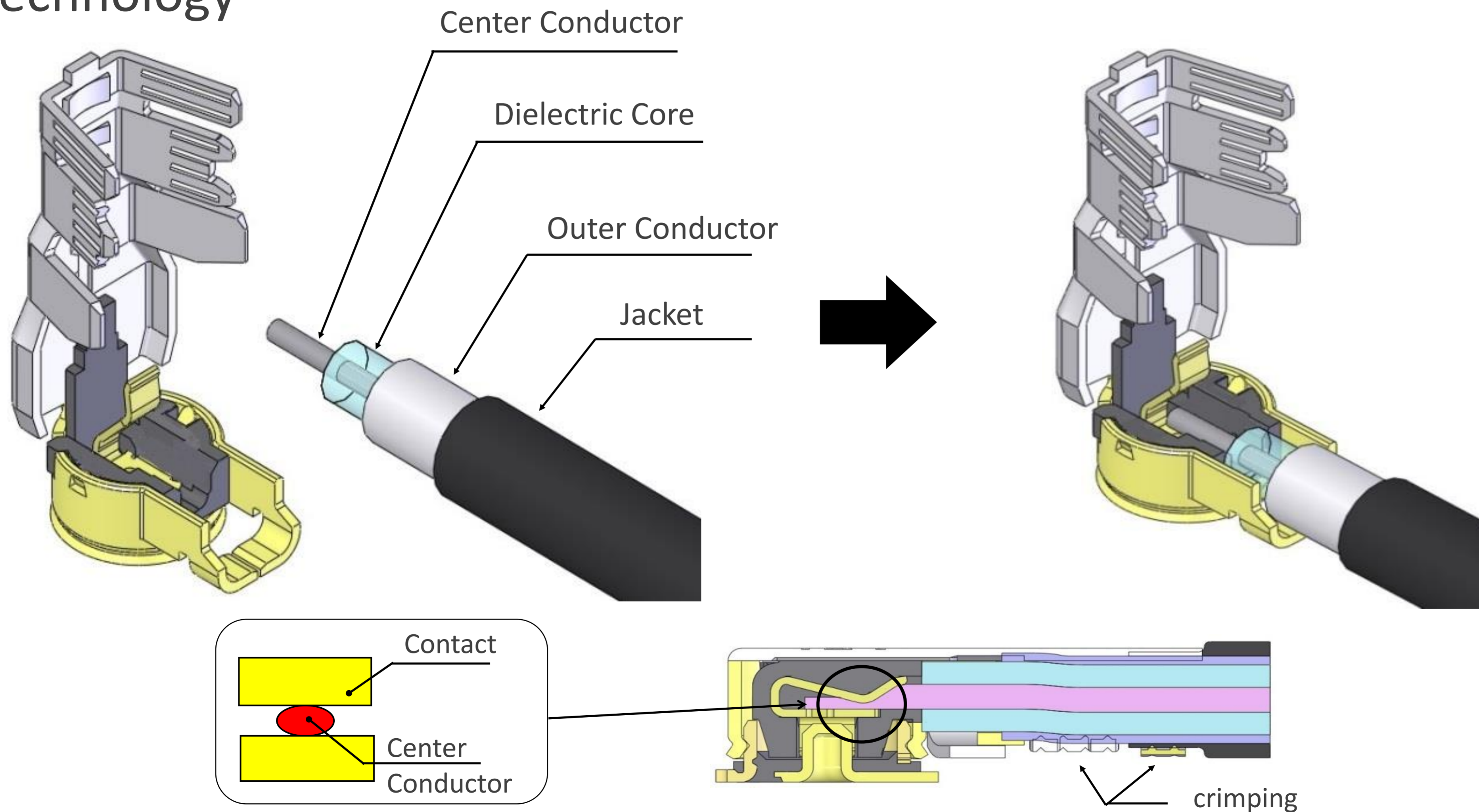
Accessory overview

Product			MHF® I	MHF® I LK	MHF® III	MHF® -A	MHF® 4	MHF® 4L	MHF® 4L LK	MHF® 5	MHF® 7S			
SMA adapter	for Plug	Durability (cycles)												
		for electrical performance check	3K		90193-001	90285-001	90413-001	90449-001		90543-0001	91255-0001			
		for voltage check	10K		90194-001	90286-001	-	90449-003-01		90586-0001	91245-0001			
	for Receptacle	Normal	for electrical performance check	500		90193-002	90285-002	90413-002	90449-002		90543-0002	91256-0001		
					SMA Type	Jack	Jack	Jack	Jack		Jack	Jack		
		High cycle	Narrow pitch	Normal	10K		90539-001	90491-001	90539-001	90698-0001		90793-0001	-	
				Wire	100		90577-0100 (100mm) 90577-0350 (350mm)	-	90577-0100 (100mm) 90577-0350 (350mm)		91197-0300			
			Probe	10K		90575-0001	-	90575-0001	90576-0001		90847-0001	91145-0001		
			Detachable	Base	200K		90684-0001							-
				Probe	10K		90416-001	-	90416-001	90683-0001		90690-0001	-	
Hand tool	Mating and unmating tool			90224-001 90885-0001 (for 20767-001R)	-	-	-	90435-001	90609-0001 (for 20572-001R-08 / 20565-001R-13) 90873-0001 (for 20632-001R-37)	-	90612-0001	91186-0001		
	Unmating tool			90192-001	-	90287-001	90411-001	-	-	-	-	-		
	Mating tool			-	-	-	-	-	-	-	90624-0001	-		
	Mating and unmating tweezers			-	-	90501-001	-	90482-001	90616-0008 90615-0013	-	-	-		
	Locking and unlocking tool			-	91026-0001	-	-	-	-	91166-0001	-	-		

MHF[®] Harnesses

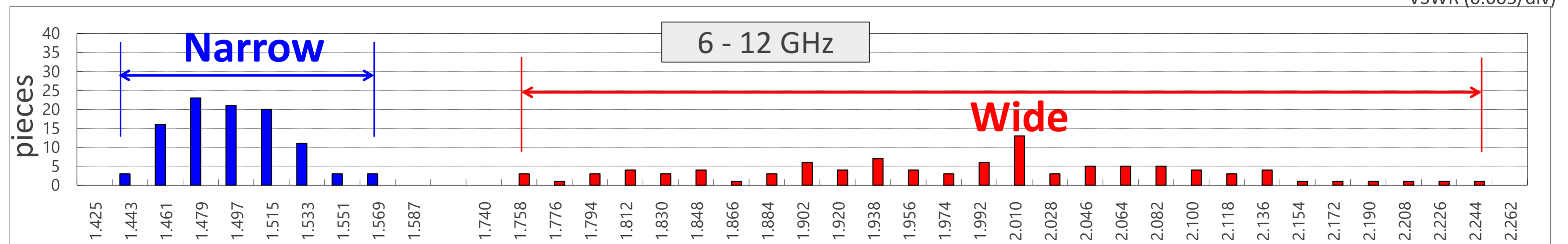
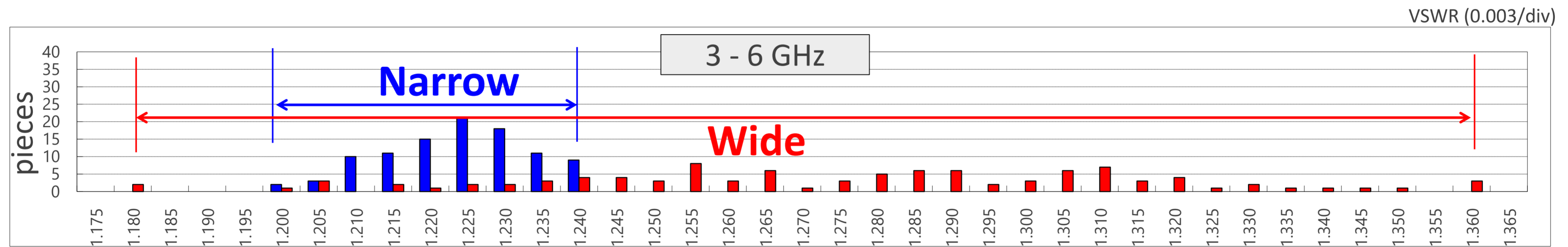
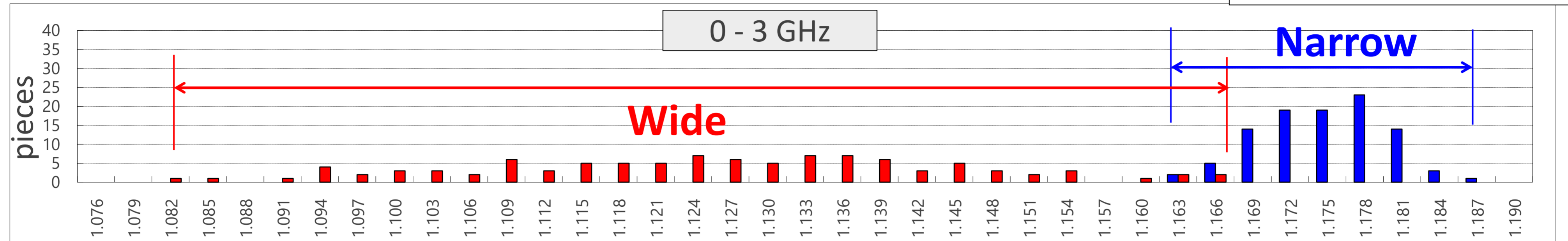
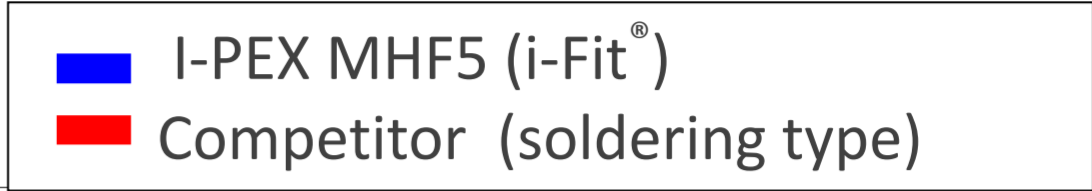
Micro RF coax connector : Wire crimp termination technology

