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APAC700 protection from B26 UL A-MPR study

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TSG-RAN Working Group 4 (Radio) meeting B26ah
Jersey City, January 17-19 2012

Source:	Nokia Corporation
Title:	A-MPR study for APAC700 protection
Agenda item:	4.2.1
Document for:	Discussion

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Simulation Campaign

Protection of APAC700 DL from Band 26 UL

- APAC700 DL extending up to 803MHz
- Band 26 UL starting from 814MHz (11MHz guard band)
- –50dBm/MHz emission limit
- B26 duplexer attenuation 25…30dB @803MHz
  - We assume 4dB post PA losses for passband
    => 21…26dB extra attenuation @803MHz
- B26 modulator LO and image suppression 25…32dBc
  - 60dBc CIM3 (not affecting any results)
- PA operating point set so that with full RB allocation and QPSK signal, ACLR and SEM masks just met with 1dB MPR
- 15MHz UL carrier at 814-829MHz only – narrower carriers will meet mask (as will 15MHz with 1.7MHz freq.shift)

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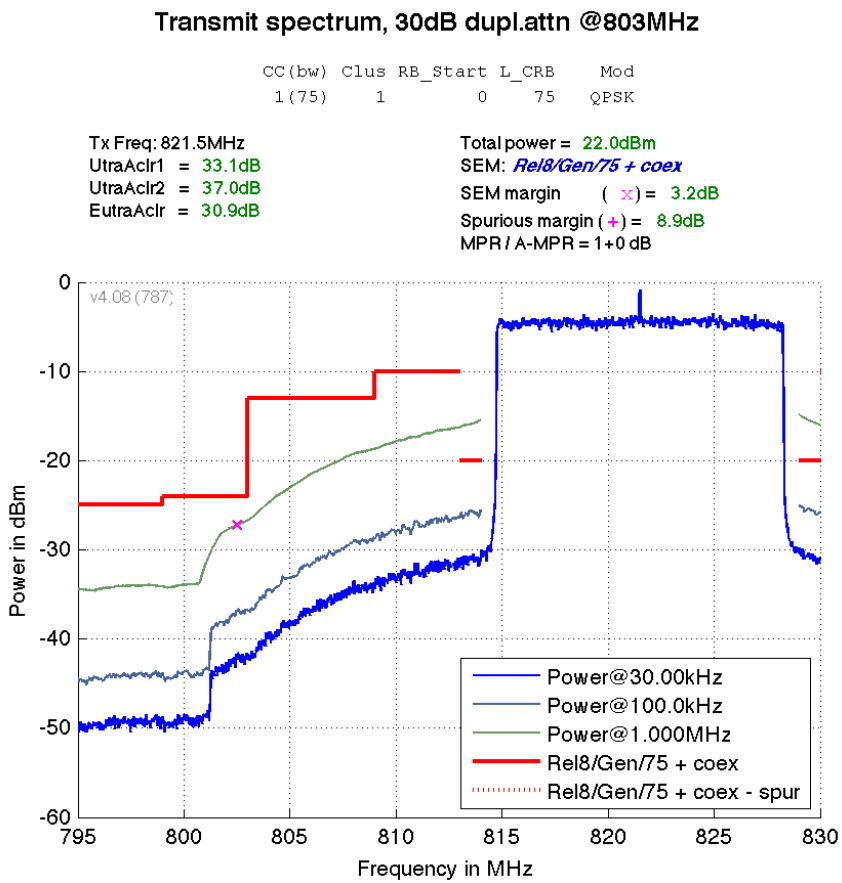
Full/single RB allocation

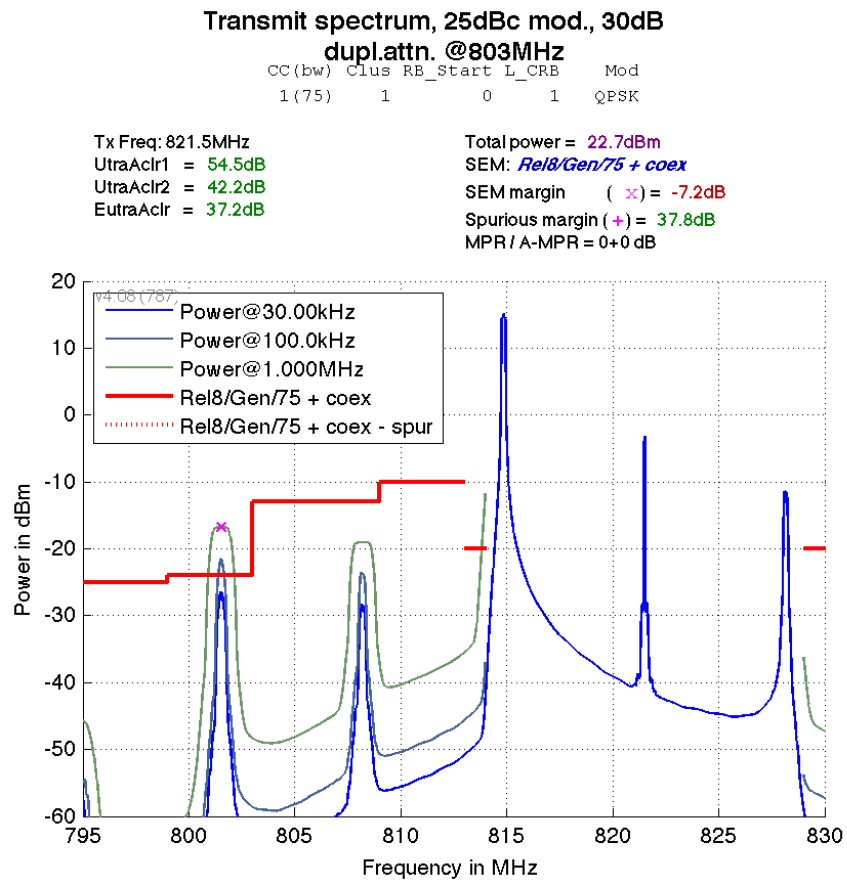
Emission limit ≤803MHz:

–50dBm/MHz + (dupl_attn –4dB**) (**to cover post PA passband loss)

= –24dBm/MHz for 30dB duplexer;

= –29dBm/MHz for 25dB duplexer





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A-MPR for 15MHz UL at 814-829MHz

A-MPR		Duplexer TX–Antenna attenuation @803MHz					
		25dB	26dB	27dB	28dB	29dB	30dB
Modulator LO and image suppression (dBc)	25	5dB 1RB 1-4dB 2-16RB 2dB ≥72RB	4dB 1RB 1-4dB 2-12RB 1dB 75RB	4dB 1RB 1-4dB 2-12RB	4dB 1RB 1-4dB 2-12RB	3dB 1RB 1-3dB 2-10RB	3dB 1RB 1-3dB 2-9RB
	28	4dB 1RB 1-4dB 2-12RB 2dB ≥72RB	3dB 1RB 1-3dB 2-10RB 1dB 75RB	3dB 1RB 1-3dB 2-9RB	3dB 1RB 1-3dB 2-8RB	2dB 1RB 1-2dB 2-6RB	2dB 1RB 1-2dB 2-6RB
	29	3dB 1RB 1-3dB 2-10RB 2dB ≥72RB	3dB 1RB 1-3dB 2-9RB 1dB 75RB	3dB 1RB 1-3dB 2-8RB	3dB 1RB 1-2dB 2-6RB	2dB 1RB 1-2dB 2-6RB	2dB 1RB 1-2dB 2-6RB
	30	3dB 1RB 1-3dB 2-9RB 2dB ≥72RB	3dB 1RB 1-3dB 2-8RB 1dB 75RB	3dB 1RB 1-2dB 2-6RB	2dB 1RB 1-2dB 2-6RB	2dB 1RB 1-2dB 2-6RB	1dB 1-5RB
	31	3dB 1RB 1-3dB 2-8RB dB ≥72RB	3dB 1RB 1-2dB 2-6RB 1dB 75RB	2dB 1RB 1-2dB 2-6RB	2dB 1RB 1-2dB 2-6RB	1dB 1-5RB	1dB 1-3RB
	32	3dB 1RB 1-2dB 2-6RB 2dB ≥72RB	2dB 1RB 1-2dB 2-6RB 1dB 75RB	2dB 1RB 1-2dB 2-6RB	1dB 1RB 1dB 2-5RB	1dB 1-3RB	1dB 1-2RB

In all cases, PUCCH over-provisioning by 4-5 RBs gives 0dB A-MPR

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15MHz UL emissions at ≤803MHz

Absolute emission levels dBm/MHz, when 0dB A-MPR is used
1RB allocation at channel edge & 75RB allocation

dBm/MHz		Duplexer TX–Antenna attenuation @803MHz					
		25dB	26dB	27dB	28dB	29dB	30dB
Modulator LO and image suppression (dBc)	25	–37.8 1RB –48.8 75RB	–38.7 1RB –49.8 75RB	–39.7 1RB ≤–50 75RB	–40.8 1RB ≤–50 75RB	–41.7 1RB ≤–50 75RB	–42.7 1RB ≤–50 75RB
	28	–40.7 1RB –48.8 75RB	–41.6 1RB –49.8 75RB	–42.7 1RB ≤–50 75RB	–43.7 1RB ≤–50 75RB	–44.7 1RB ≤–50 75RB	–45.7 1RB ≤–50 75RB
	29	–41.6 1RB –48.8 75RB	–42.6 1RB –49.8 75RB	–43.6 1RB ≤–50 75RB	–44.6 1RB ≤–50 75RB	–45.6 1RB ≤–50 75RB	–46.6 1RB ≤–50 75RB
	30	–42.6 1RB –48.8 75RB	–43.6 1RB –49.8 75RB	–44.6 1RB ≤–50 75RB	–45.6 1RB ≤–50 75RB	–46.6 1RB ≤–50 75RB	–47.6 1RB ≤–50 75RB
	31	–43.6 1RB –48.8 75RB	–44.6 1RB –49.8 75RB	– 45.6 1RB ≤–50 75RB	–46.6 1RB ≤–50 75RB	–47.6 1RB ≤–50 75RB	–48.6 1RB ≤–50 75RB
	32	–44.6 1RB –48.8 75RB	–45.6 1RB –49.8 75RB	–46.6 1RB ≤–50 75RB	–47.6 1RB ≤–50 75RB	–48.6 1RB ≤–50 75RB	–49.6 1RB ≤–50 75RB

