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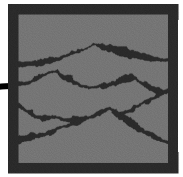
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Find the *Wavecrest AG-100* at our website: ***Click HERE***



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Compliant Jitter Measurements with Known Pattern and Marker

John Patrin Ph. D.

WAVECREST Corporation

00-624v0

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Measurement Methodology

- Compliant jitter measurements acquired with a known pattern and pattern marker
  - AG-100 matches to the 40 bit SOF
  - Pattern marker produced after the SOF
  - Pattern marker used as an “arm” DTS
- System components are a DTS 2077 Communication Signal Analyzer,VISI 6.0 dataCOM software, system controller and the new AG-100 Arm Generator
-

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DTS 2077 and AG-100 Arm Generator

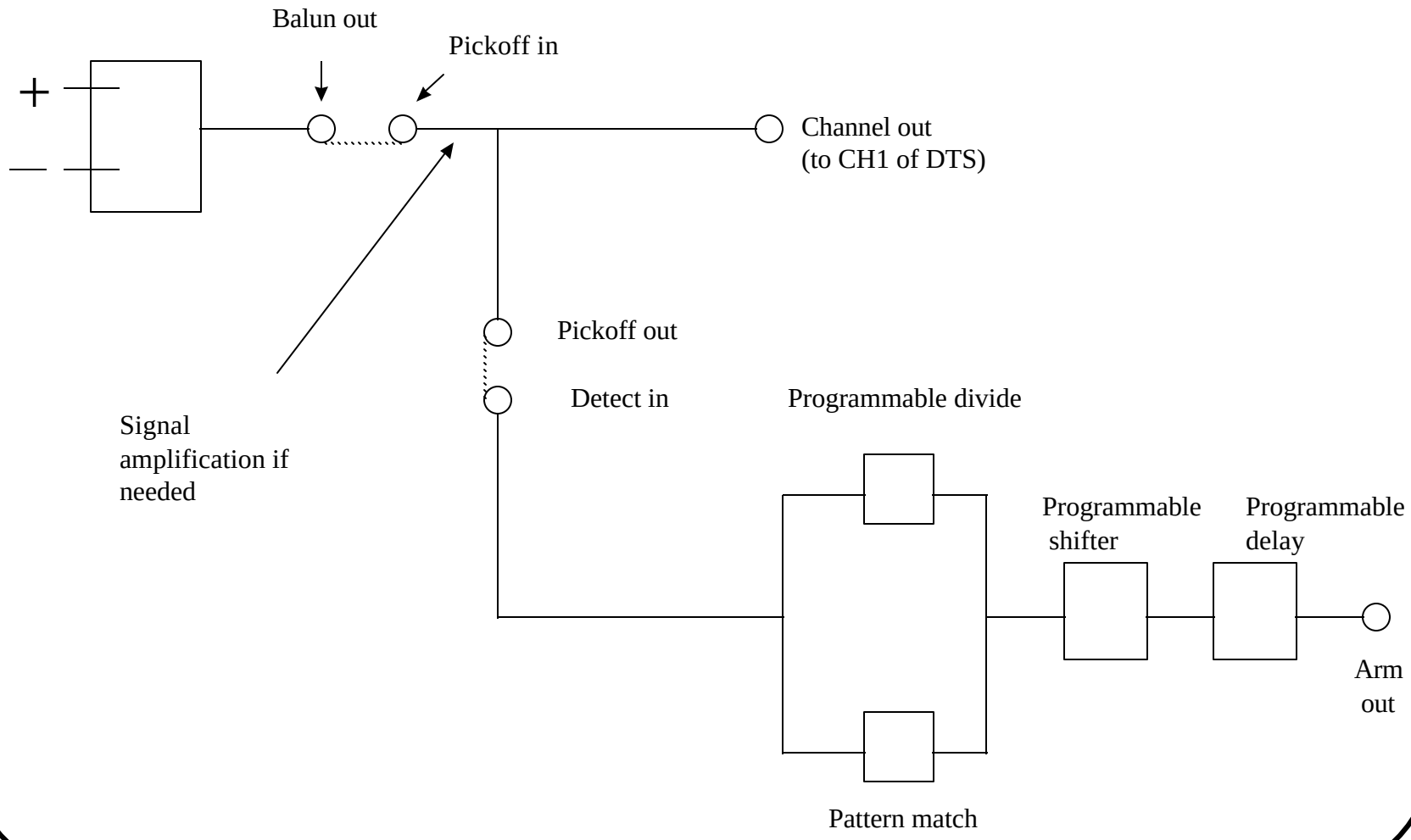


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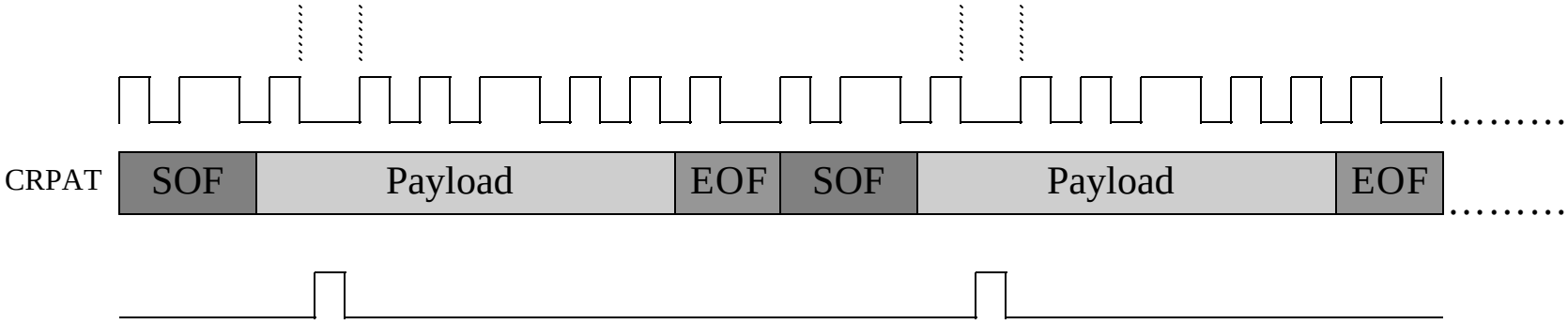
AG-100 Flow Diagram



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How is the FC/GBE Jitter Measurement Performed?

