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Partners from RF to Light

PRBS31Q Example Sequence
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Motivation

- Definition of PRBS pattern changed significantly between draft 1.0 and 1.1. Draft 1.1 is very clear in defining how to generate PRBS13Q.
  - However, PRBS31Q is not mentioned in the draft (searching in the pdf does not yield any result, though PRBS13Q is mentioned several times)
  - Pete Anslow's following contribution shows that PRBS31Q is necessary http://www.ieee802.org/3/bs/public/adhoc/logic/dec11_15/anslow_01_1215_logic.pdf
- To provide clarity we propose that we provide 50 bit sequence of PAM4 signal which will ensure that various implementation are in agreement.
  - 50 bit sequence should be sufficient to ensure correct coding.

Excel Sheet

- Attached excel sheet is used to demonstrate how the bit sequence generated.

50 valid Symbols (including initialization bits)

"For example, if the PRBS31 generator used to create the PRBS31Q sequence is initialized to a seed value of 1111 1111 1111 1111 1111 1111 1111 111 (with the leftmost bit in S0 and the rightmost in S30), the PRBS31Q sequence begins with the following Gray coded PAM4 symbols: 2222 2222 2222 2201 2222 2222 2222 0002 2222 2222 2201 2012 22."

PRBS31Q
2
2
2
2
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2
0
1
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0
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0
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0
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0
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2
2
2

1	PRBS31					
1	Inverter outpu	1st bit	2nd bit index	A bit	B bit	PRBS31Q
0	1	0	1	1	1	2
0	1	2	3	1	1	2
0	1	4	5	1	1	2
0	1	6	7	1	1	2
0	1	8	9	1	1	2
0	1	10	11	1	1	2
0	1	12	13	1	1	2
0	1	14	15	1	1	2
0	1	16	17	1	1	2
0	1	18	19	1	1	2
0	1	20	21	1	1	2
0	1	22	23	1	1	2
0	1	24	25	1	1	2
0	1	26	27	1	1	2
0	1	28	29	0	0	0
0	1	30	31	0	1	1
0	1	32	33	1	1	2
0	1	34	35	1	1	2
0	1	36	37	1	1	2
0	1	38	39	1	1	2
0	1	40	41	1	1	2
0	1	42	43	1	1	2
0	1	44	45	1	1	2
0	1	46	47	1	1	2
0	1	48	49	1	1	2
0	1	50	51	1	1	2
0	1	52	53	1	1	2

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Excel Spreadsheet used to generate PRBSQ pattern

0	1	54	55		1	1	2
1	0	56	57		0	0	0
1	0	58	59		0	0	0
1	0	60	61		0	0	0
0	1	62	63		1	1	2
0	1	64	65		1	1	2
0	1	66	67		1	1	2
0	1	68	69		1	1	2
0	1	70	71		1	1	2
0	1	72	73		1	1	2
0	1	74	75		1	1	2
0	1	76	77		1	1	2
0	1	78	79		1	1	2
0	1	80	81		1	1	2
0	1	82	83		1	1	2
0	1	84	85		0	0	0
0	1	86	87		0	1	1
0	1	88	89		1	1	2
0	1	90	91		0	0	0
0	1	92	93		0	1	1
0	1	94	95		1	1	2
0	1	96	97		1	1	2
0	1	98	99		1	1	2

Excel Spreadsheet used to generate PRBSQ pattern