i-Fit[®] Technology



Solder-less crimp “i-Fit[®]” advantage versus soldering types

i-Fit[®] offers consistently tight range of performance



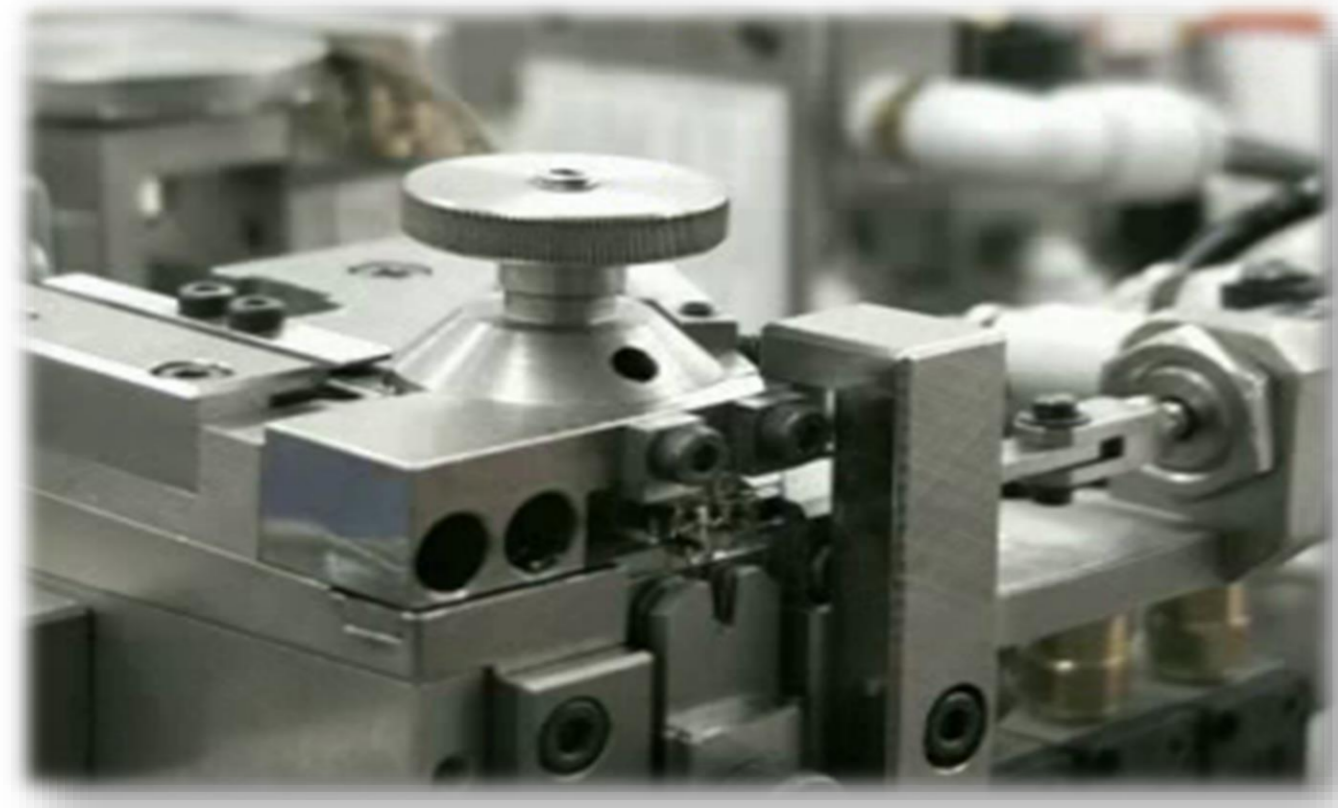
VSWR S11 Histogram

Solder-less crimp “i-Fit[®]” advantage versus manual soldering types

Significantly reduced tact time with i-Fit[®]

		I-PEX MHF "i-Fit"	Manual Soldering
Tact time	Wire strip	Same tact time	
	Termination	6 seconds/ea.	30 seconds/ea.
Qty of cable assemblies a worker can make per month		105,600 assemblies	21,120 assemblies
# of operator needed	1M cable assemblies/mo	10	48
	2M cable assemblies/mo	19	95

*Calculated based on operation hours of 22days/mo (8hours/day)

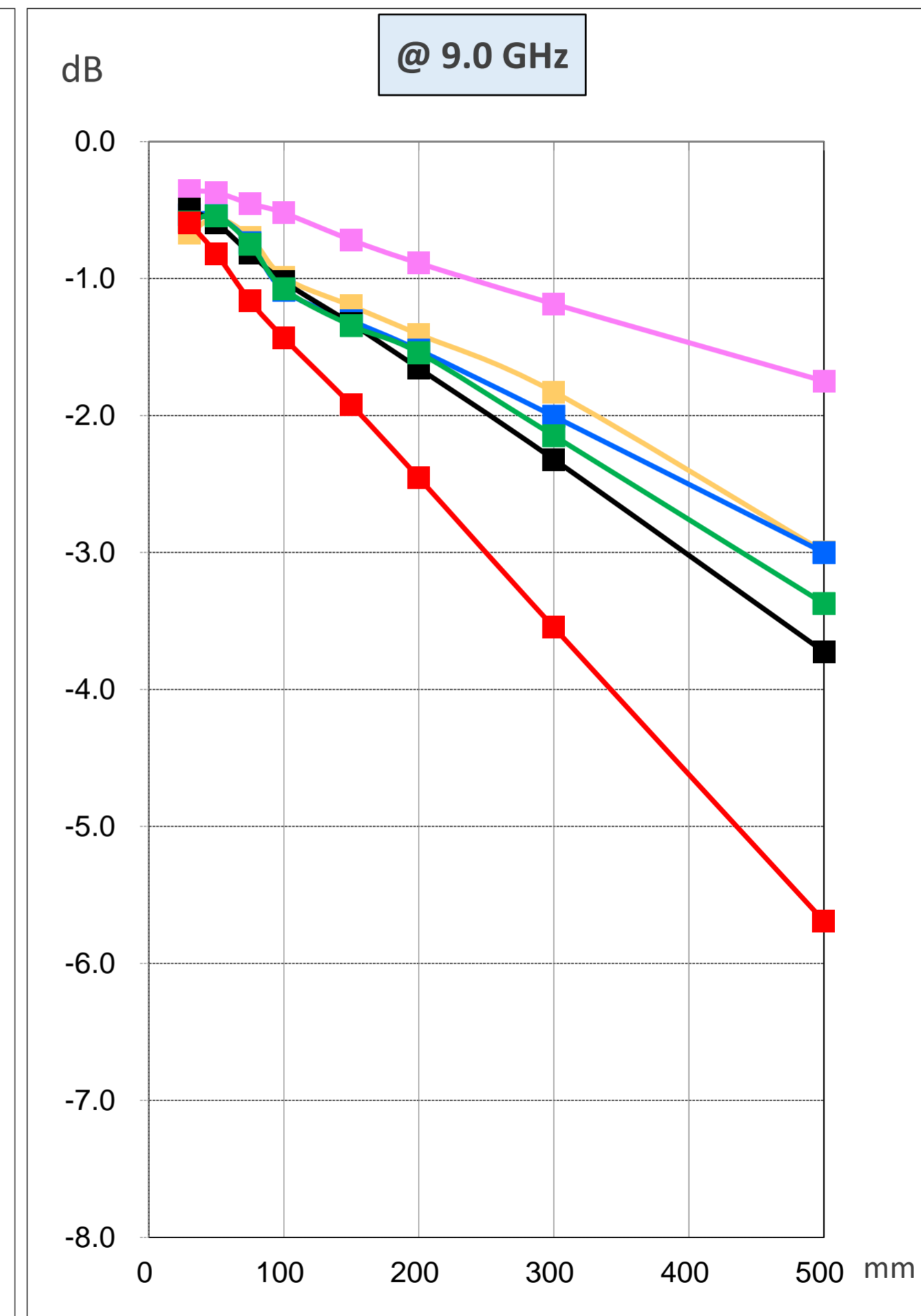
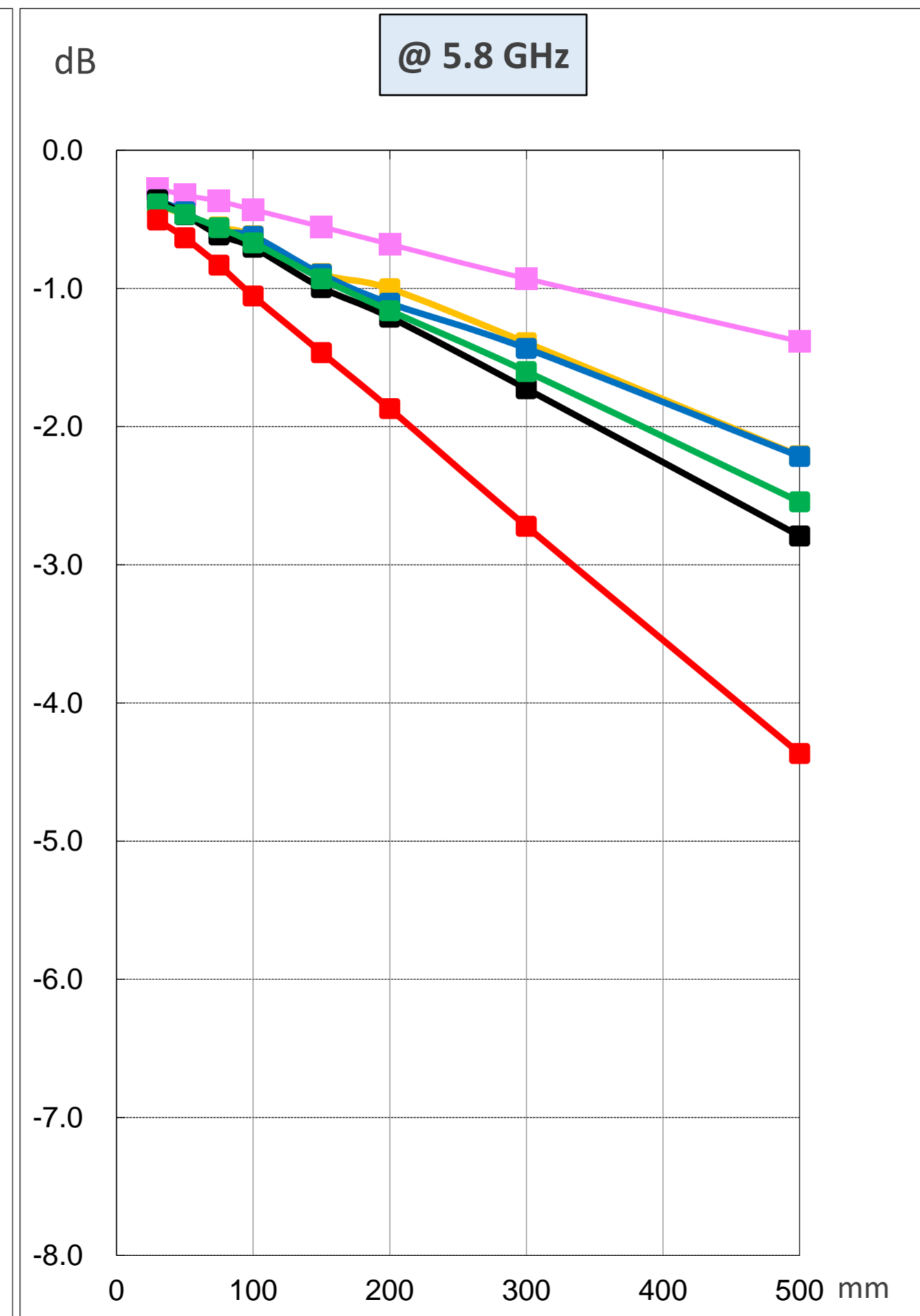
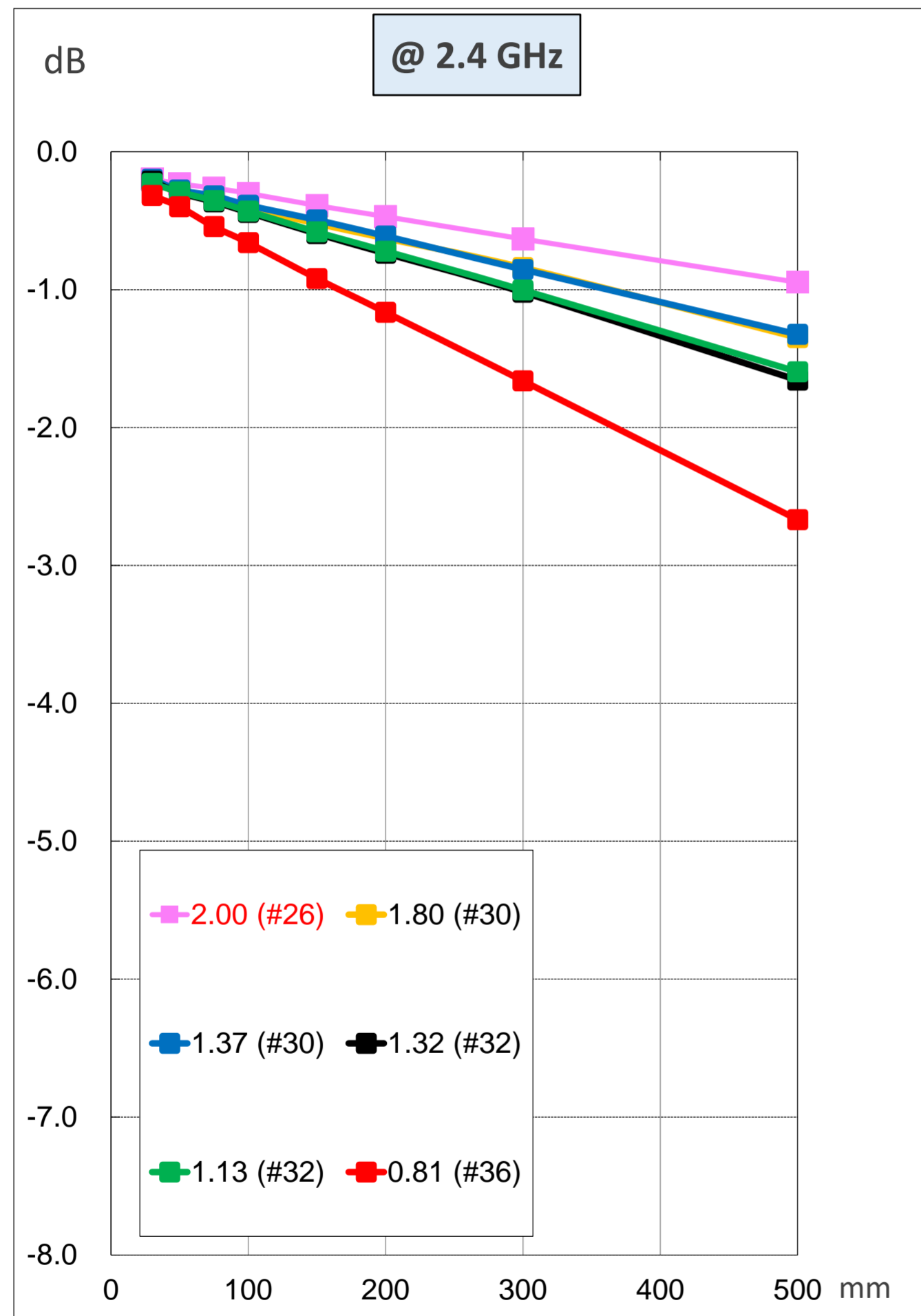