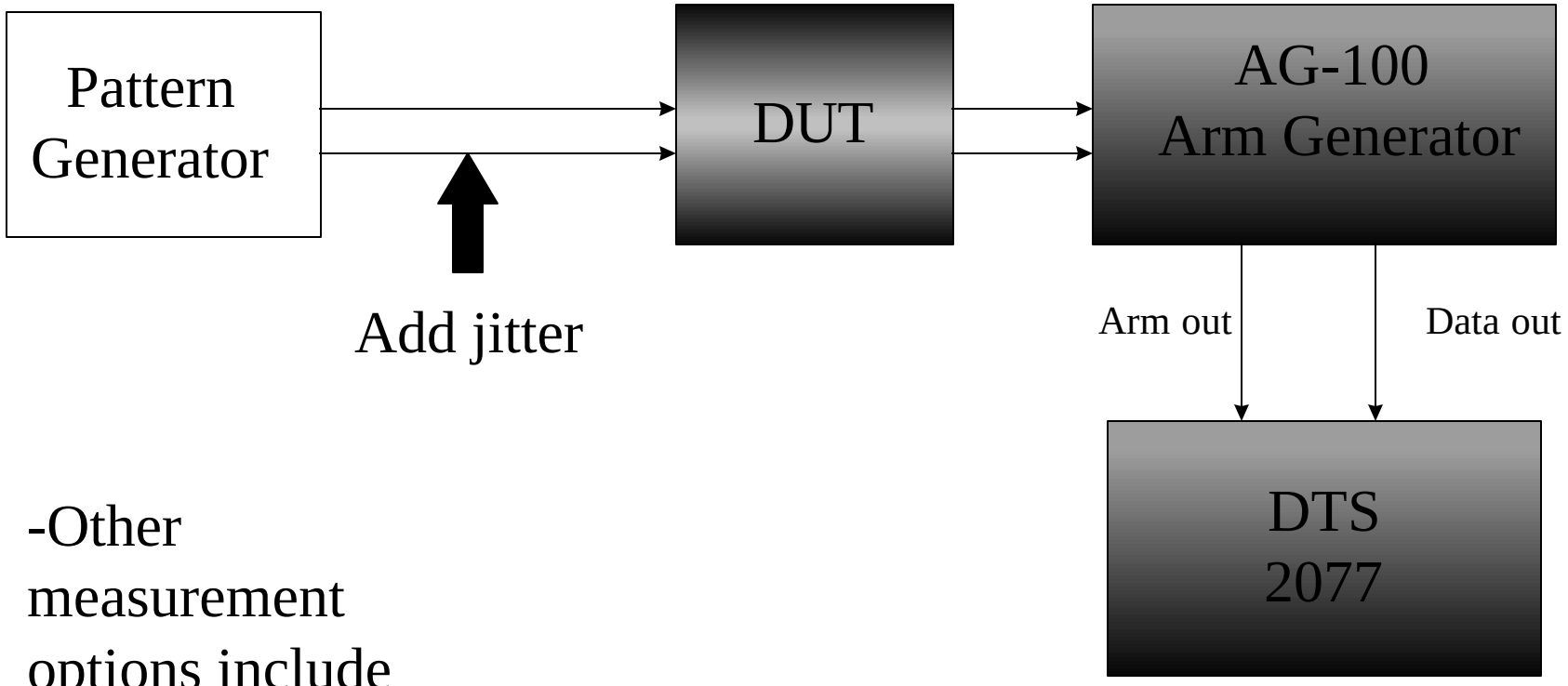


AG-100 matches to SOF → "ARM" marker produced ~140 cycles after pattern match → Data acquired after "arm" marker