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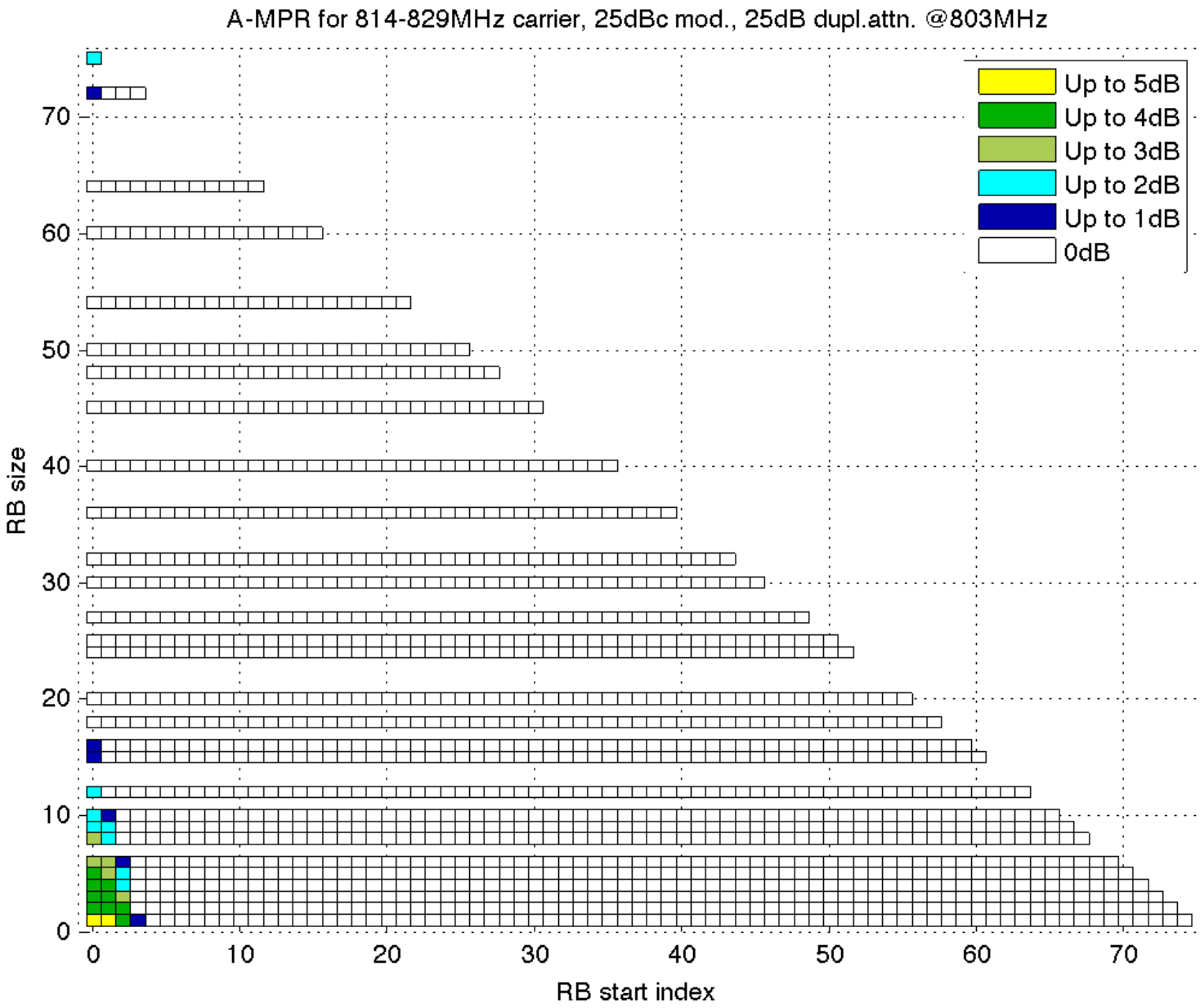

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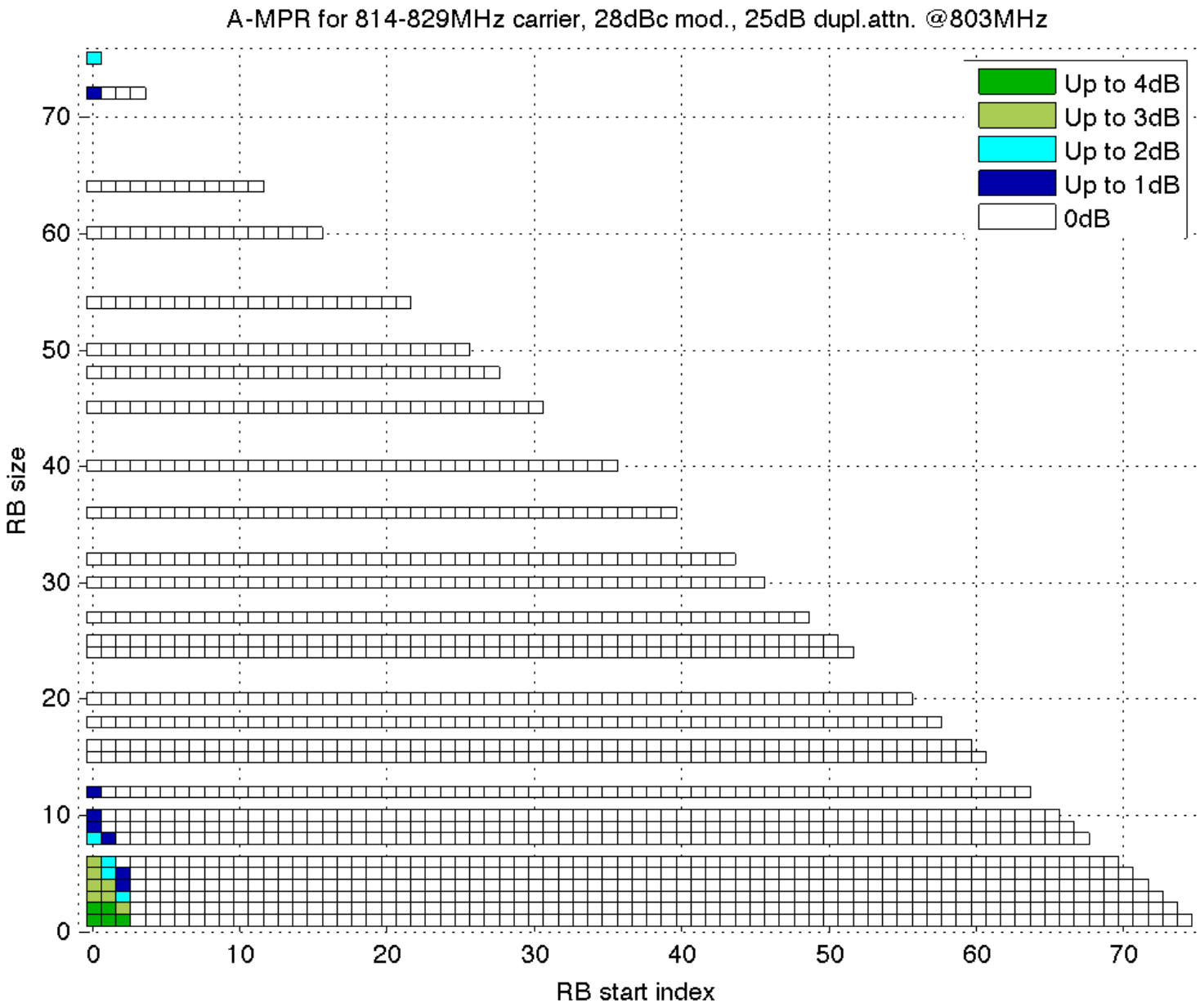

