

# Pulsonix Version 9.0 Update

## Signal Paths

Define complex signal paths and apply Track Length and Track Match rules. Rules defined can be applied to all critical signal paths simplifying this process for all complex net structures.

Name	Pin Count	Start Pin		End Pin		Use Own Colour	Colour	Track Length Rule				Track Length Match Rule		
		Pin	Net	Pin	Net			Attribute	Match	Minimum	Maximum	Attribute	Match	Max Difference
DQ14	4	J1.10	DQ14	U2.C2	DQM14	<input type="checkbox"/>		TrackLength	DQ%(14-7%)	0.550	2.900	<Signal Path Name>	DQ%(14:17%)	1.200
DQ15	4	J1.10	DQ15	U2.D2	DQM15	<input type="checkbox"/>		TrackLength	DQ%(14-7%)	0.550	2.900	<Signal Path Name>	DQ%(14:17%)	1.200
DQ16	4	J1.97	DQ12	U2.E3	DQM12	<input type="checkbox"/>		TrackLength	DQ%(14-7%)	0.550	2.900	<Signal Path Name>	DQ%(14:17%)	1.200
DQ17	4	J1.99	DQ13	U2.B3	DQM13	<input type="checkbox"/>		TrackLength	DQ%(14-7%)	0.550	2.900	<Signal Path Name>	DQ%(14:17%)	1.200
DQ24	4	J1.10	DQ24	U4.E8	DQM24	<input type="checkbox"/>						<Signal Path Name>	DQ%(24:28%)	1.000
DQ25	4	J1.11	DQ25	U4.C8	DQM25	<input type="checkbox"/>						<Signal Path Name>	DQ%(24:28%)	1.000
DQ26	4	J1.11	DQ26	U4.C7	DQM26	<input type="checkbox"/>						<Signal Path Name>	DQ%(24:28%)	1.000
DQ27	4	J1.11	DQ27	U4.E7	DQM27	<input type="checkbox"/>						<Signal Path Name>	DQ%(24:28%)	1.000
DQ28	4	J1.13	DQ28	U4.B3	DQM28	<input type="checkbox"/>						<Signal Path Name>	DQ%(24:28%)	1.000

## Net Spacing Rules

Net spacings provide a more detailed level of separation for critical nets where explicit rules aren't covered by net classes. These rules can be easily applied to any net, signal path, sub-net, differential pair or chain.

Item 1:  
Attribute: <Net Name>  
Match: DQ\*

Item 2:  
Attribute: PairRule  
Match: \*

On Layers:  
Side: <Any>  
or  
Name:

Within Areas: AREAAAAAAA

Match - <Net Class Name>*	Track	Pad	Via	Testpoint	Mounting Hole	Copper	Text
Track	0.25400	0.25400	0.25400	0.25400	0.25400	0.25400	0.25400
Pad	0.25400	0.25400	0.25400	0.25400	0.25400	0.25400	0.25400
Via	0.25400	0.25400	0.25400	0.25400	0.25400	0.25400	0.25400
Testpoint	0.25400	0.25400	0.25400	0.25400	0.25400	0.25400	0.25400
Mounting Hole	0.25400	0.25400	0.25400	0.25400	0.25400	0.25400	0.25400
Copper	0.25400	0.25400	0.25400	0.25400	0.25400	0.25400	0.25400
Text	0.25400	0.25400	0.25400	0.25400	0.25400	0.25400	0.25400
Board	0.25400	0.25400	0.25400	0.25400	0.25400	0.25400	0.25400

Minimum Spacing: 0.00000 (except for explicit smaller net class value)

Item 1		Item 2		Side	Layer	Area
Attribute Name	Match Value	Attribute Name	Match Value			
<Net Name>	Diff	<Net Name>	*	All		
<Net Name>	DQ*	PairRule	*	Top		BGA

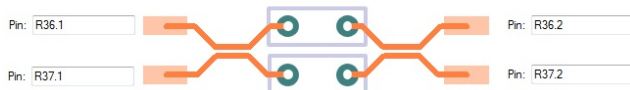
## Differential Pair Chains

Where Differential Pairs run through series components, you can define the path they will take as a Differential Pair Chain within Pulsonix. Using the constraint manager, complex rule sets can then be easily applied to these chains.

Name	Chain Link Name	First Pin Pair			Second Pin Pair			Use Own Colour	Colour	Edge Coupled	Broadside	Allow Spurs	Differential Pair Length Rule			Differential Pair Gap Rule			
		Net	Start Pin	End Pin	Net	Start Pin	End Pin						Attribute	Match	Min % Paired	Max Length Diff	Attribute	Match	Min Gap
DIFF1		DIFF1	Q7.2	R35.2	DIFF2	Q4.2	R34.2	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<Differential P *	80.00		6.00000			
DIFF1-1		DIFF1	Q4.1	Q5.1	DIFF2	Q4.2	Q5.2	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<Differential P *	80.00		6.00000			
N050		N050	Q2.2	R20.2	FAT	Q2.1	C16.2	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<Differential P *	80.00		6.00000			
DiffChain1			R36.1	R36.2		R37.1	R37.2	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<Differential P *	80.00		6.00000			
		DIFF1-2	DIFF1	R36.1	Q5.1	DIFF2	R37.1	Q5.2	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<Differential P *	80.00		6.00000			
		DIFF3	DIFF3	R36.1	R36.2	DIFF4	R39.1	R37.2	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<Differential P *	80.00		6.00000			