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Typical Setup



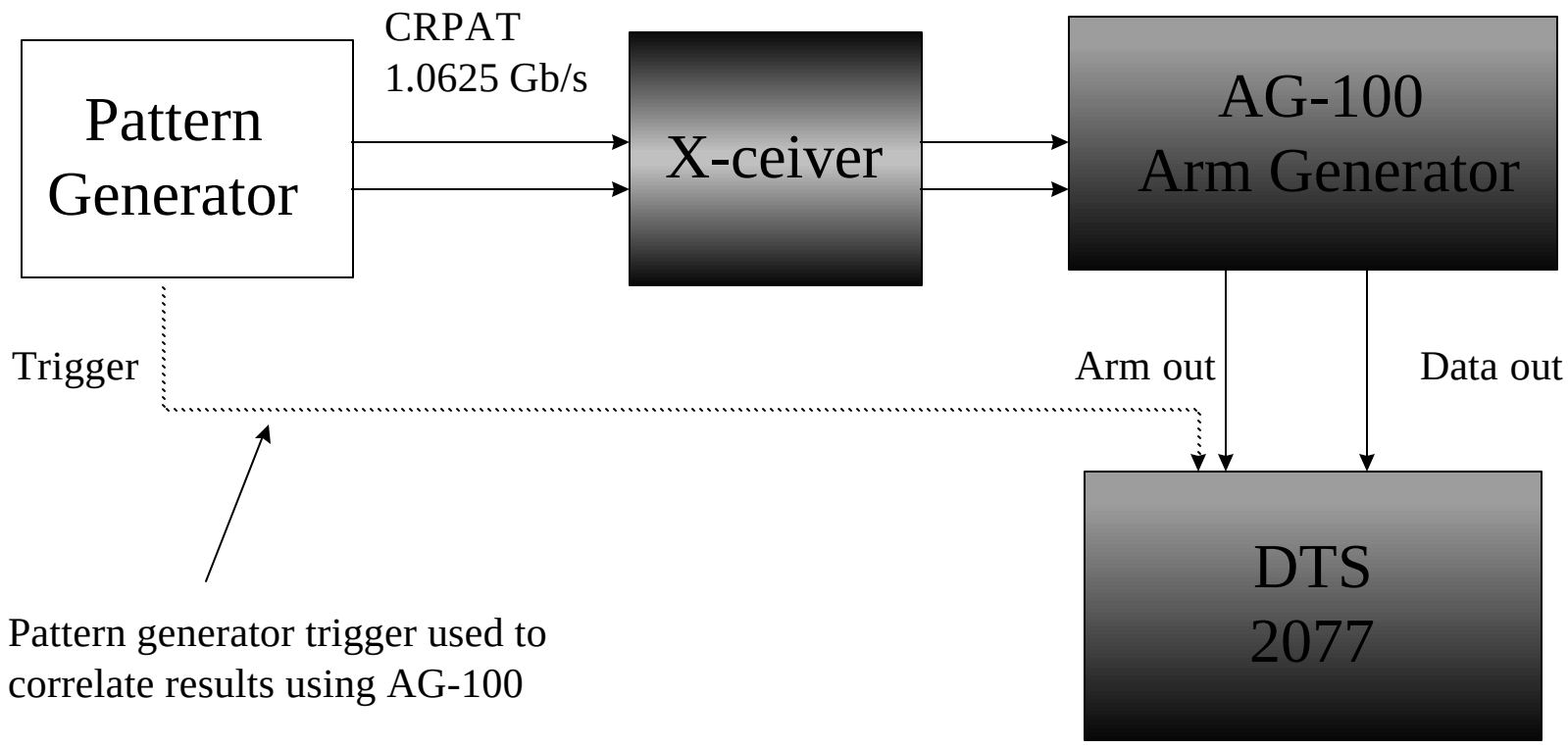
-Other measurement options include using a TAP or probes