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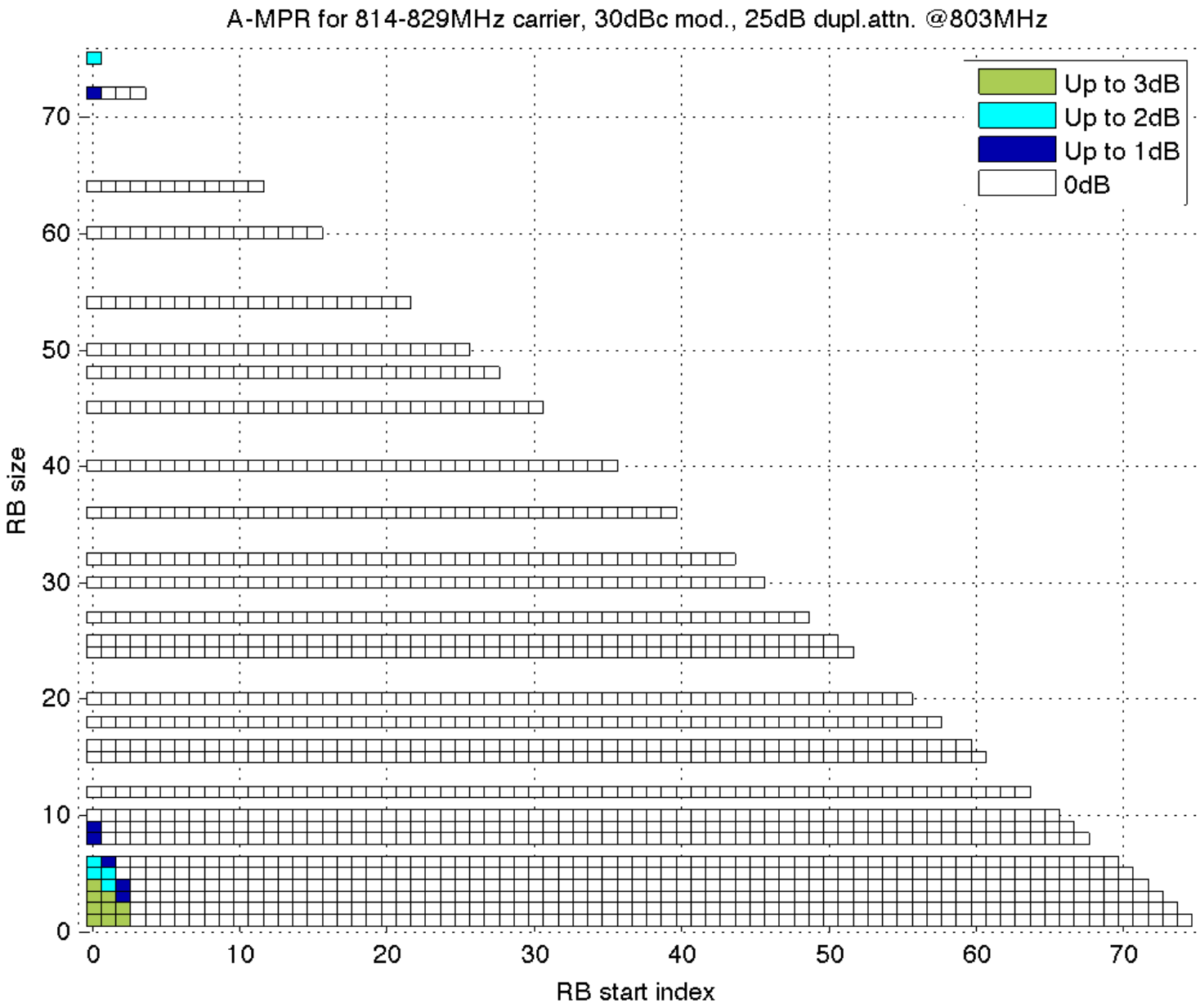

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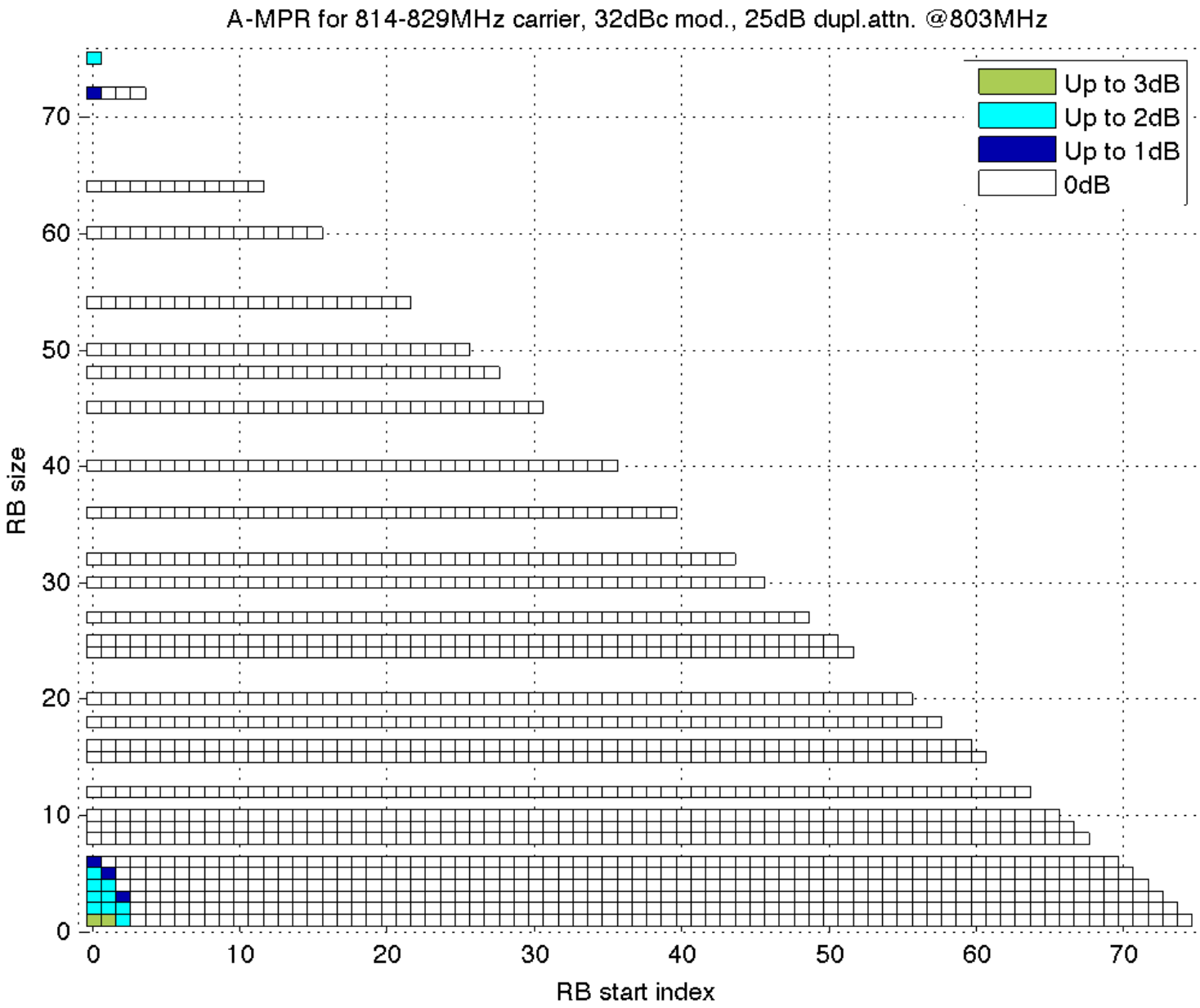

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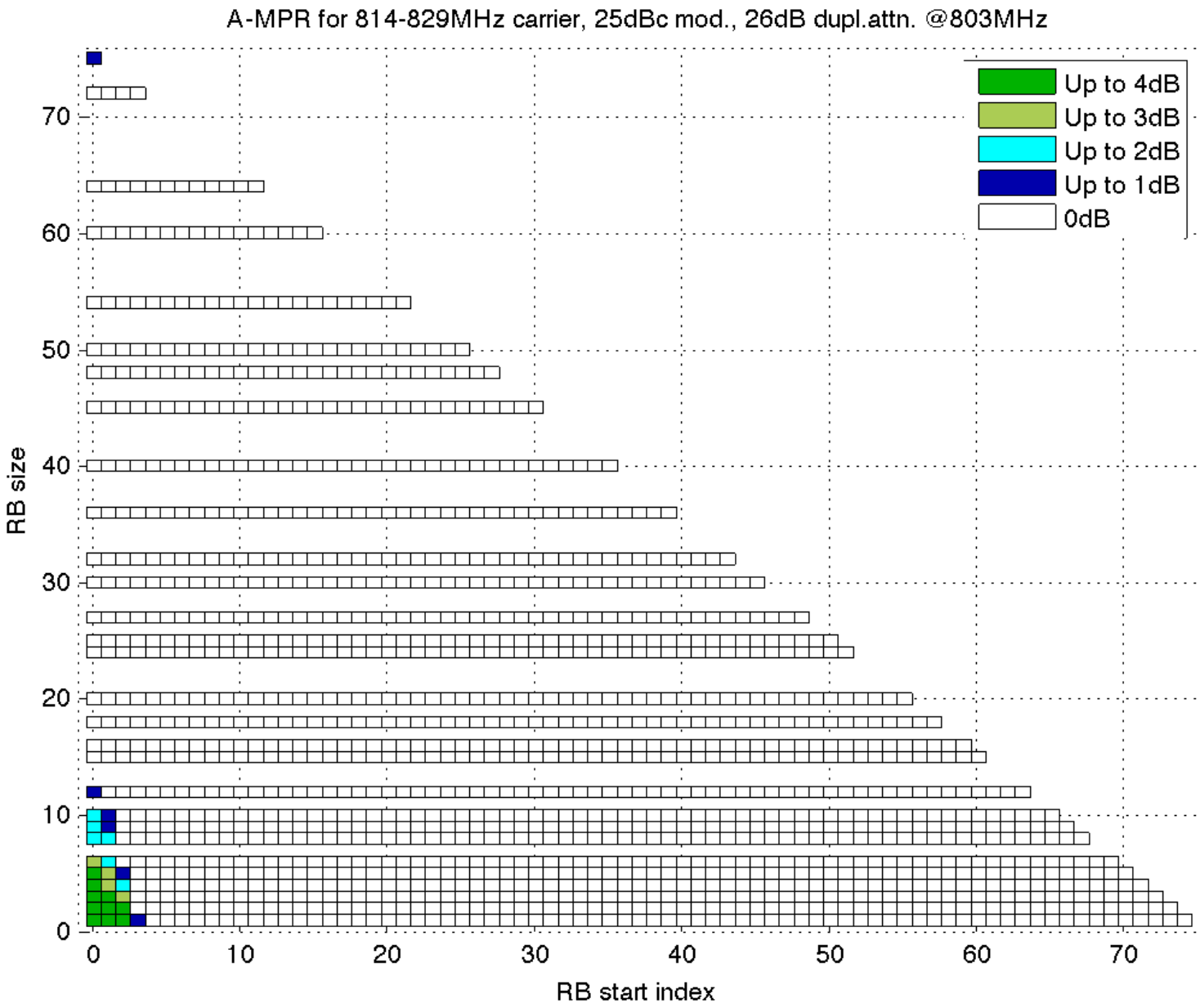