i-Fit Semi-Auto crimp tool :

I-PEX has sold over 1,000 units of i-Fit crimping tool. These are working in many antenna / harness makers around the world.

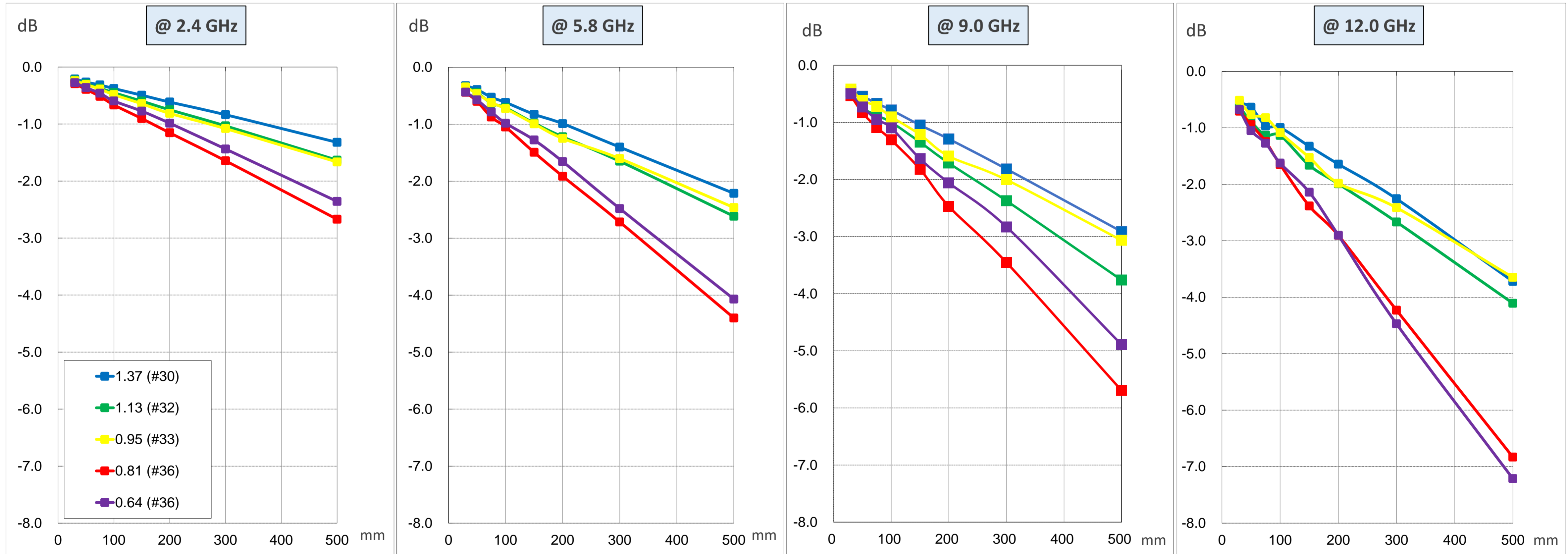
Wire insertion loss (MHF[®] I)

Harness Length (mm) vs Insertion Loss (S21)



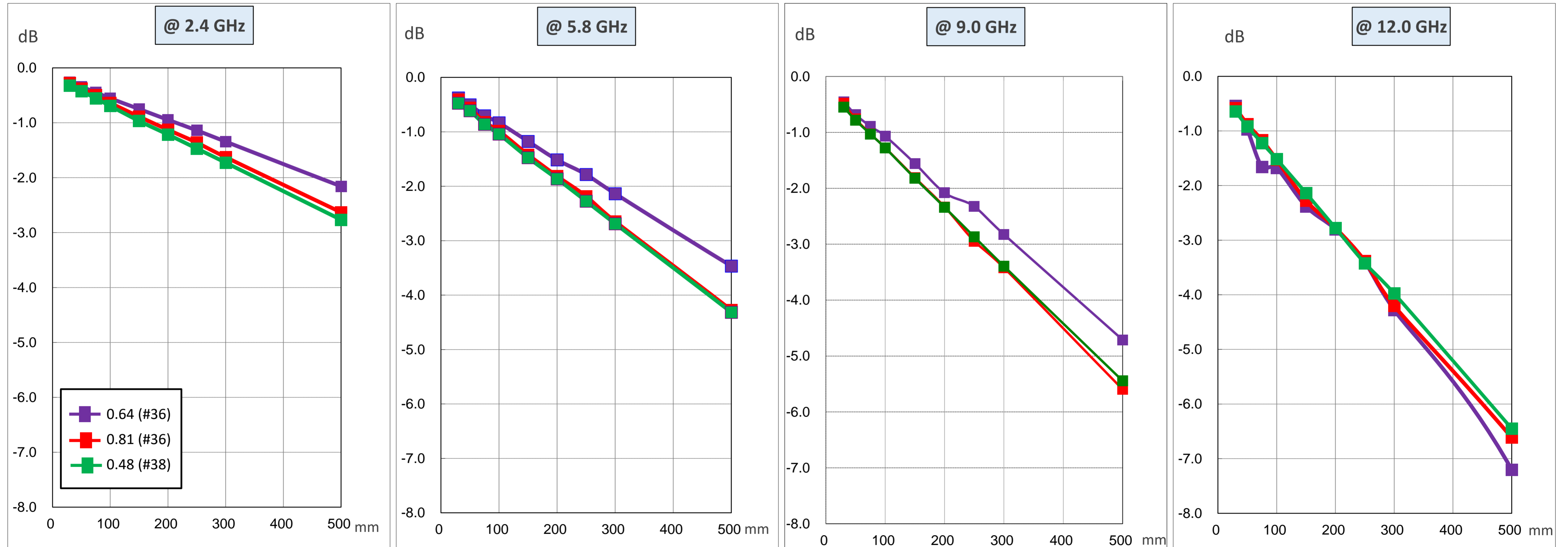
Wire insertion loss (MHF[®] 4L)