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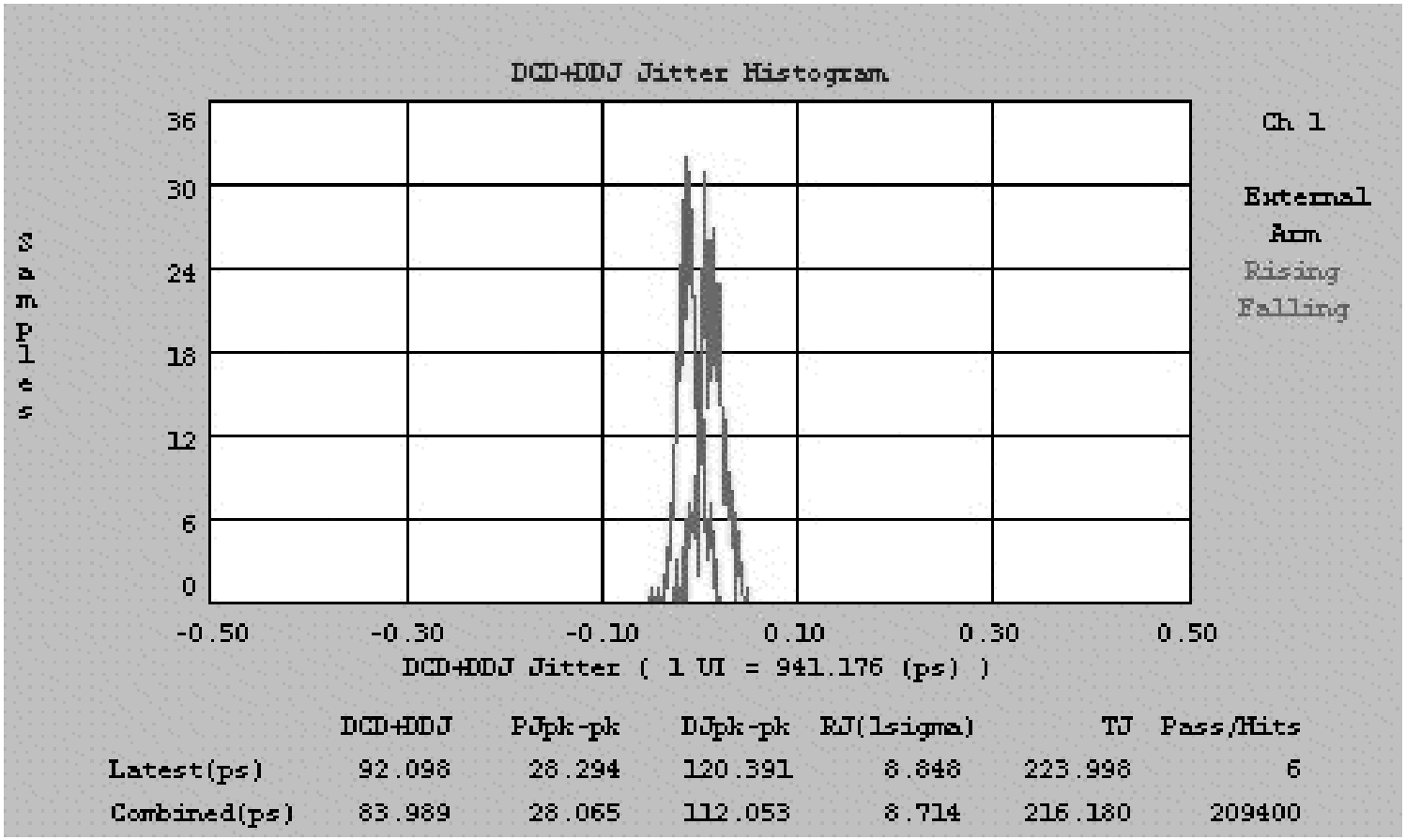
Examples