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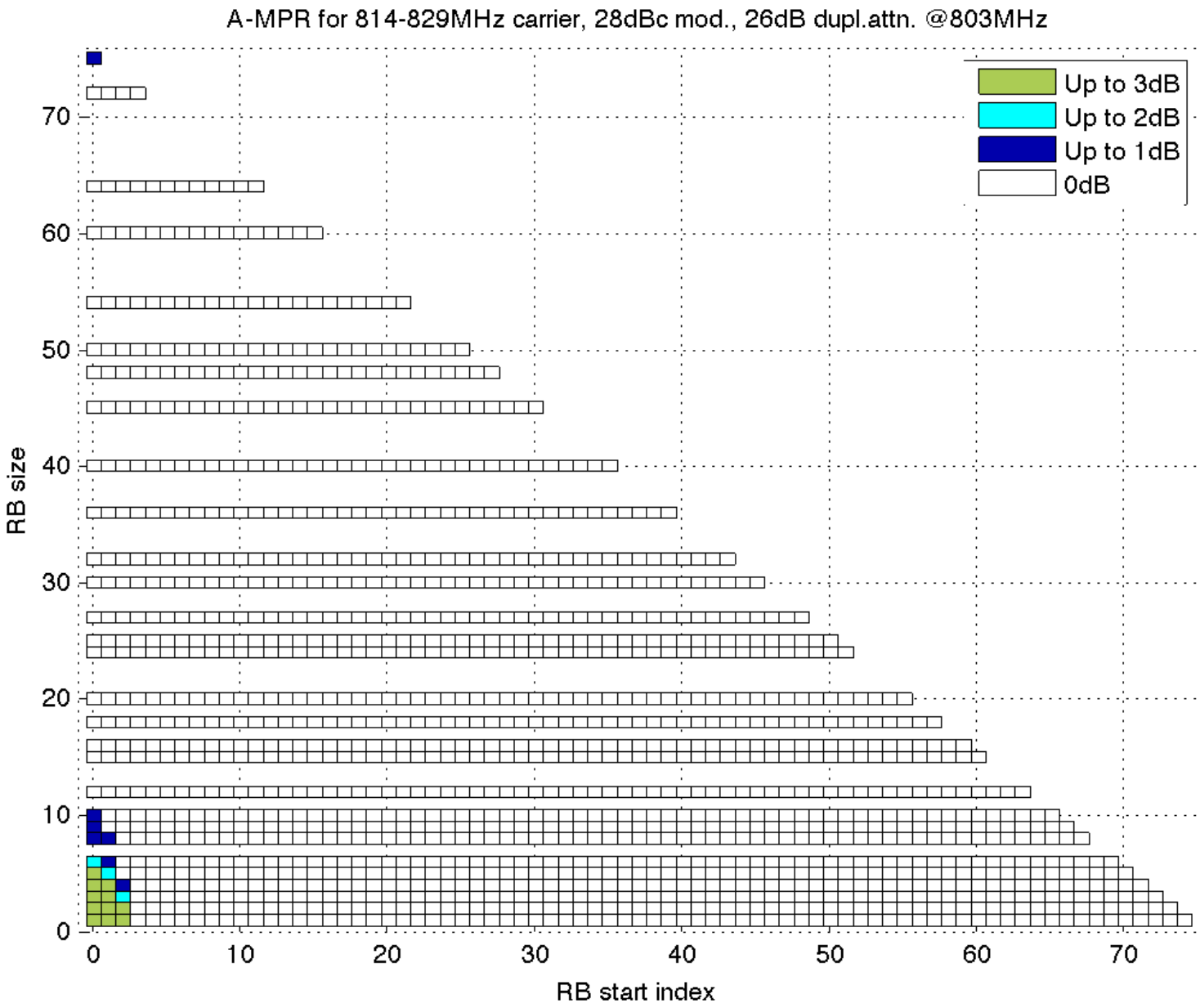

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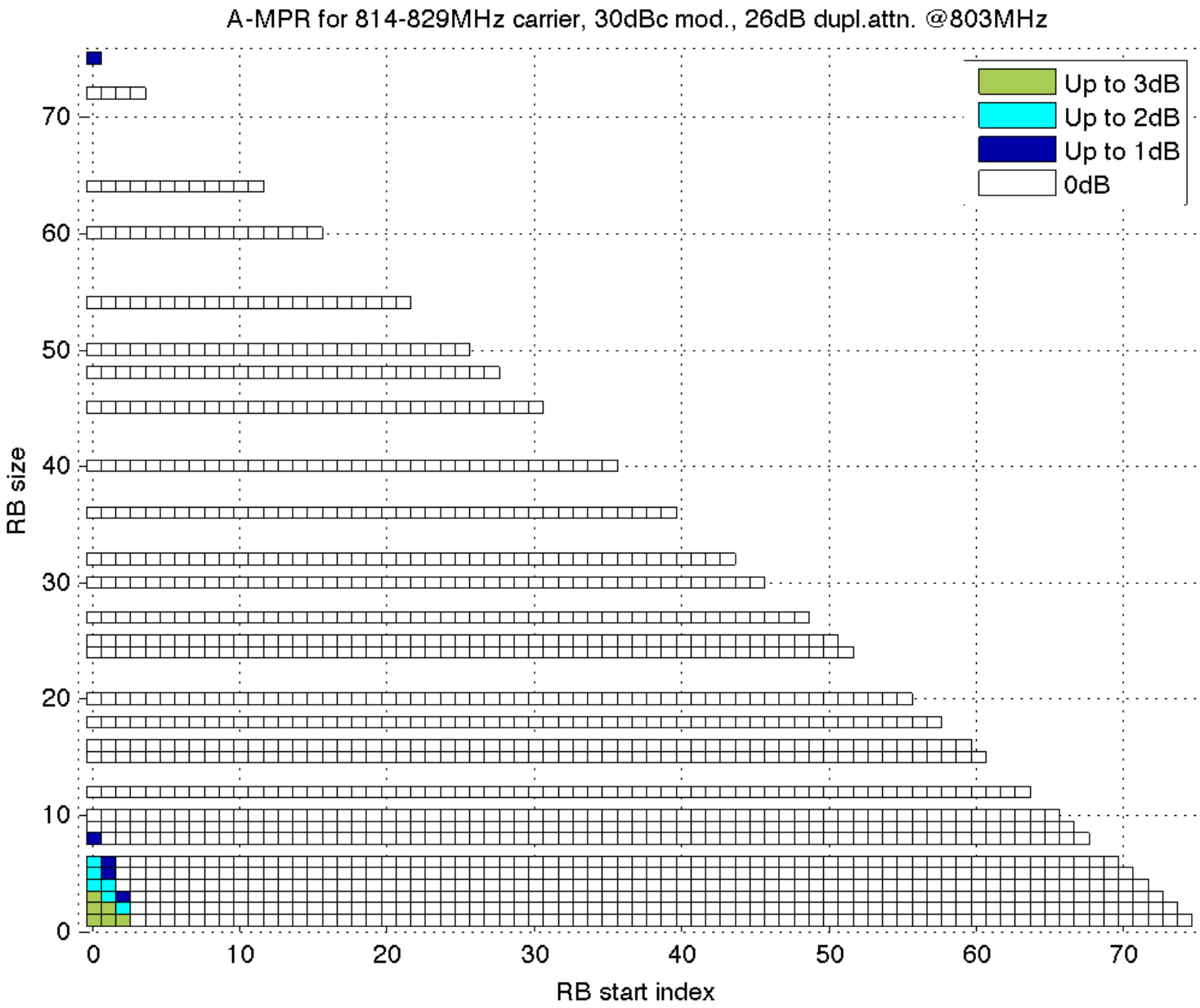

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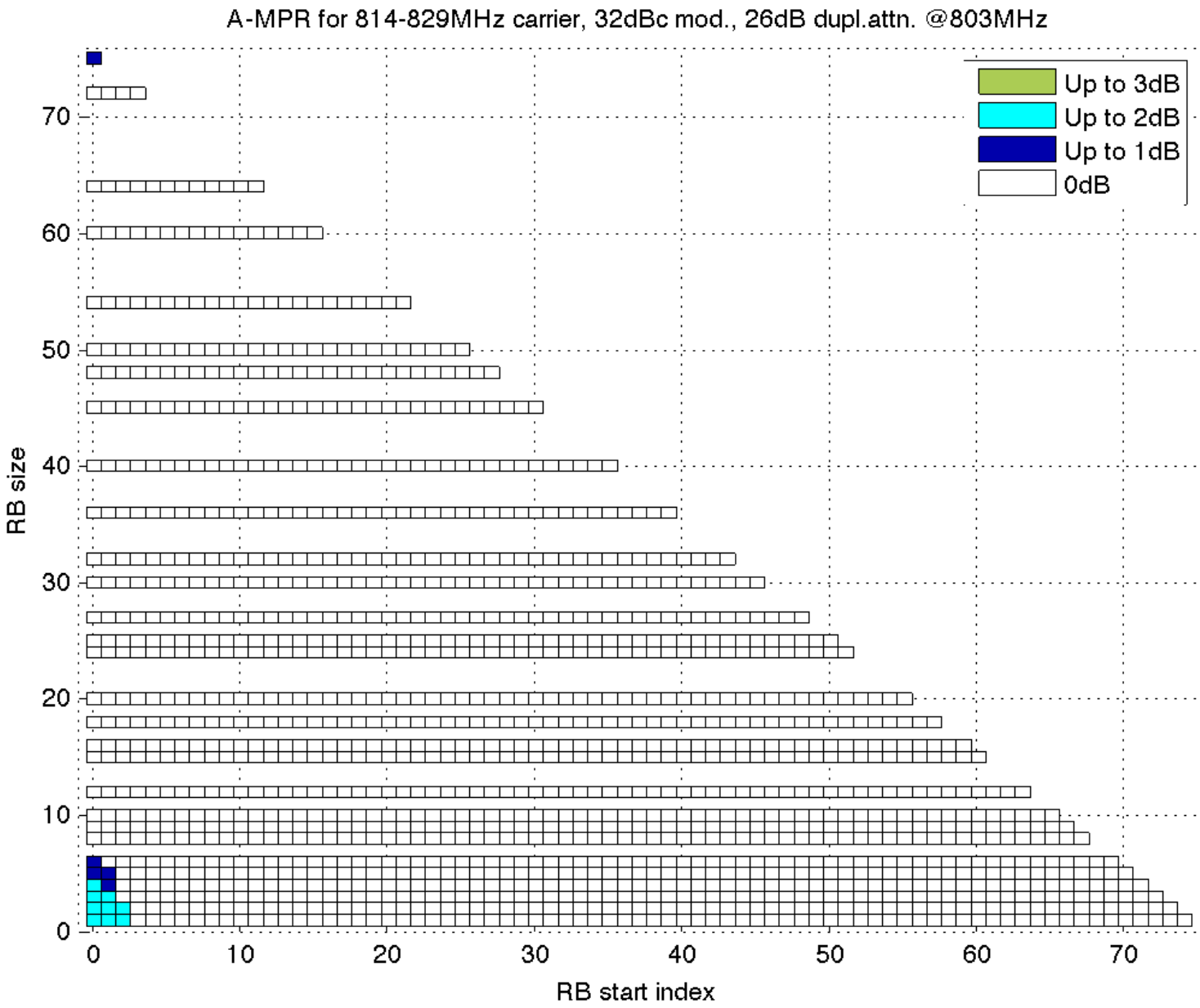

