Low Jitter - Octal Clock Distribution Module

ABCDM-XX-YYYMHz

Pb RoHS Compliant

FEATURES:

- Non PLL based high frequency compact reference - Optimized for Jitter and Phase Noise
- 8-differential outputs to facilitate multiple clocking needs
- All outputs derived from the same low noise crystal oscillator - making all outputs frequency coherent
- 0.50 ps max. rms jitter over 12kHz to 20MHz Bandwidth
- Ultra fast rise & fall times satisfying demanding needs
- ±50 ppm All Inclusive Frequency Stability over 10-years (no adjustment needed)
- Metal shield reducing any EMI related concerns
- Compact Size, 9*14*2 mm solution saving board space in high density designs

APPLICATIONS:

- SERDES, PCIE and SATA
- Gigabit Transceivers
- Telecom Switching
- Fiber Distributed Data Interface
- Ethernet, Gigabit Ethernet
- Storage Area Network (SAN)
- Broadband Access
- SONET/SDH/DWDM
- Infiniband

STANDARD SPECIFICATIONS:

Parameters	Minimum	Typical	Maximum	Units	Notes
Output Frequency		100.00		MHz	Part # ABCDM-DS-100MHz (LVDS Outputs)
Output Frequency		125.00		MHz	Part # ABCDM-DS-125MHz (LVDS Outputs)
Output Frequency		100.00		MHz	Part # ABCDM-CL-100MHz (LVPECL Outputs)
Output Frequency		125.00		MHz	Part # ABCDM-CL-125MHz (LVPECL Outputs)
Operating Temperature:	-40		+85	°C	
Storage Temperature:	-55		+85	°C	
Overall Frequency Stability:	-50		+50	ppm	All inclusive; tolerance, shift through reflow, stability over temperature and 10-years of Aging
Supply Voltage (Vdd):	+2.45	+2.50	+3.60	V	Internally regulated
Supply Current (Idd):		< 200	300	mA	Total all inclusive with all (8) outputs terminated
Start-up time:			5.00	ms	
Tr / Tf:		<400	500	ps	
Symmetry	45		55	%	
rms jitter		< 0.30	0.50	ps	Over 12kHz to 20MHz BW

Preliminary

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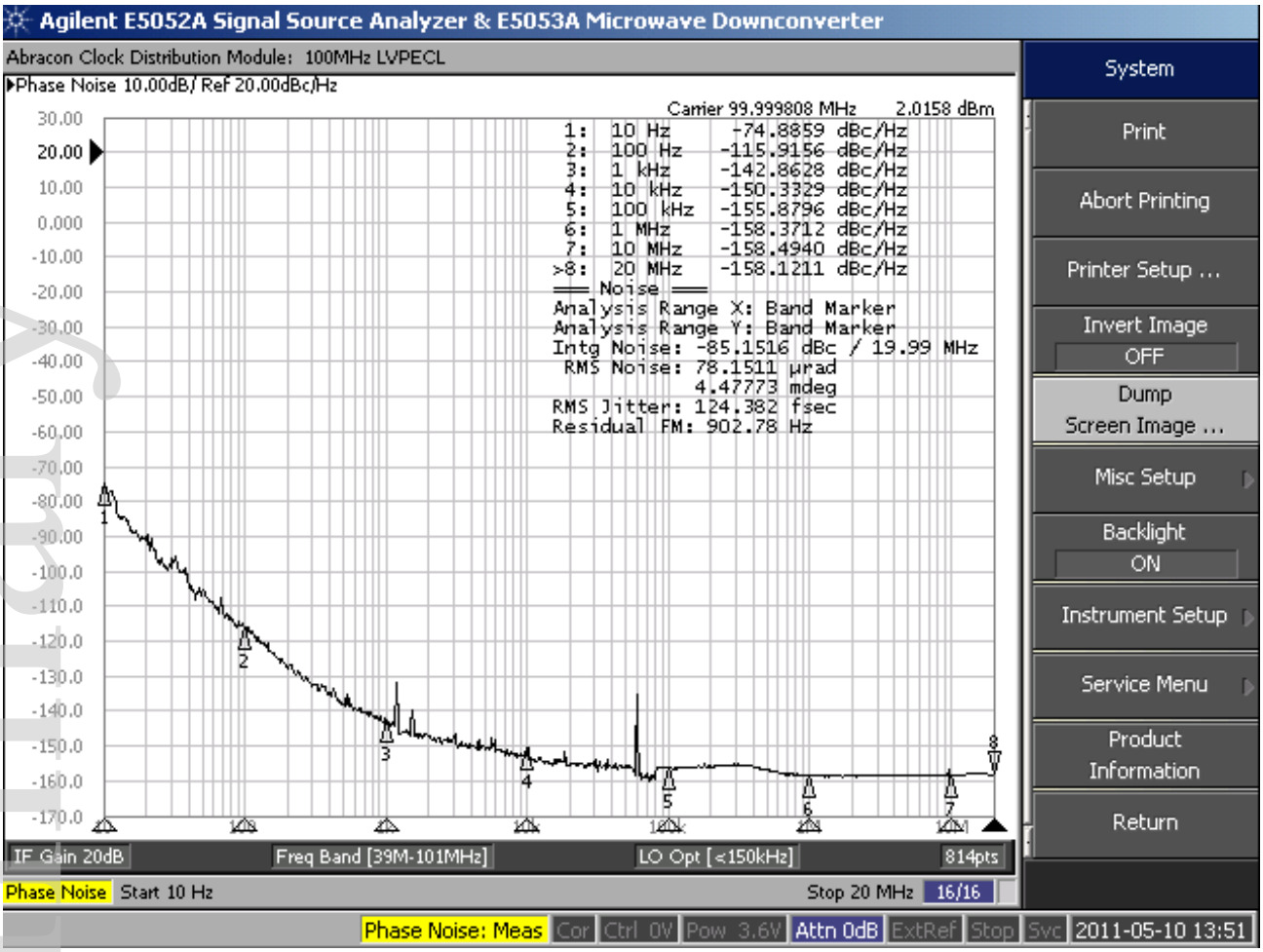
TYPICAL PHASE NOISE CHARACTERISTICS