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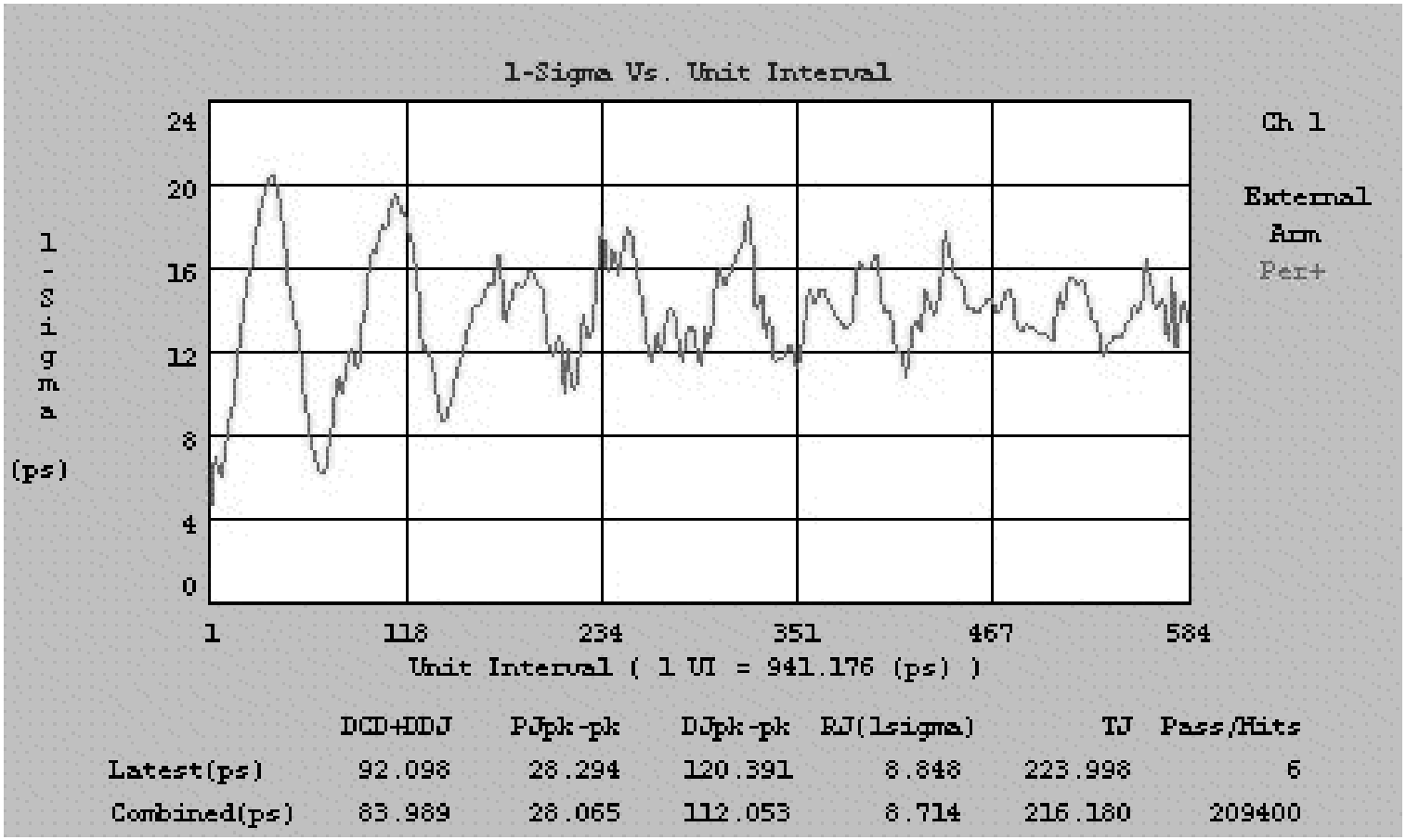
Results using AG-100



	DCD+DDJ	PJpk-pk	DJpk-pk	RJ(1sigma)	TJ	Pass/Hits
Latest(ps)	92.098	28.294	120.391	8.848	223.998	6
Combined(ps)	83.989	28.065	112.053	8.714	216.180	209400