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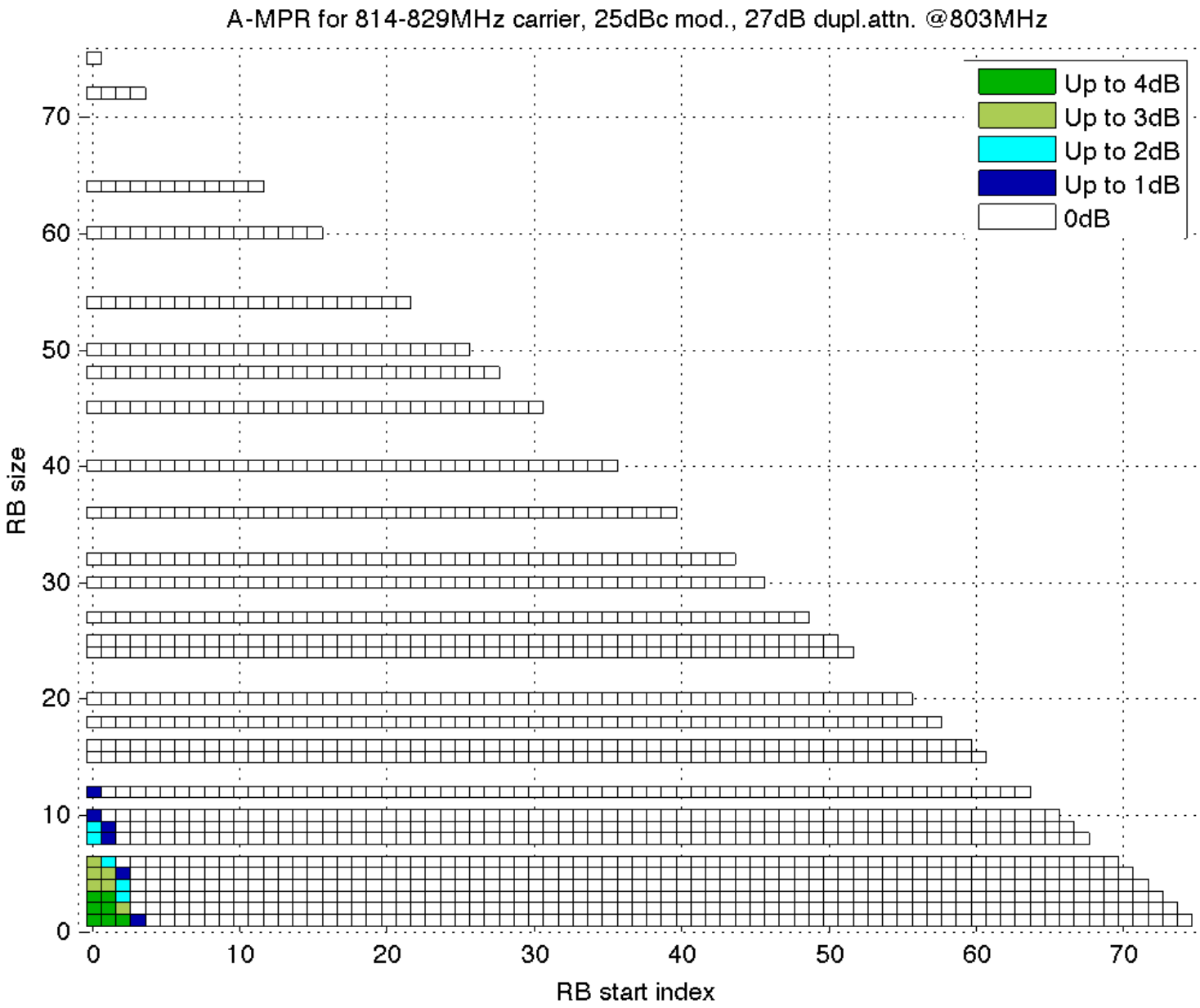

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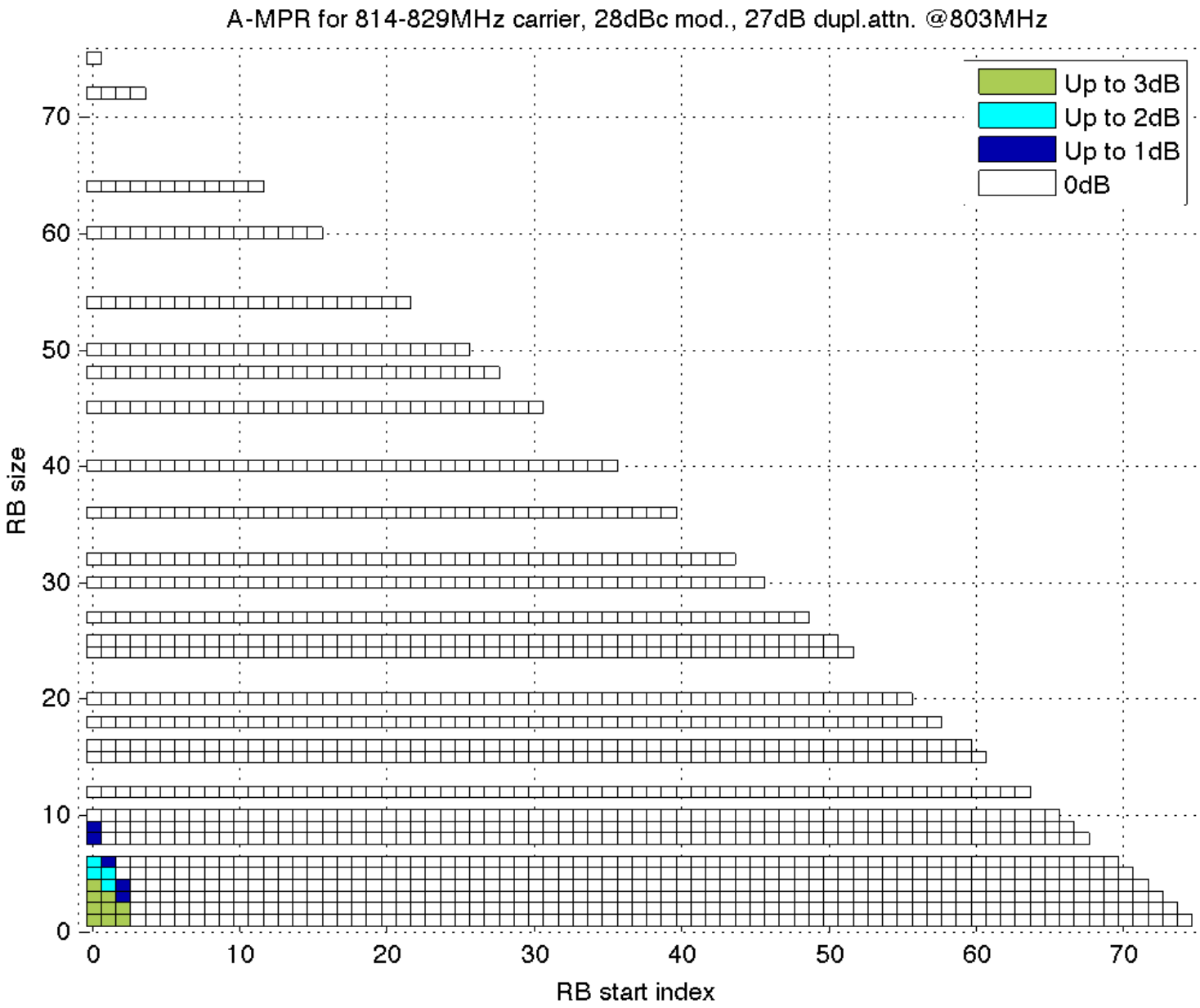

