Sync pattern for upstream burst transmission

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A sync pattern for 10G-EPON

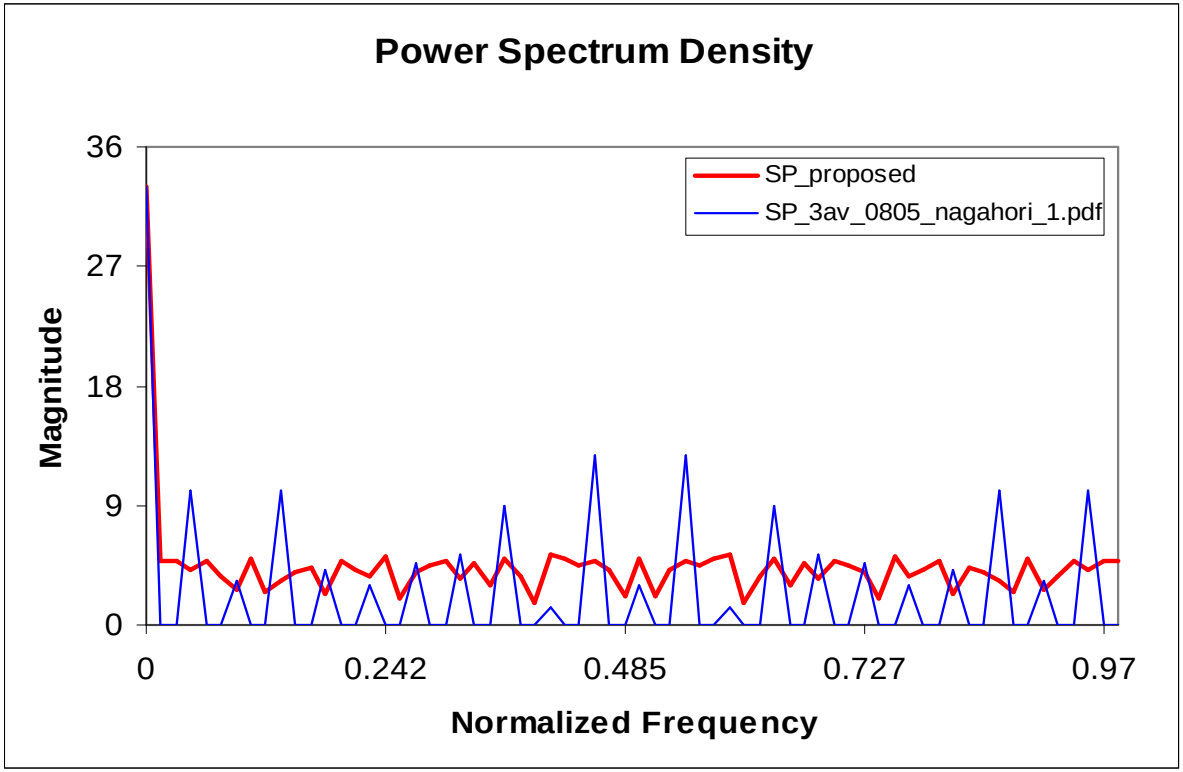
- In the Munich interim meeting, a new sync pattern is requested by the group, the sync pattern is found,

  Binary 10 1111 1101 0000 0010 0001 1000 1010 0111
  1010 0011 1001 0010 1101 1101 1001 1010

  Hex 4 BF 40 18 E5 C5 49 BB 59

- The sync pattern has the following properties,
  1. It is DC-balance
  2. It provides enough transition for CDR (Transition Density = 0.5)
  3. The maximum run length is 6
  4. It has a relatively flat power spectrum density
  5. 66-bit block

The power spectrum density



Run length distribution of the proposed SP						
Run length	6	5	4	3	2	1
Numbers of run length of "1"	1	0	1	2	4	9
Numbers of run length of "0"	1	0	1	2	4	9

BD for the new SP

- The burst delimiter for the new sync pattern is provided,

Binary 01 1101 0110 0001 1111 0001 1011 0100 1000 0001 1011
0001 1010 0010 0111 1101 0101

Hex 8 6B F8 D8 12 D8 58 E4 AB

Minimum Hamming Distance = 30

Distribution of Hamming Distance

A_{30} = 24 A_{31} = 9 A_{32} = 38 A_{33} = 13 A_{34} =19
A_{35} = 4 A_{36} = 14 A_{37} = 3 A_{38} = 4 A_{40} = 2 A_{48} = 1

Maximum run length = 6 DC balance = 33/33 (1/0)

Thank You!