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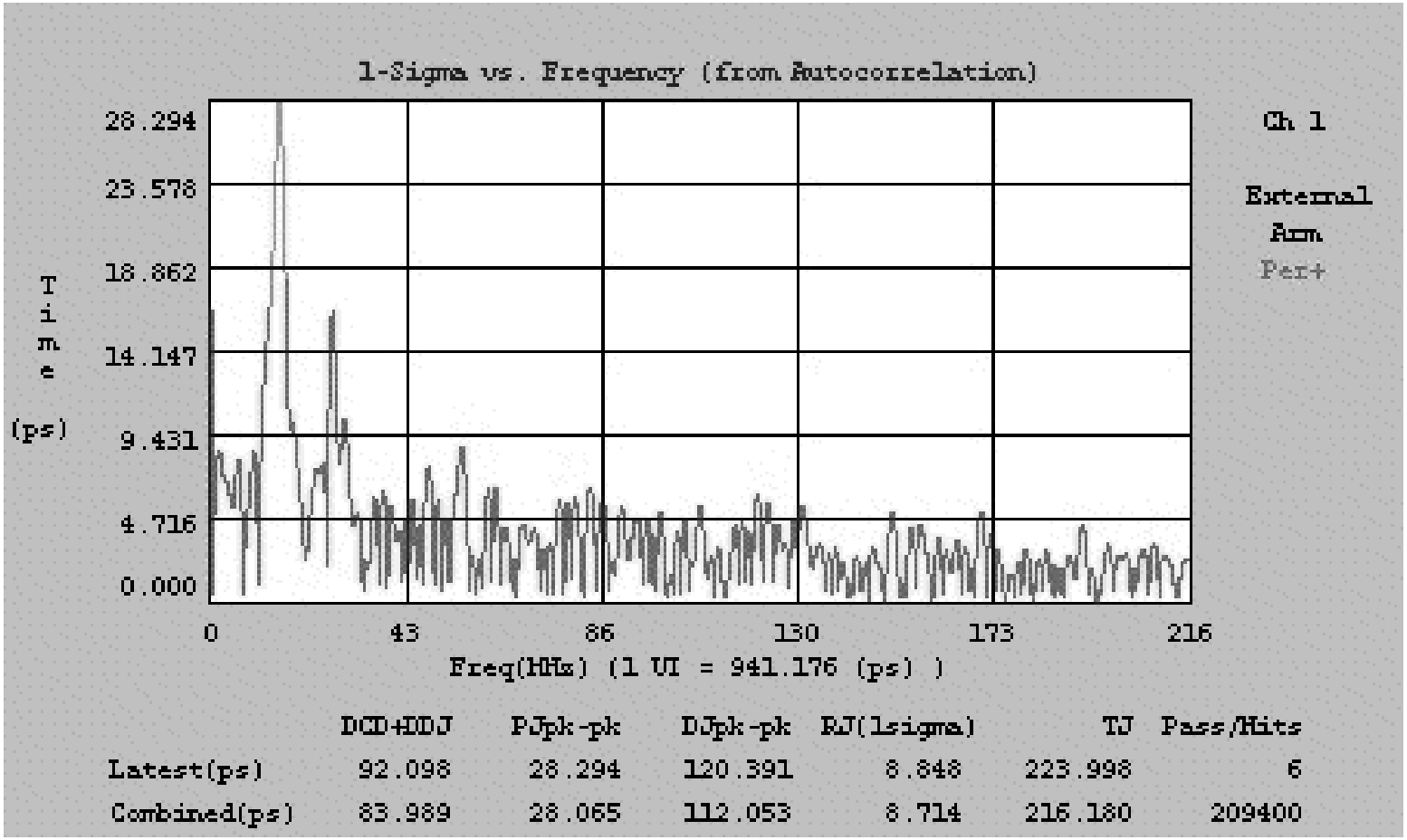
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