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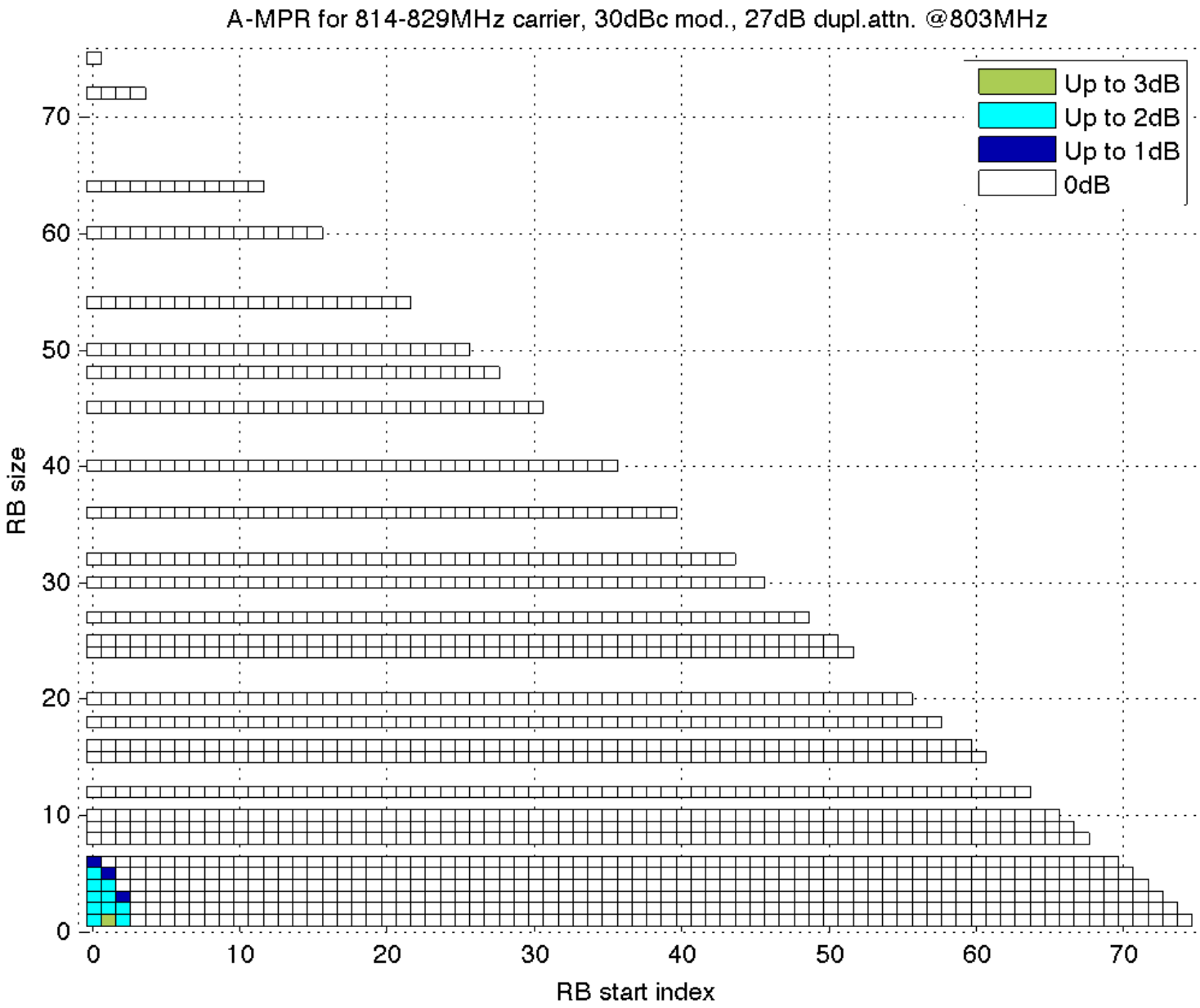

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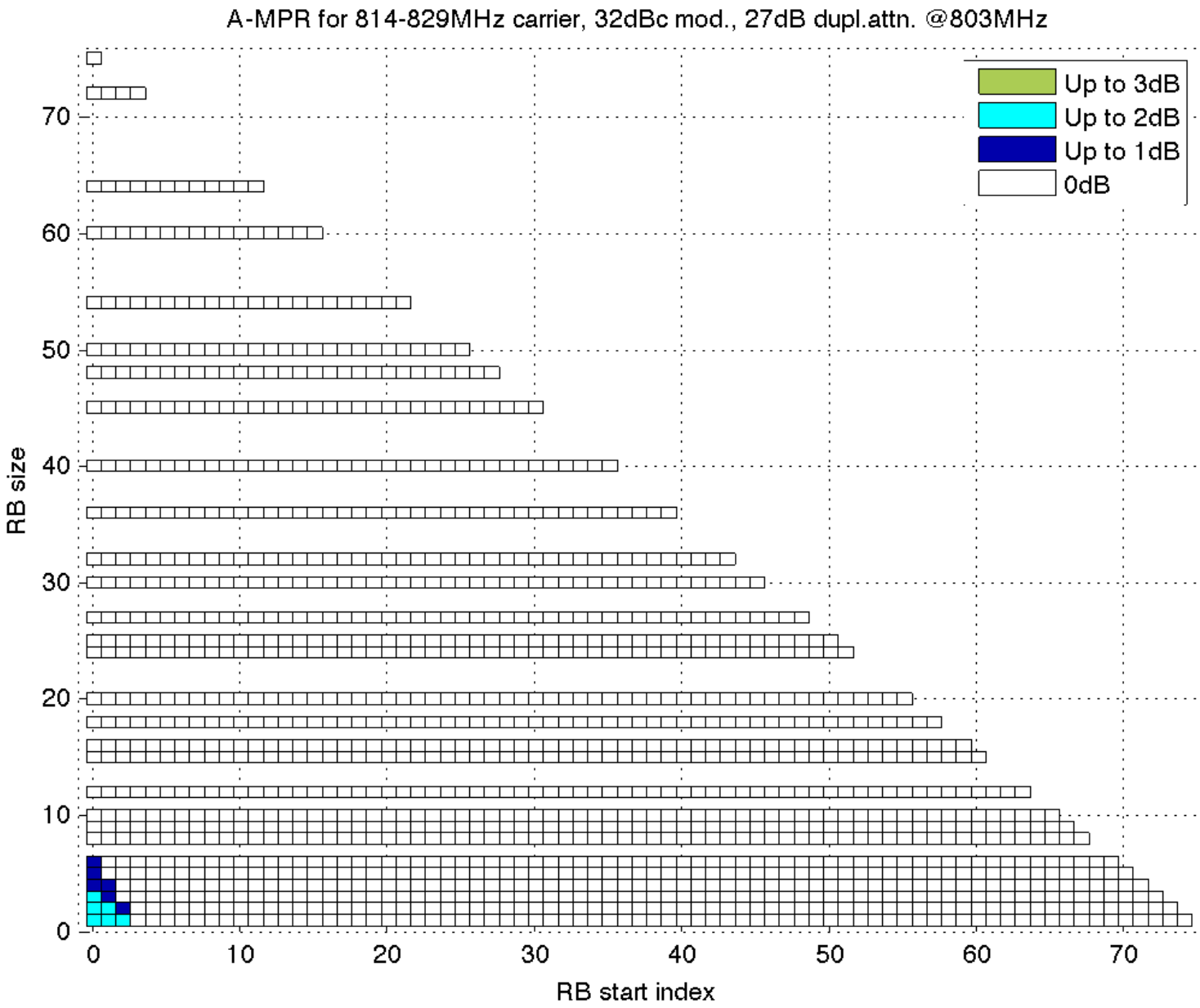

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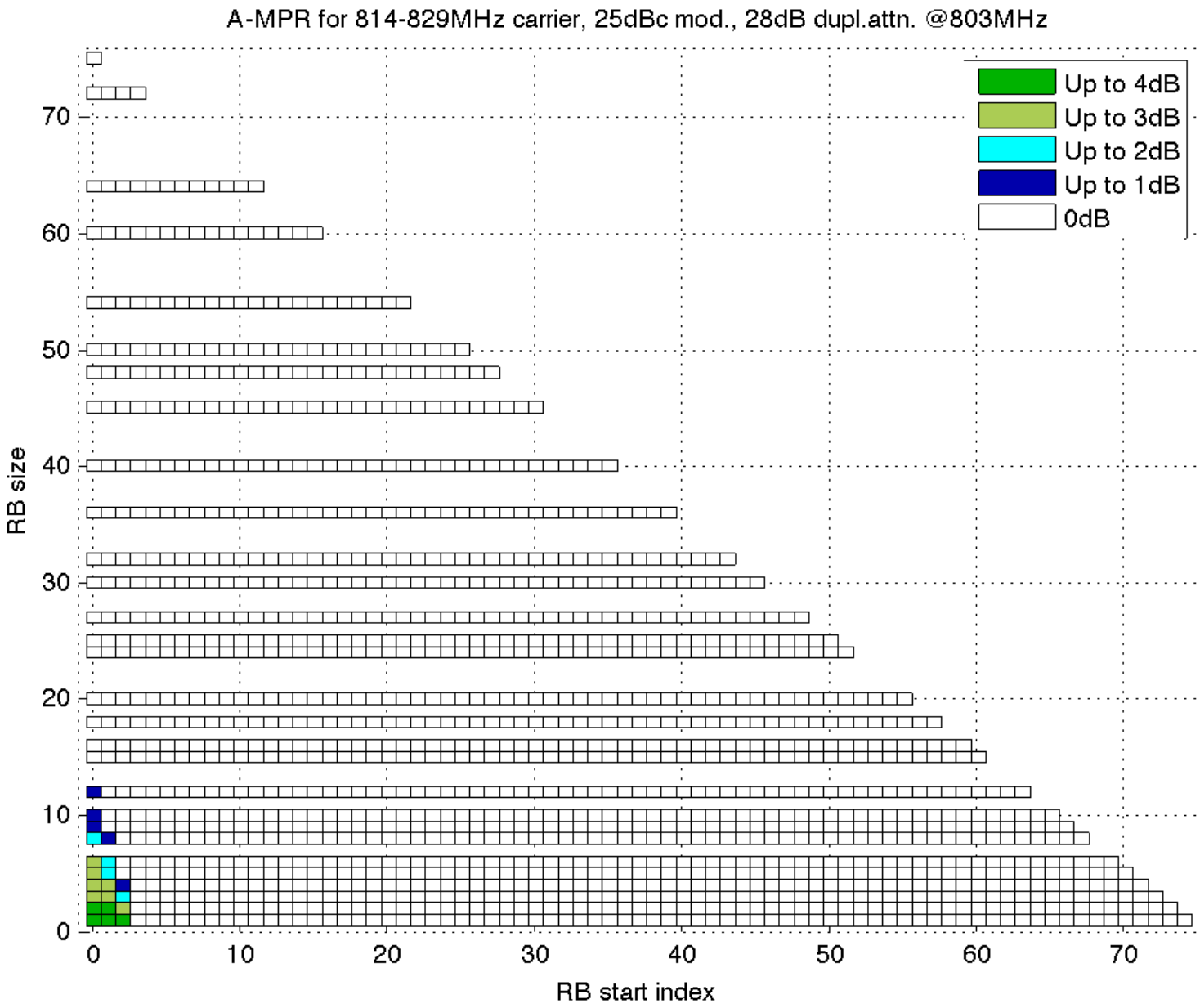