LVPECL Output Configuration @ 100MHz Carrier



Typical Phase Noise Characteristics @ 100MHz Carrier with LVPECL Outputs

Offset from 100MHz Carrier	Level	Units
10 Hz	-74	dBc / Hz
100 Hz	-115	dBc / Hz
1,000 Hz	-142	dBc / Hz
10,000 Hz	-150	dBc / Hz
100,000 Hz	-155	dBc / Hz
1,000,000 Hz	-158	dBc / Hz
10,000,000 Hz	-158	dBc / Hz
20,000,000 Hz	-158	dBc / Hz

Typical rms Jitter over 12kHz to 20MHz BW = 124.4 fsec

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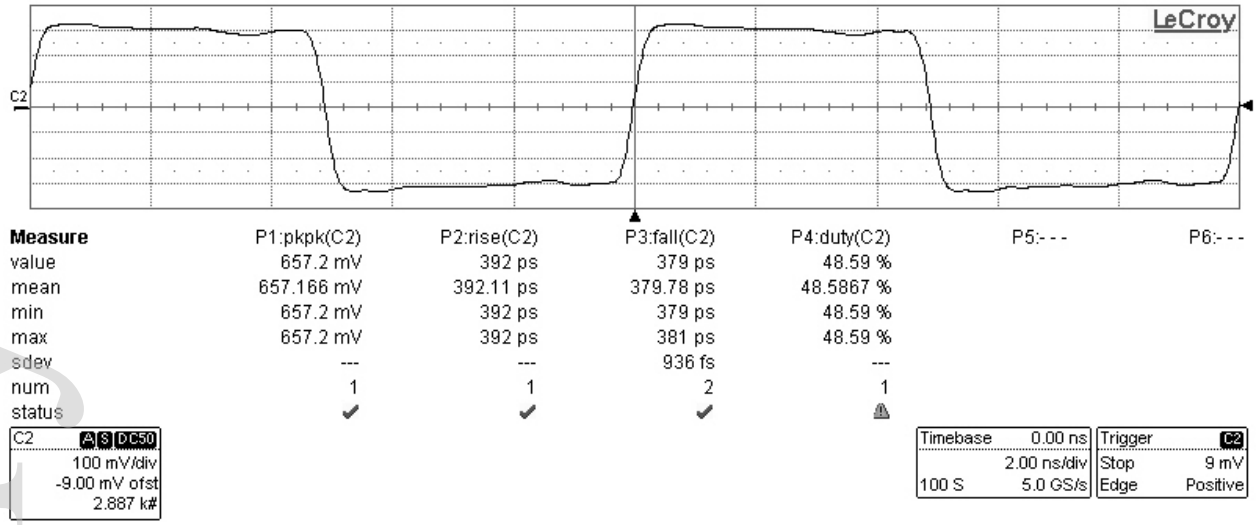
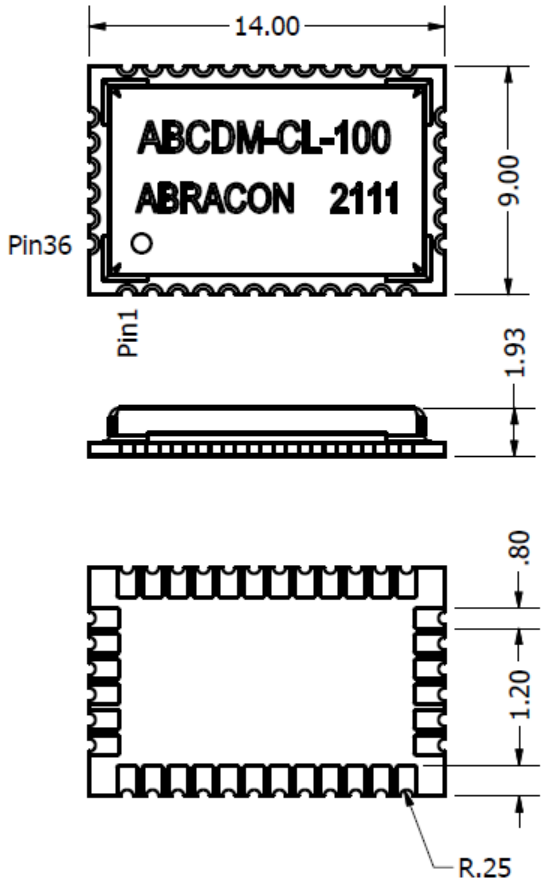
TYPICAL OUTPUT WAVEFORM