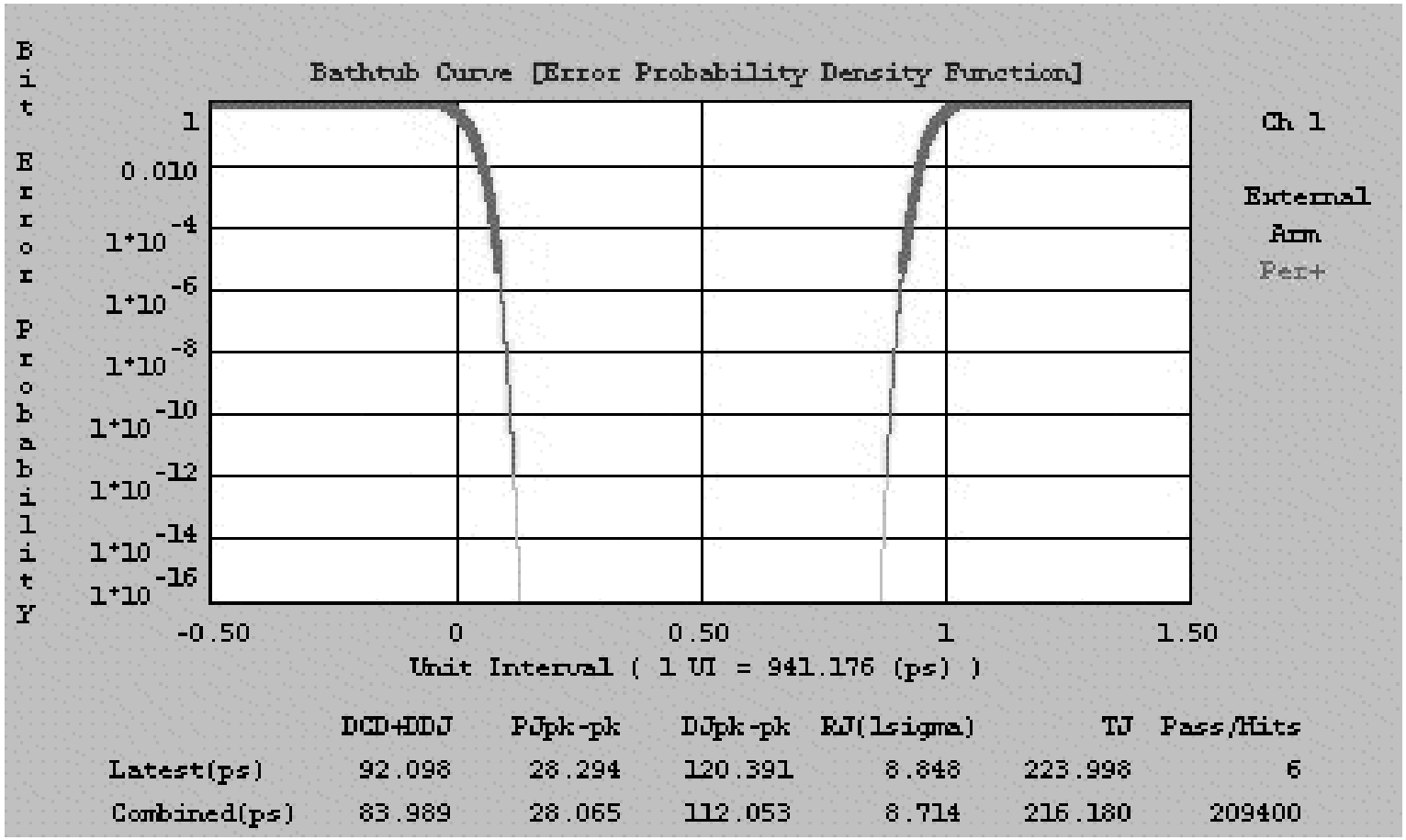
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Results using AG-100