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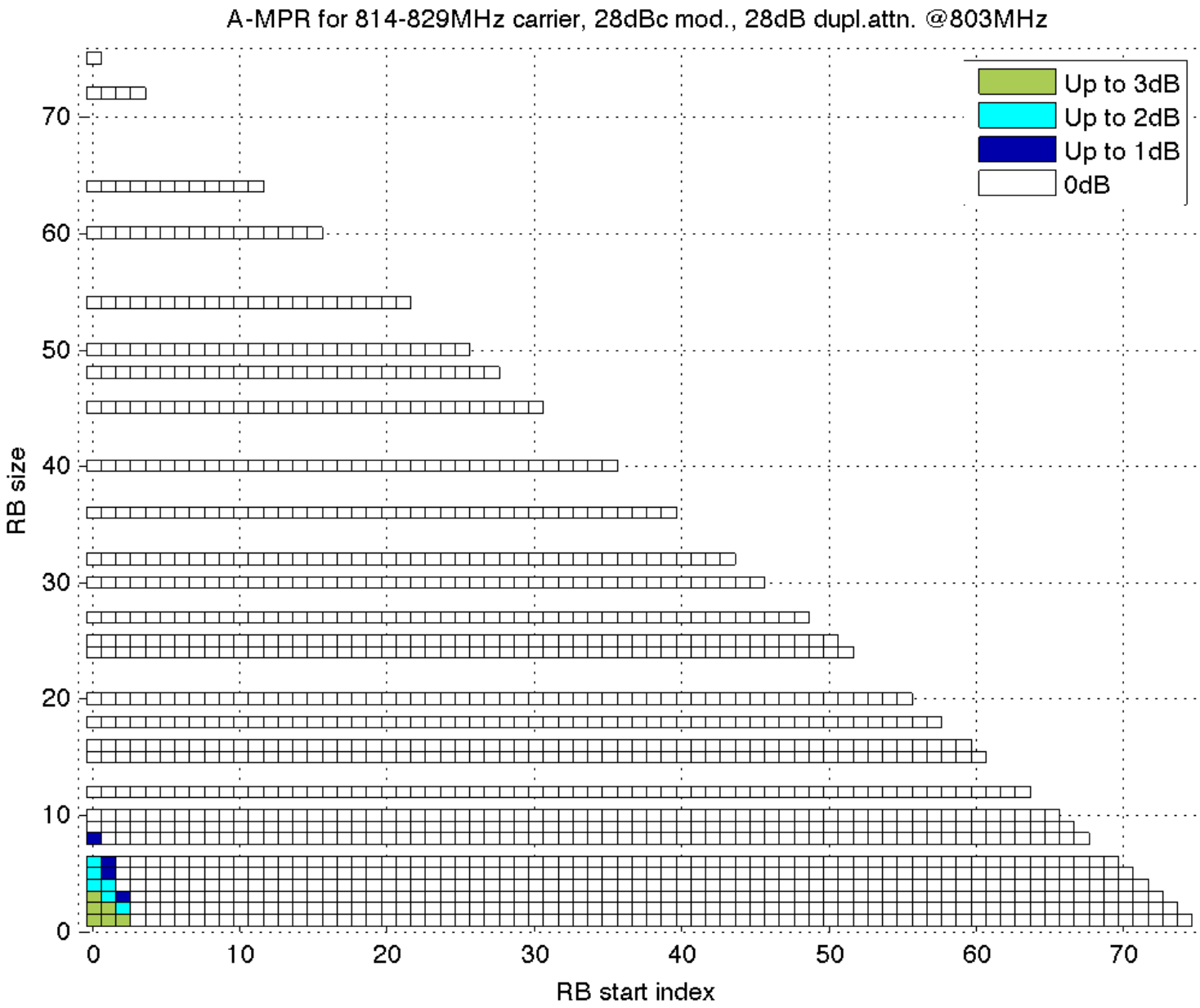

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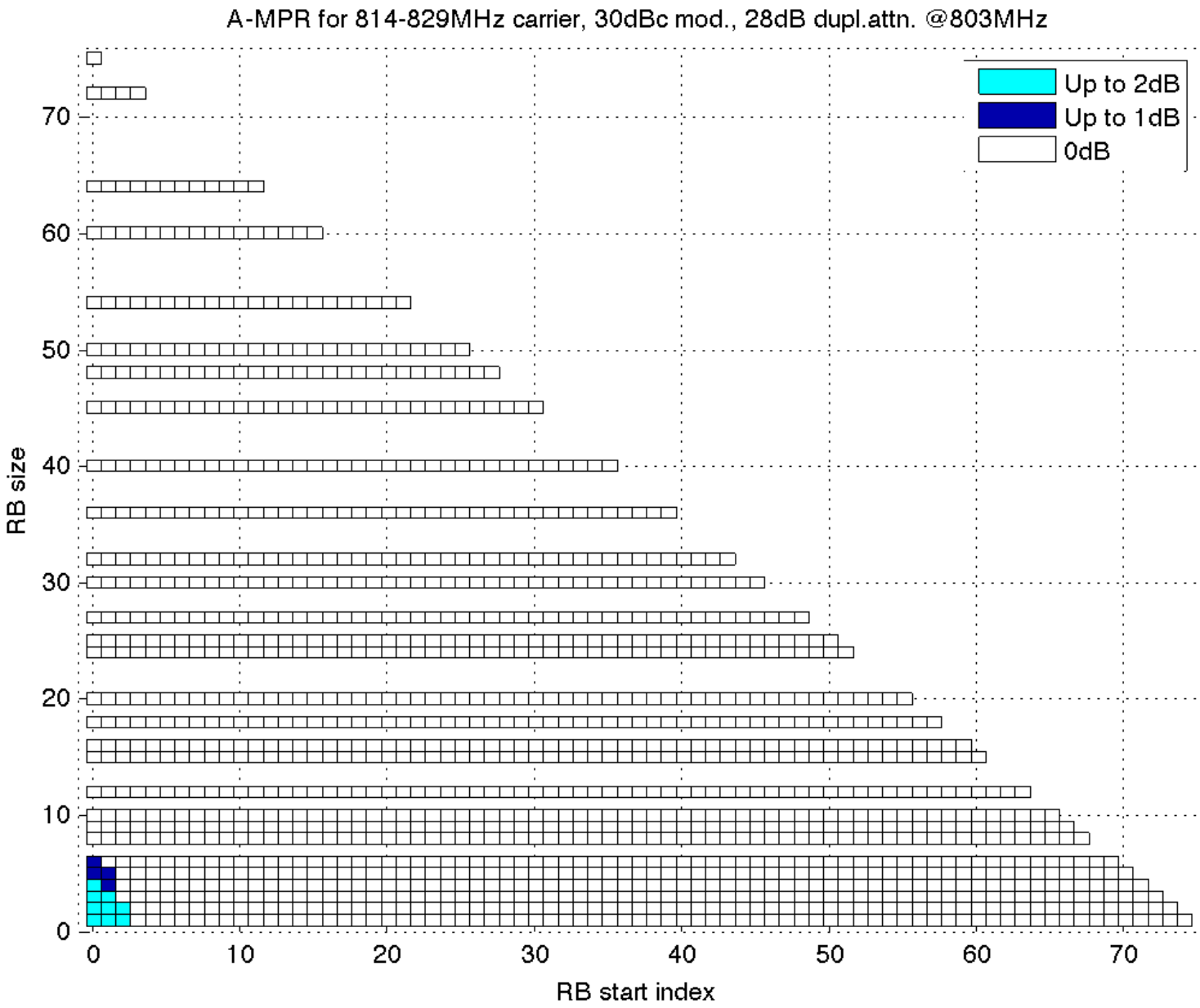