Harness Length (mm) vs Insertion Loss (S21)



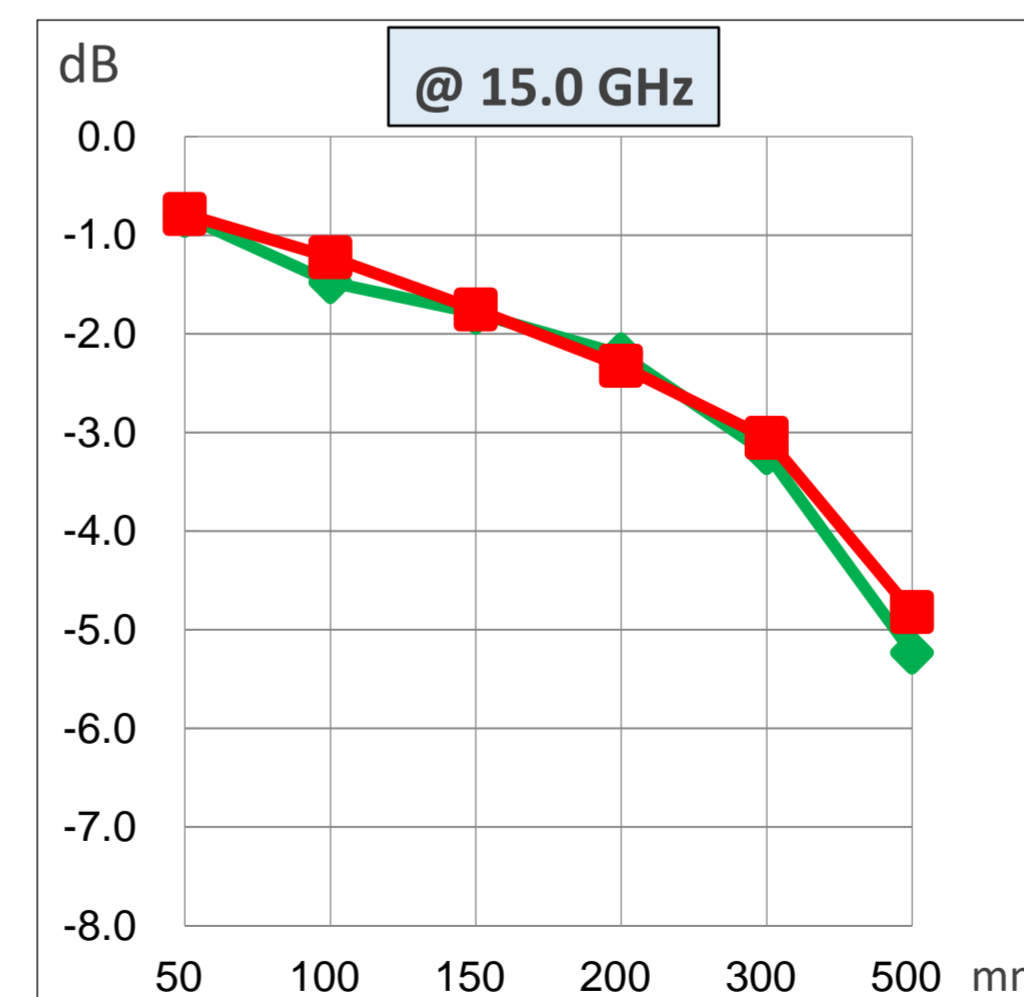
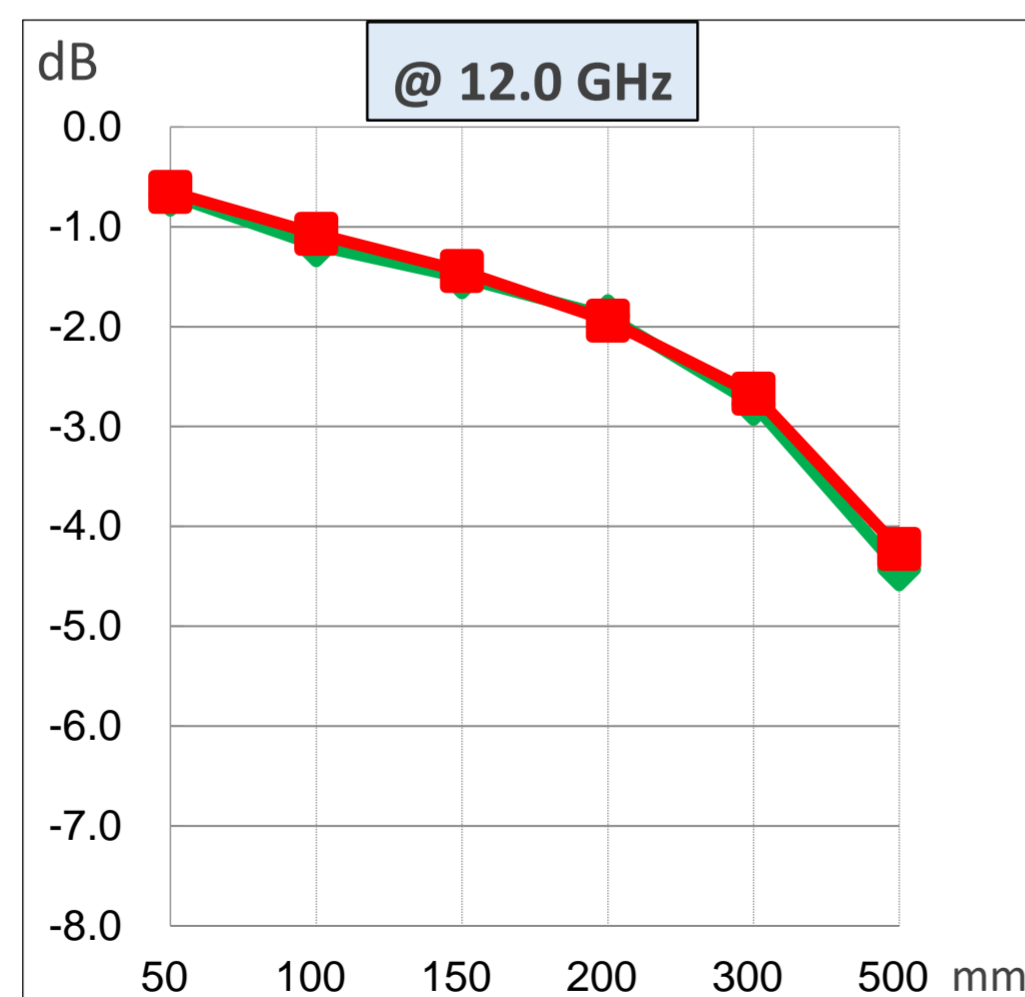