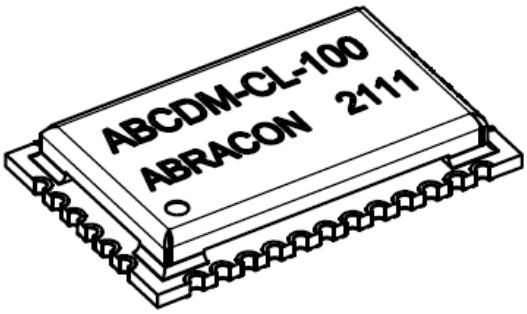
LVPECL Output @ 100MHz Carrier



Measure	P1:pkpk(C2)	P2:rise(C2)	P3:fall(C2)	P4:duty(C2)	P5:- - -	P6:- - -
value	657.2 mV	392 ps	379 ps	48.59 %		
mean	657.166 mV	392.11 ps	379.78 ps	48.5867 %		
min	657.2 mV	392 ps	379 ps	48.59 %		
max	657.2 mV	392 ps	381 ps	48.59 %		
sdev	---	---	936 fs	---		
num	1	1	2	1		
status	✔	✔	✔	⚠		

PACKAGE OUTLINE & DIMENSIONS:





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OCTAL CLOCK DISTRIBUTION MODULE -PINT OUT CONFIGURATION

Pin #	Function	Description
1	VDD	System Power (+2.50V to +3.60V)
2	GND	Ground
3	GND	Ground
4	Q0	LVPECL or LVDS Differential Output Pair # 1
5	Q0'	LVPECL or LVDS Differential Output Pair # 1
6	Q1	LVPECL or LVDS Differential Output Pair # 2
7	Q1'	LVPECL or LVDS Differential Output Pair # 2
8	Q2	LVPECL or LVDS Differential Output Pair # 3
9	Q2'	LVPECL or LVDS Differential Output Pair # 3
10	Q3	LVPECL or LVDS Differential Output Pair # 4
11	Q3'	LVPECL or LVDS Differential Output Pair # 4
12	GND	Ground
13	Q4	LVPECL or LVDS Differential Output Pair # 5
14	Q4'	LVPECL or LVDS Differential Output Pair # 5
15	Q5	LVPECL or LVDS Differential Output Pair # 6
16	Q5'	LVPECL or LVDS Differential Output Pair # 6
17	Q6	LVPECL or LVDS Differential Output Pair # 7
18	Q6'	LVPECL or LVDS Differential Output Pair # 7
19	GND	Ground
20	Q7	LVPECL or LVDS Differential Output Pair # 8
21	Q7'	LVPECL or LVDS Differential Output Pair # 8
22	GND	Ground
23	GND	Ground
24	GND	Ground
25	GND	Ground
26	GND	Ground
27	GND	Ground
28	GND	Ground
29	GND	Ground
30	GND	Ground
31	GND	Ground
32	GND	Ground
33	GND	Ground
34	GND	Ground
35	GND	Ground
36	GND	Ground

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