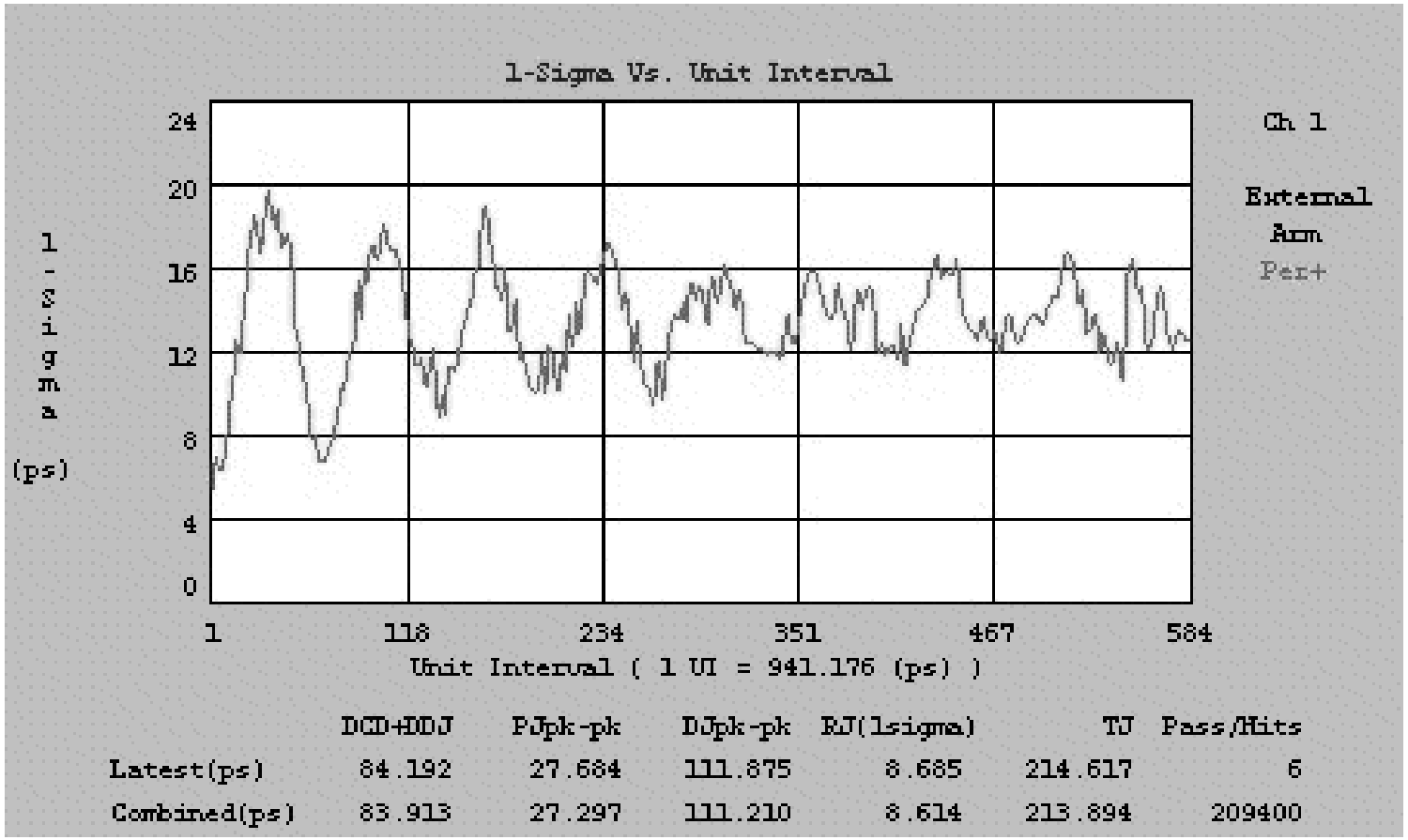


	DCD+DDJ	PJpk-pk	DJpk-pk	RJ(1sigma)	TJ	Pass/Hits
Latest(ps)	92.098	28.294	120.391	8.848	223.998	6
Combined(ps)	83.989	28.065	112.053	8.714	216.180	209400

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Results using pattern generator trigger



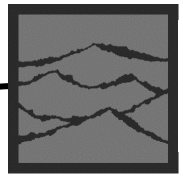
	DCD+DDJ	PJpk-pk	DJpk-pk	RJ(1sigma)	TJ	Pass/Hits
Latest(ps)	84.192	27.684	111.875	8.685	214.617	6
Combined(ps)	83.913	27.297	111.210	8.614	213.894	209400

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How does the AG-100 correlate?

	Using AG-100 (ps)	Using trigger (ps)
DCD+DDJ	84	83.9
PJ	28.1 (pk-pk)	27.3 (pk-pk)
DJ	112.1 (pk-pk)	111.2 (pk-pk)
RJ	8.7 (1 σ)	8.6 (1 σ)
TJ	216.2	213.9

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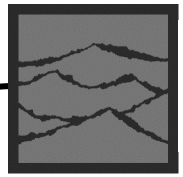


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AG-100 Specifications

Data rate range in pattern match mode	1.0625-2.5 Gb/s
Pattern match length	1-40 bits
Programmable Delay Range	up to 39 cycles @ 1× up to 78 cycles @ 2×
Programmable Delay resolution	20 ps
Maximum Input voltage swing	3.8 V (peak-to-peak)
Minimum Input voltage swing	~200 mV (peak-to-peak)
Amplifier gain	3.5X (nominal)

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Summary

- FC Test set used to measure jitter on systems without using a bit clock or trigger
- FC Test set jitter measurements correlate to a system using a trigger
- Perform jitter measurements at 1× and 2× speeds for both FC and GBE
- Need more products to test….

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