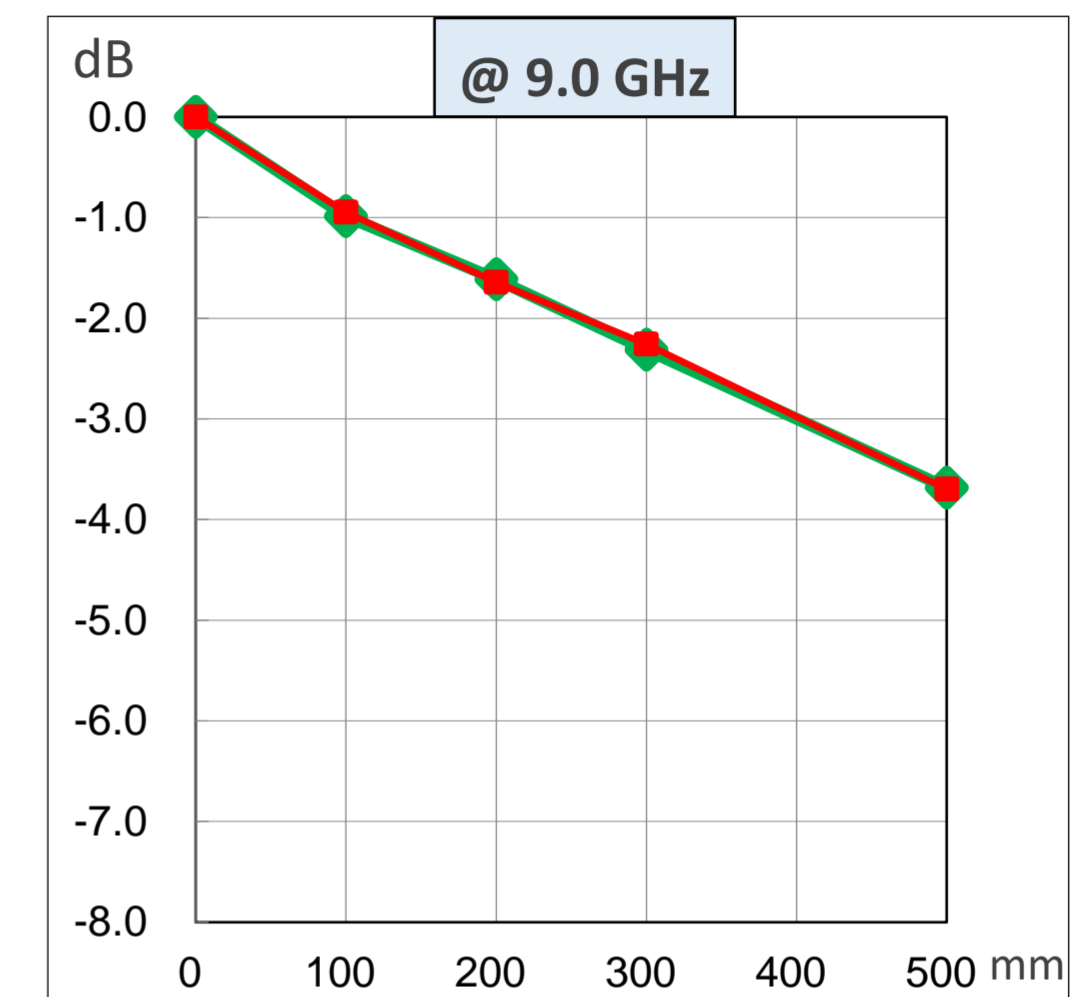
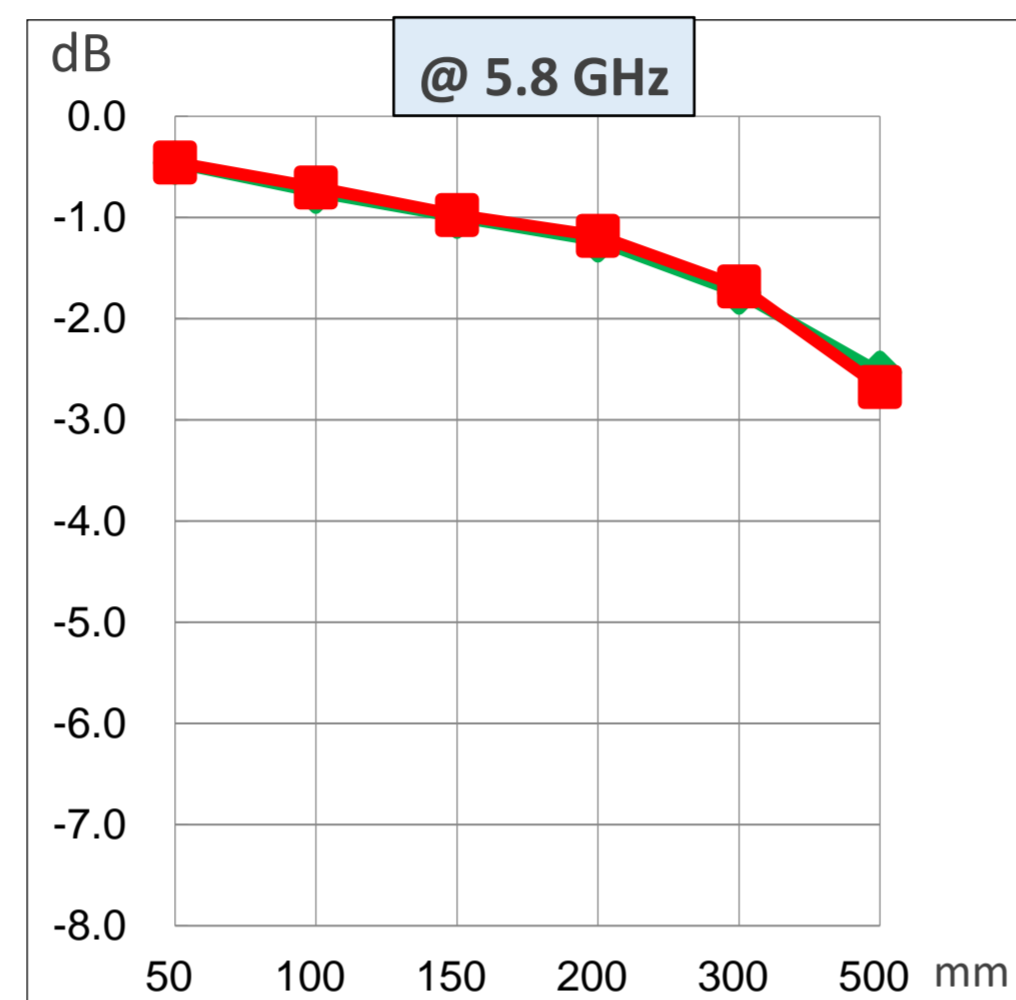
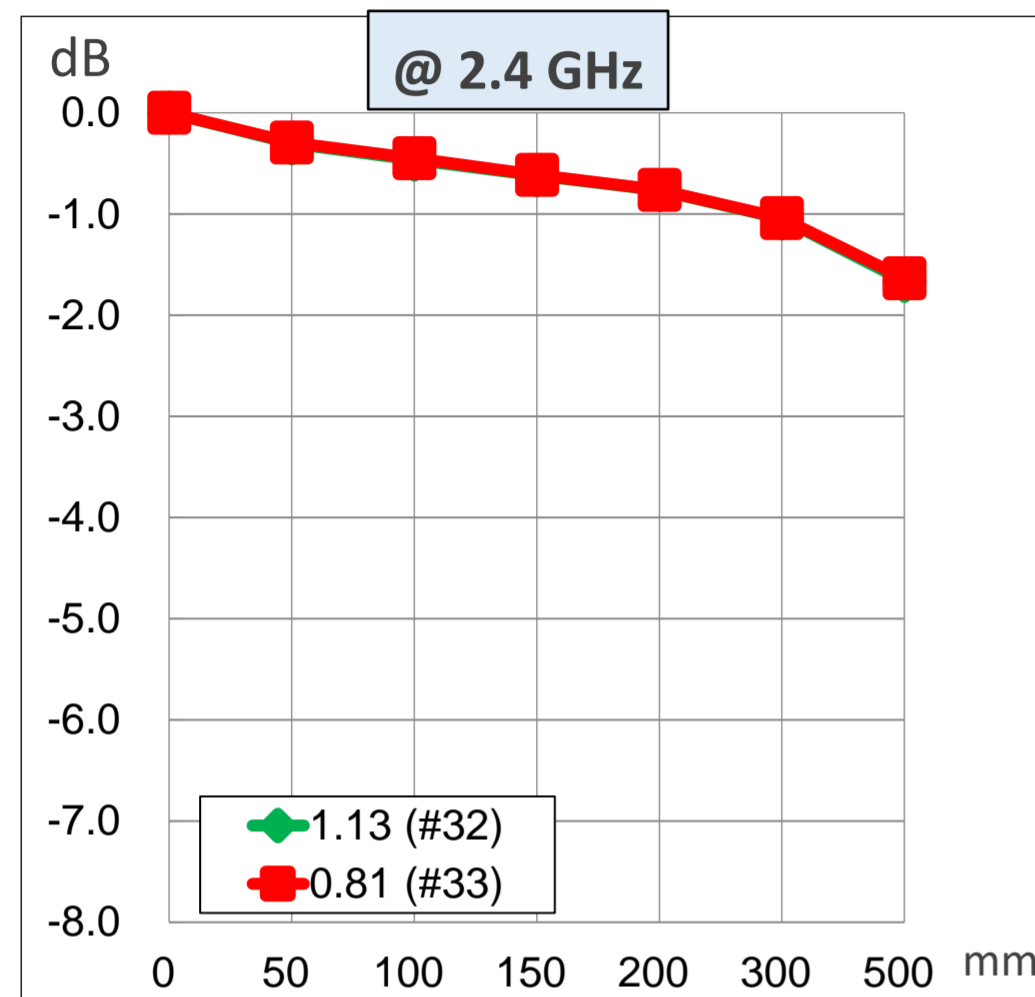
Wire insertion loss (MHF[®] 5)