Easily define your rule sets and apply to multiple nets using powerful rule structures, like Max Net length difference

Diff Pair Chain: R36.1-R36.2 R37.1-R37.2



Differential Pairs In The Chain:

DIFF1-2  
DIFF3

Add...  
Remove  
Up  
Down

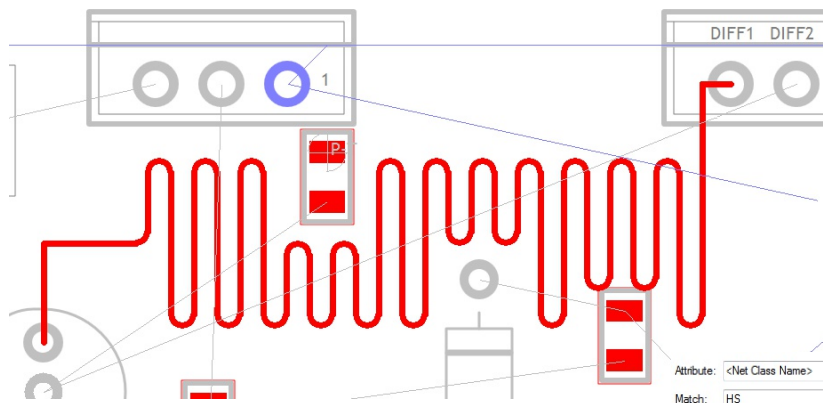
Attributes Rules  
Differential Pair Length Rules: <Differential Pair Name>=" Min %  
Track Length Rules:  
Track Match Rules:

Add...  
Edit  
Delete

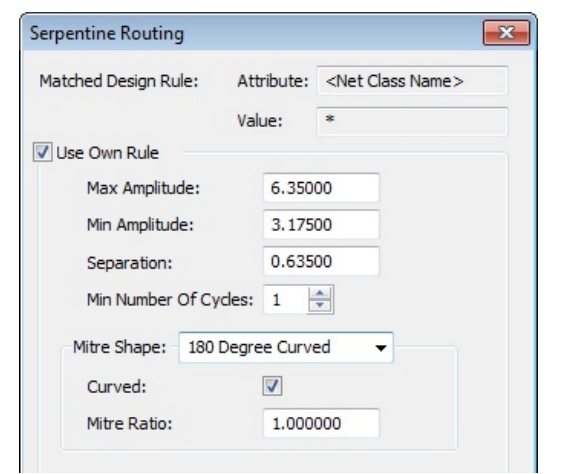
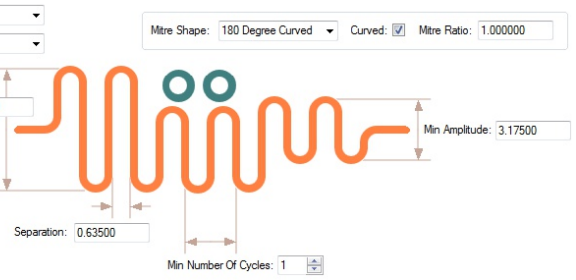
Create complex differential pair rules using the constraint manager

## Net Spacing Rules

For any track selection, you can interactively apply the serpentine routing by simply moving the cursor. The interactive tool utilises constraint rules defined for the net or differential pair.



Attribute Name	Match Value	Max Amplitude	Min Amplitude	Separation	Min Cycles	Curved	Mitre Ratio
<Net Class Name>	HS	6.35000	3.17500	0.63500	1	<input checked="" type="checkbox"/>	1.000000
<Net Class Name>	HS1	3.04800	1.52400	0.30480	1	<input checked="" type="checkbox"/>	1.000000
<Net Class Name>	RF	1.77800	1.52400	0.30480	1	<input checked="" type="checkbox"/>	1.000000
<Net Class Name>	*	6.35000	3.17500	0.63500	1	<input checked="" type="checkbox"/>	1.000000

## Pulsonix Vault

Provided free of charge to all Pulsonix version 9.0 users, the Pulsonix Vault offers effective management and revision control of your Pulsonix design data. Whether working on straightforward projects or as a collective, the Vault works in the knowledge that all aspects of your working process is managed and audited.

The Pulsonix Vault is supported on multiple sources of storage including local drives, server, VPN and remote servers, such is the flexibility of this tool.

Revision/Version Control functionality will be provided for designs (and related files such as Technologies) and libraries (Parts, Footprints and Symbols). The 'folder-like' structure allows items to be grouped in a logical arrangement, in the same way as they would be organised into folders in the normal Windows file system.

All aspects of the Vault usage are customisable; such as revision naming, administration rights and access permissions, folders and storage.