Harness Length (mm) vs Insertion Loss (S21)



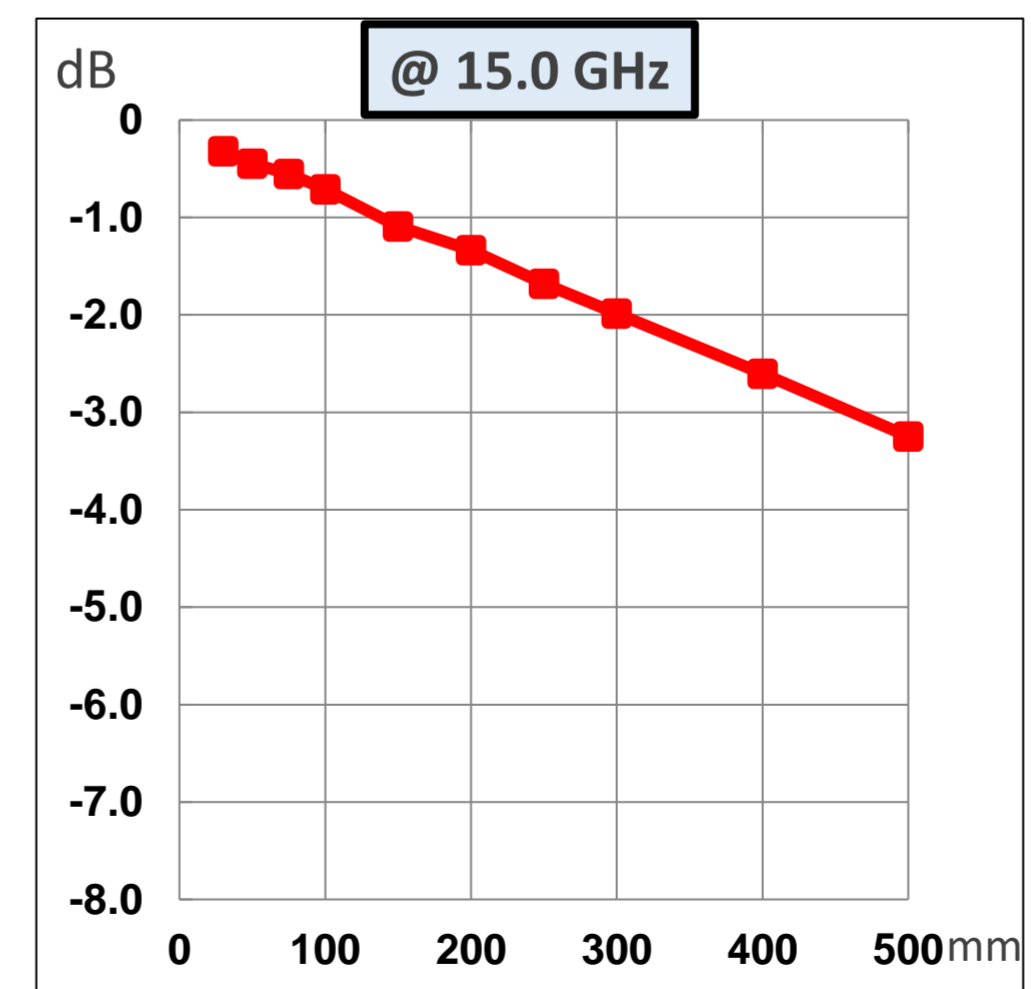
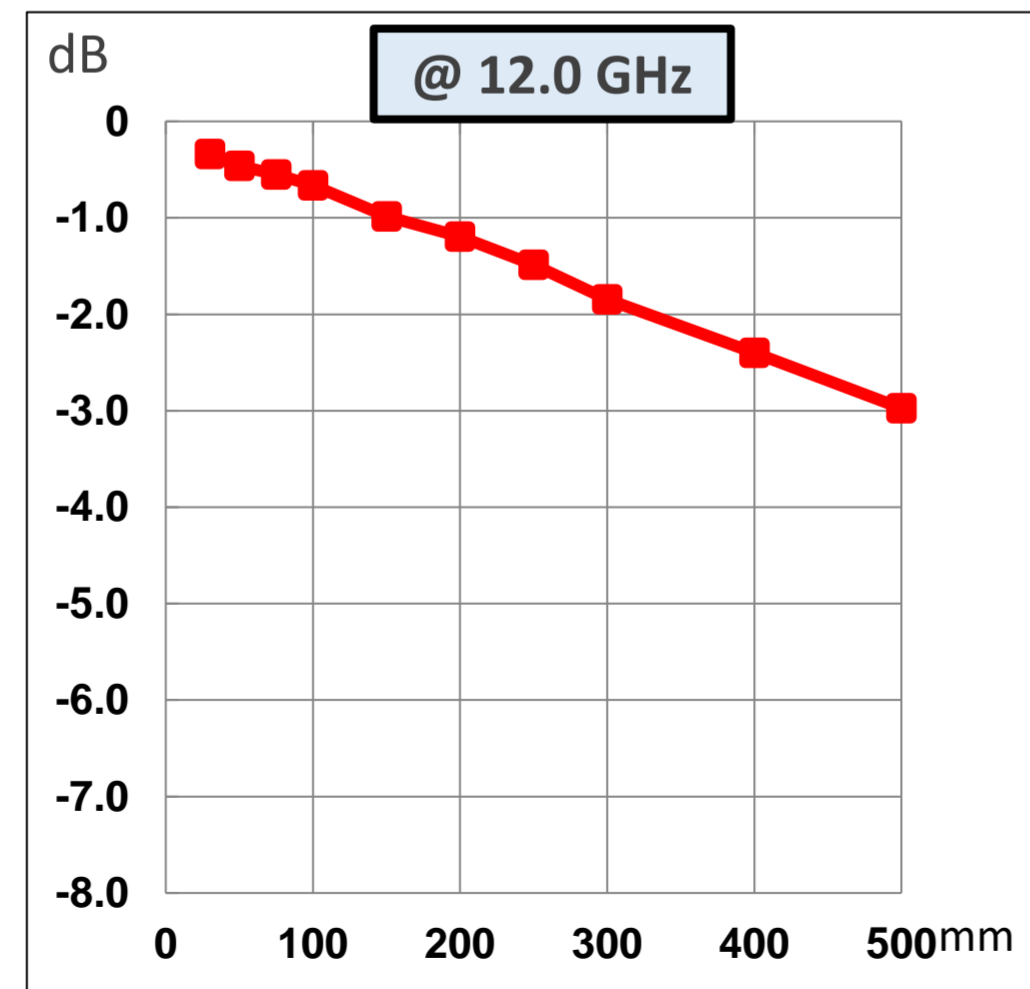
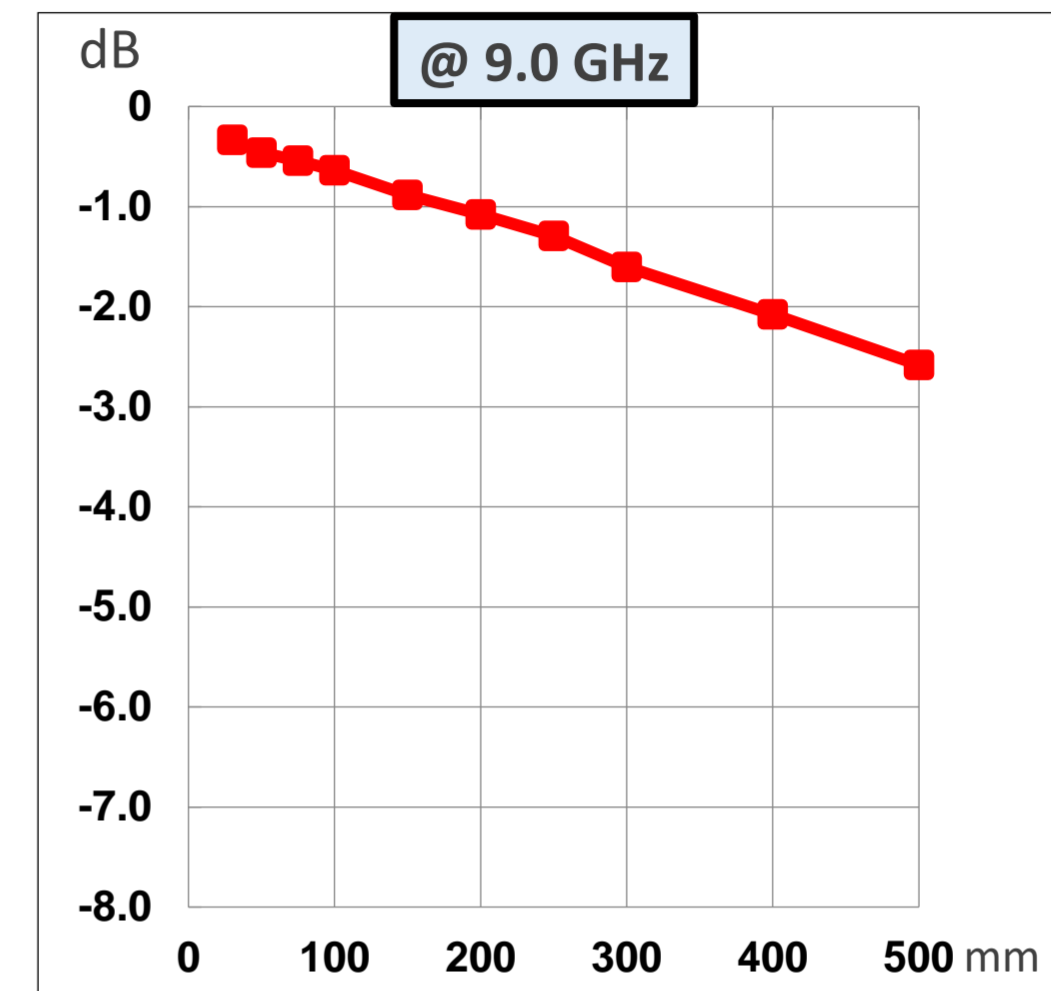
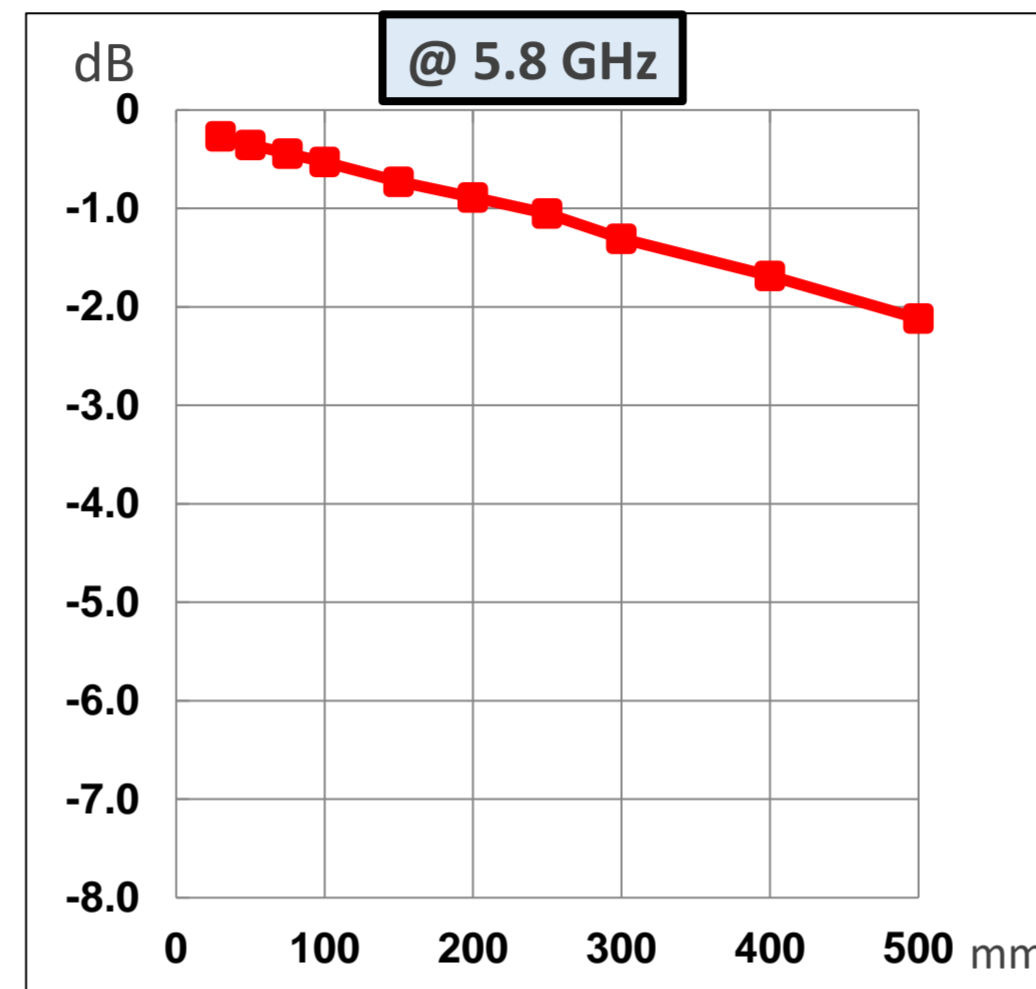
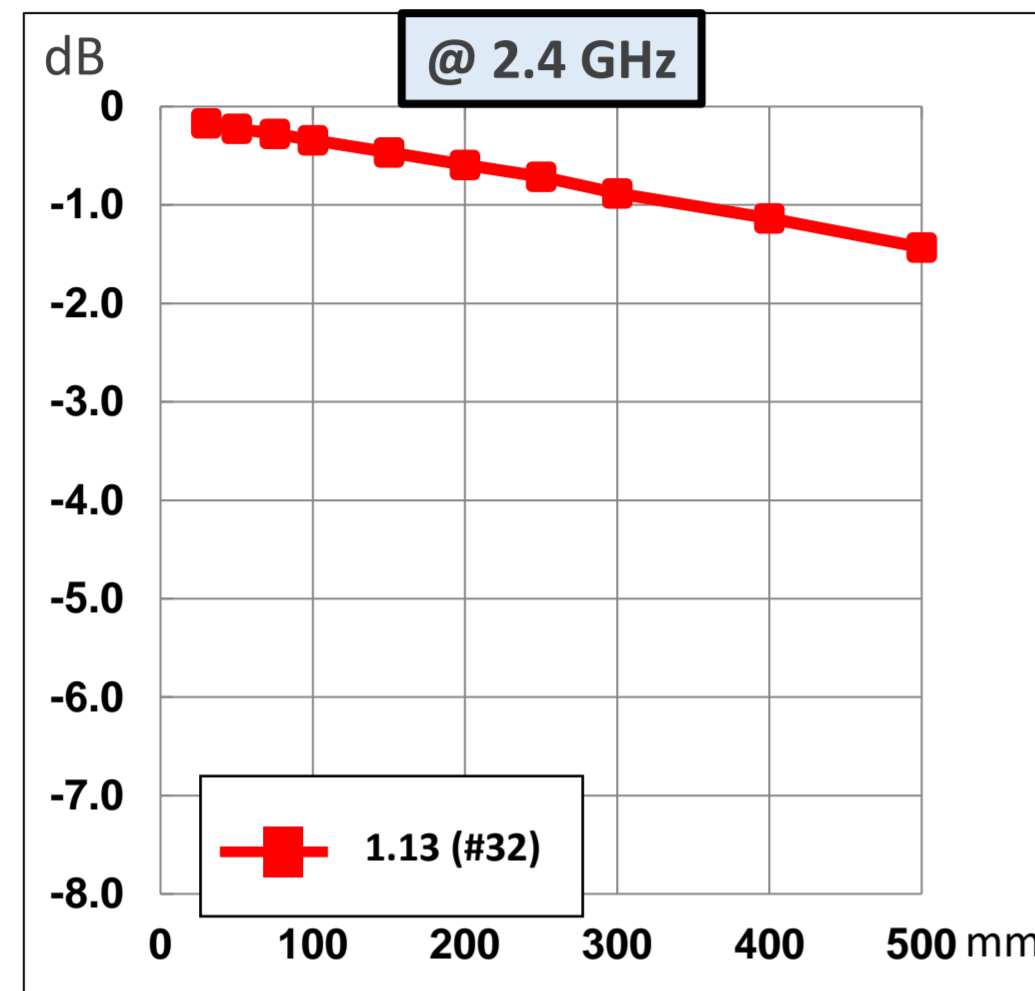
Wire insertion loss (MHF[®] 5L)

Harness Length (mm) vs Insertion Loss (S21)



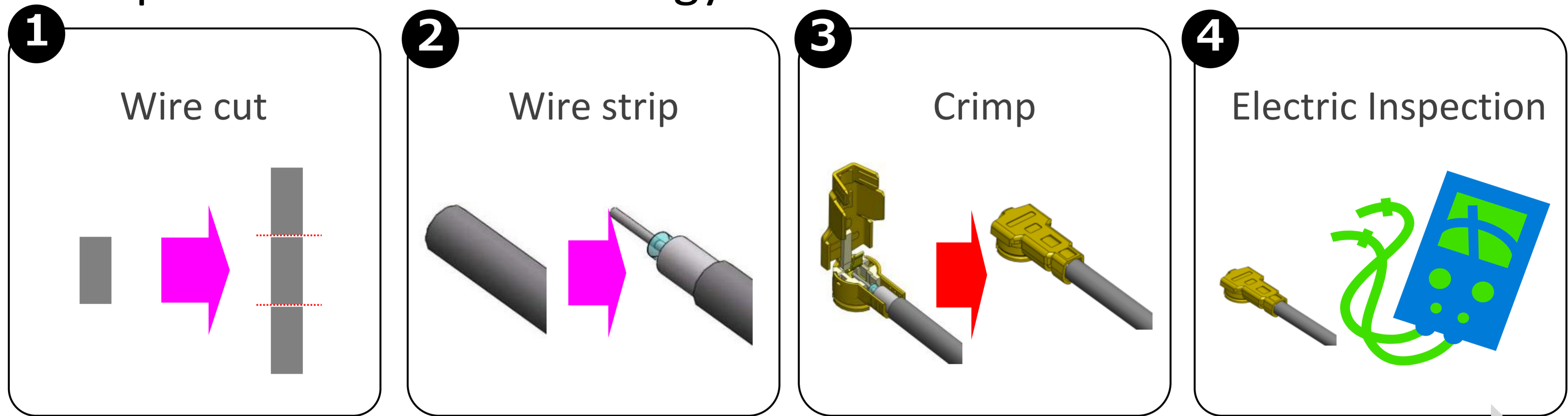
Wire insertion loss (MHF[®] 7S)

Harness Length (mm) vs Insertion Loss (S21)



Yes, I-PEX provides harness assemblies!



...And they are made with Fully Automated Machines and our patented i-Fit[®] technology!!!



Fully Automated Process



Wire clamp and surface mount clip for grounding

		Grounding clamp 3mm length	Grounding clamp 6mm length	Clip for grounding clamp MP-A series
Appearance				
Coax O.D. (Center Conductor AWG)	1.37 mm (30)		●	● MP-A04 (P/N 3224-0001)
	1.13 mm (32)	●	●	● MP-A02 (P/N 3182-0001)
	0.81 mm (36)	●	●	● MP-A01 (P/N 3096-0001)
	0.64 mm (36)	●	●	● MP-A03 (P/N 3186-0001)

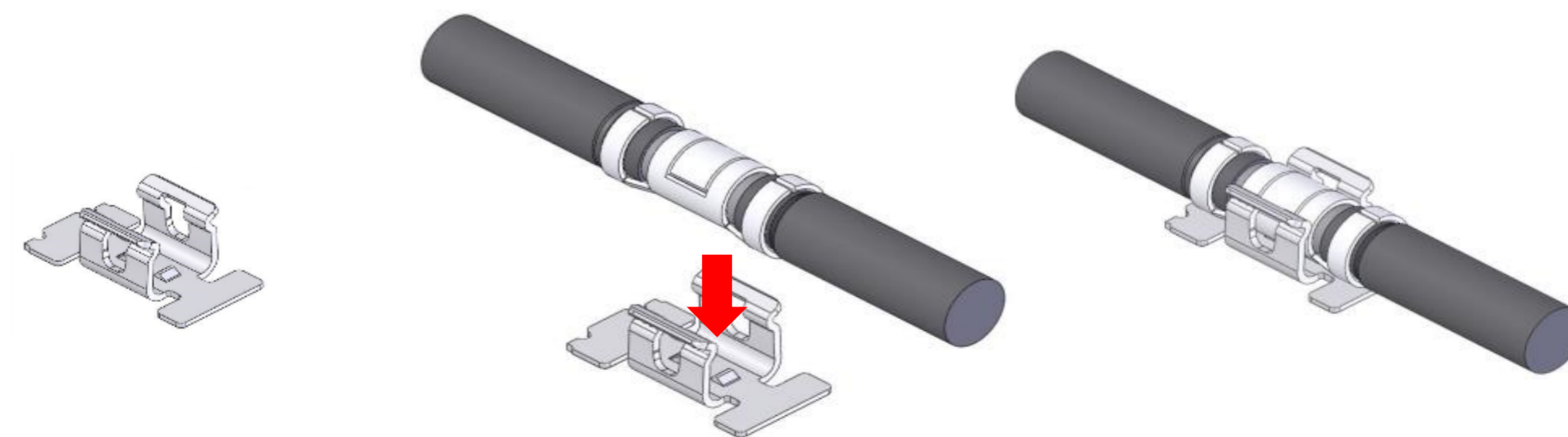
Minimum distance between clamps



A	B	C
12mm min.	10mm min.	10mm min.

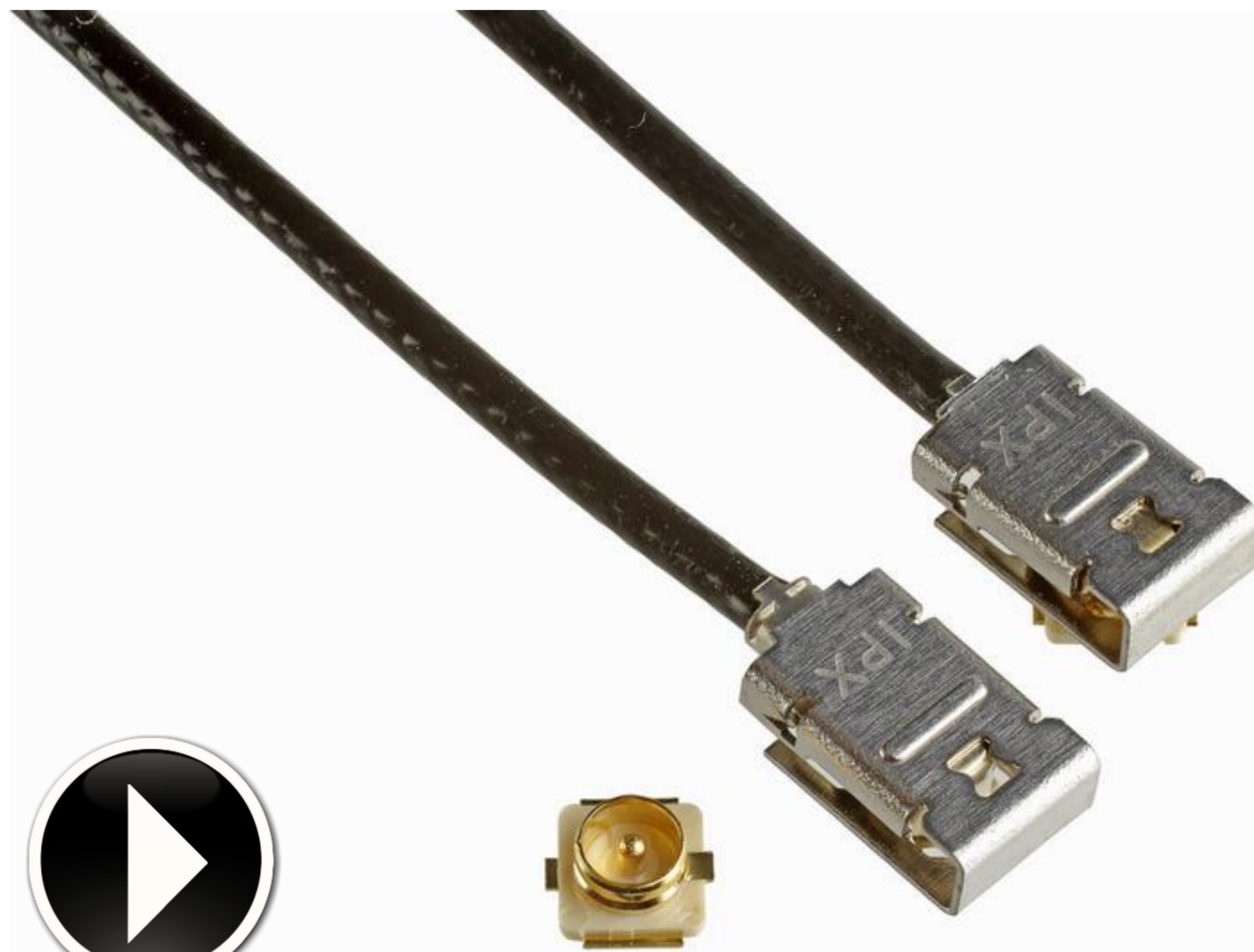
*Depending on the harness specifications, this condition may not apply. Please contact our sales for details.

Clips are packaged in tape and reel for surface mount.

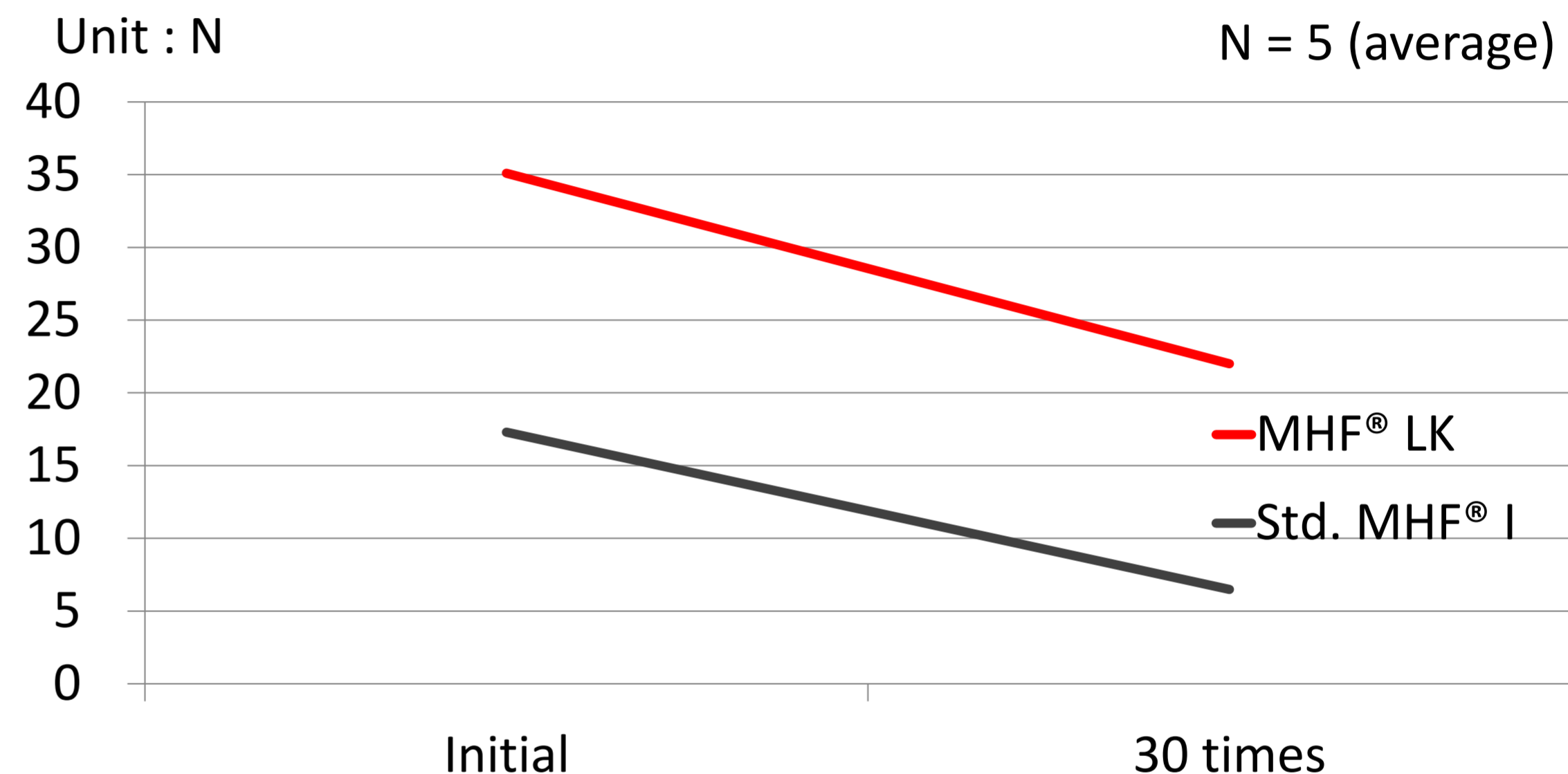


MHF[®] I LK

Built-in locking function for MHF I



Disengagement Force Comparison



Series	MHF [®] I LK		Standard MHF [®] I	
	Initial	30 times*	Initial	30 times
SPEC.	20 MIN.	10 MIN.	5 MIN.	3 MIN.


* Reference Value







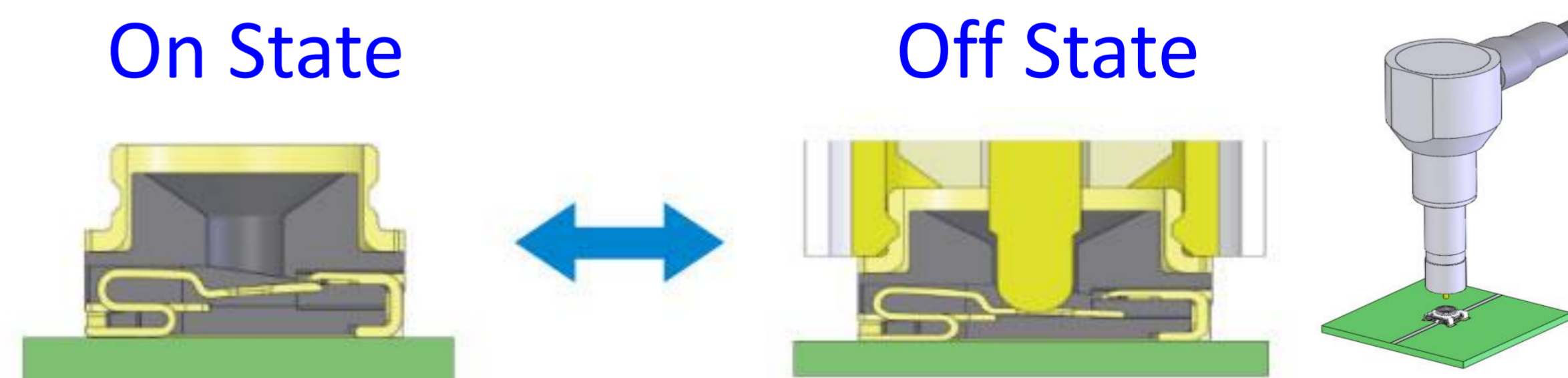
MHF[®] SW Series

MHF[®]-SW series product overview

Click the photos below to get more detailed product information.

Product name		MHF [®] -SW23
Feature		
		Contaminant discontinuity resistant design 2.3 x 2.3 mm footprint
Part number		20549-001E/-01
Dimension (mm)		2.3 x 2.3 x 1.35 (H)
Rated power		2W max.
Frequency		DC - 11.0GHz
V.S.W.R.	DC - 3.0GHz	1.2 max. (DC - 2.5GHz)
	3.0GHz - 6.0GHz	1.3 max. (2.5 - 6.0GHz)
	6.0GHz - 11.0GHz	1.5 max.
Insertion loss	DC - 3.0GHz	0.15 dB max. (DC - 2.5GHz)
	3.0GHz - 6.0GHz	0.20 dB max. (2.5 - 6.0GHz)
	6.0GHz - 11.0GHz	0.40 dB max.
Isolation	DC - 3.0GHz	20 dB Max. (DC - 2.5GHz)
	3.0GHz - 6.0GHz	15 dB max.
	6.0GHz - 11.0GHz	12 dB max.
Service temp. (Celsius)		40 degree - 85 degree
Characteristic impedance		50 ohm
Contact resistance	Signal contact	100m ohm
	Ground contact	100m ohm
Insulation resistance		DC100 1000M ohm min :Initial 10M ohm min :After test
Withstand voltage		AC 100V: 1min






Product name		MHF [®] -SW23		
Appearance				
Probe	Manual probe		Friction lock	90582-**** *(0300/0400)
			Mechanical lock	-
	Durability		-	1K Cycles
	High cycle	without floating		90604-0001
Durability		10K Cycles		
with floating			90605-0001	
Durability			200K Cycles	







2.4 mm RF CONNECTOR



Click the photos below to get more detailed product information.

Product name	2.4 mm RF CONNECTOR CONVERSION ADAPTER PLUG TO PLUG	2.4 mm RF CONNECTOR CONVERSION ADAPTER JACK TO JACK	2.4 mm RF CONNECTOR CONVERSION ADAPTER PLUG TO JACK	2.4 mm RF CONNECTOR END LAUNCH ADAPTER FOR PCB (PLUG)	2.4 mm RF CONNECTOR END LAUNCH ADAPTER FOR PCB (JACK)
Appearance					
Part number	50201-0001	50201-JJ01	50201-0J01	50202-0001	50202-J001
Type	Conversion adapter			End Launch adapter	
	Plug to Plug	Jack to Jack	Plug to Jack	Plug	Jack
Frequency	DC~50GHz				

Product name	2.4 mm RF CONNECTOR ADAPTER FOR PCB (INNER LAYER)	2.4 mm RF CONNECTOR ADAPTER FOR PCB (OUTER LAYER)	2.4 mm RF CONNECTOR TERMINATION ADAPTER (PLUG)	2.4 mm RF CONNECTOR TERMINATION ADAPTER (JACK)
Appearance				
Part number	50203-J001	50204-J001	50205-0001	50205-J001
Type	Panel mount adapter		Termination adapter(Nonreflective terminator)	
	Jack	Jack	Plug	Jack
Frequency	DC~50GHz			

Appendix : I-PEX Connectors Series



Click icon below to see latest product information



MHF[®]



High-Frequency
Micro **RF**
Connectors



CABLINE[®]
FPL[®]



High-Speed
Micro-Coaxial
Connectors



NOVASTACK[®]



High-Density
Board-to-Board
Connectors



EVAFLEX[®]
MINIFLEX[®]



High-Density
FFC/FPC
Connectors



ISH[®]
IARPB[®]



High-Power
Wire-to-Board
Connectors



CUSTOM





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