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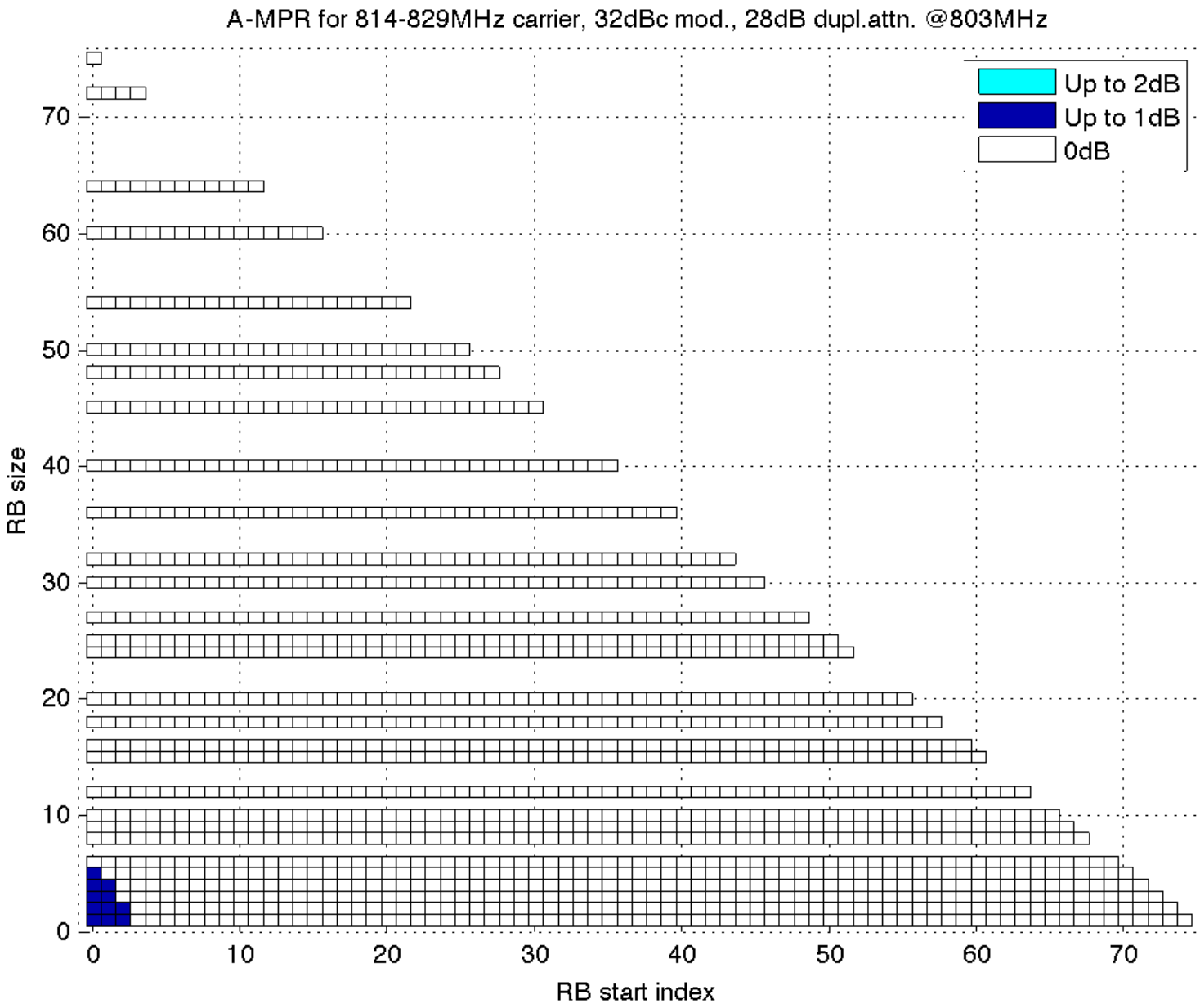

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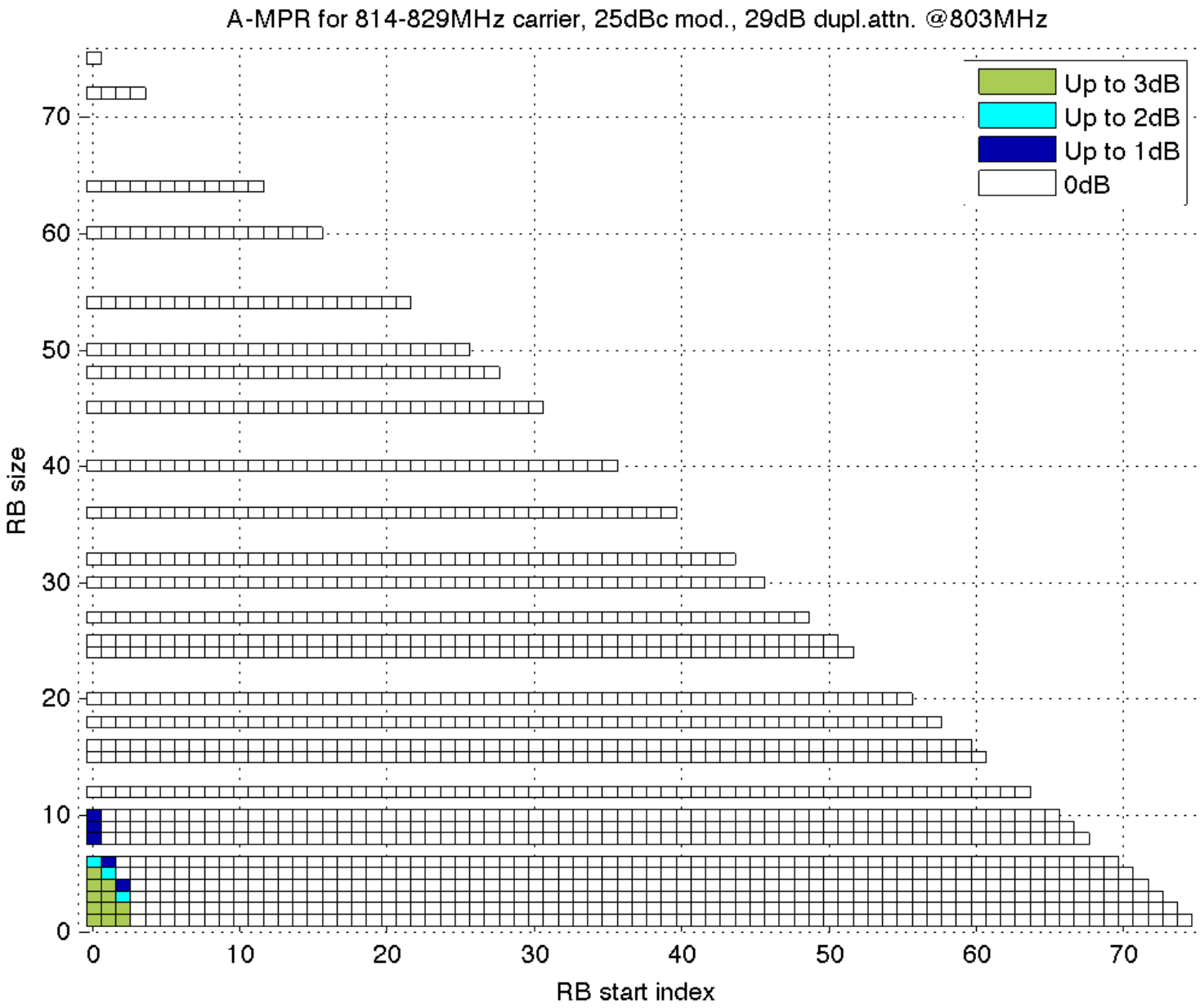

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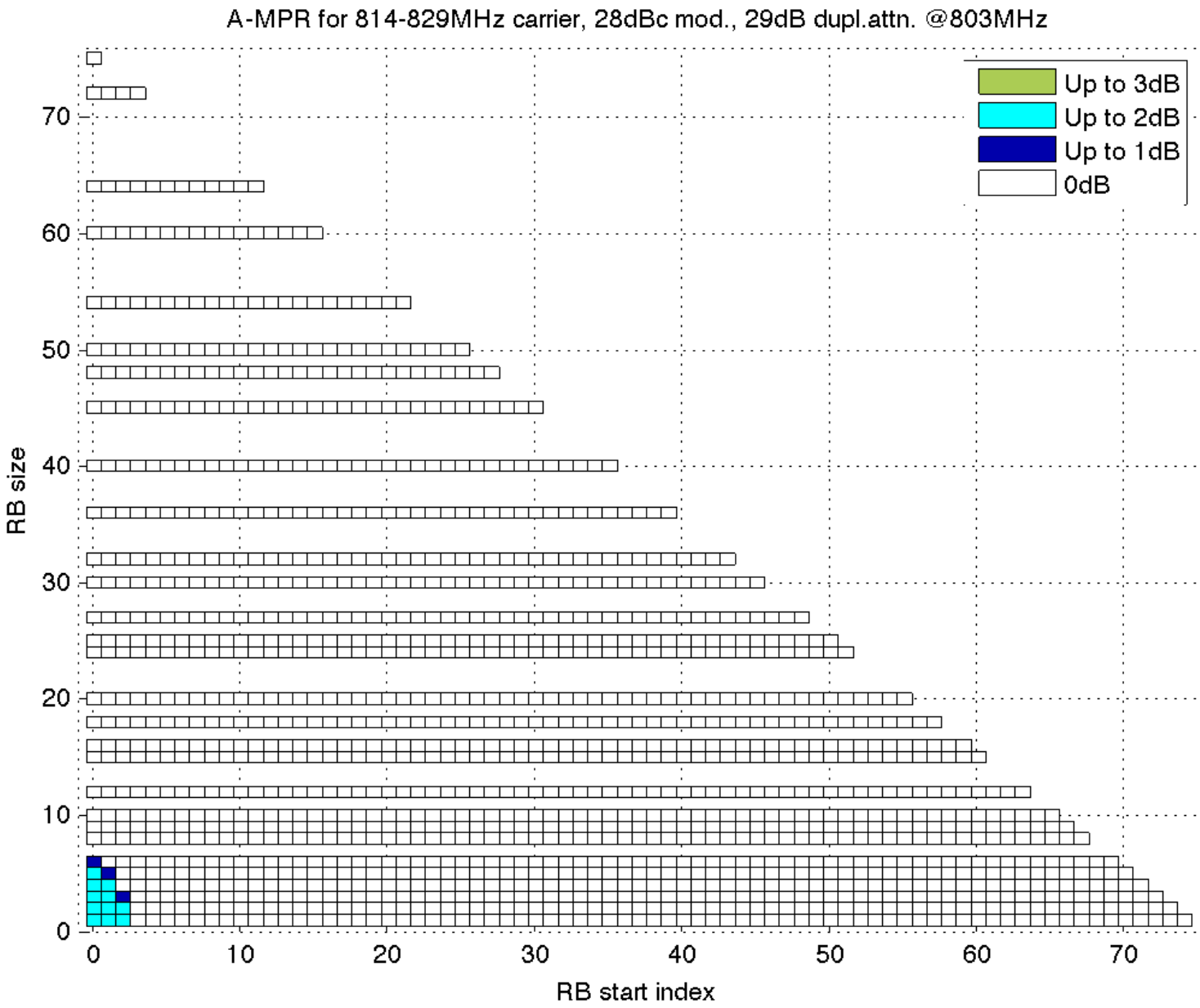

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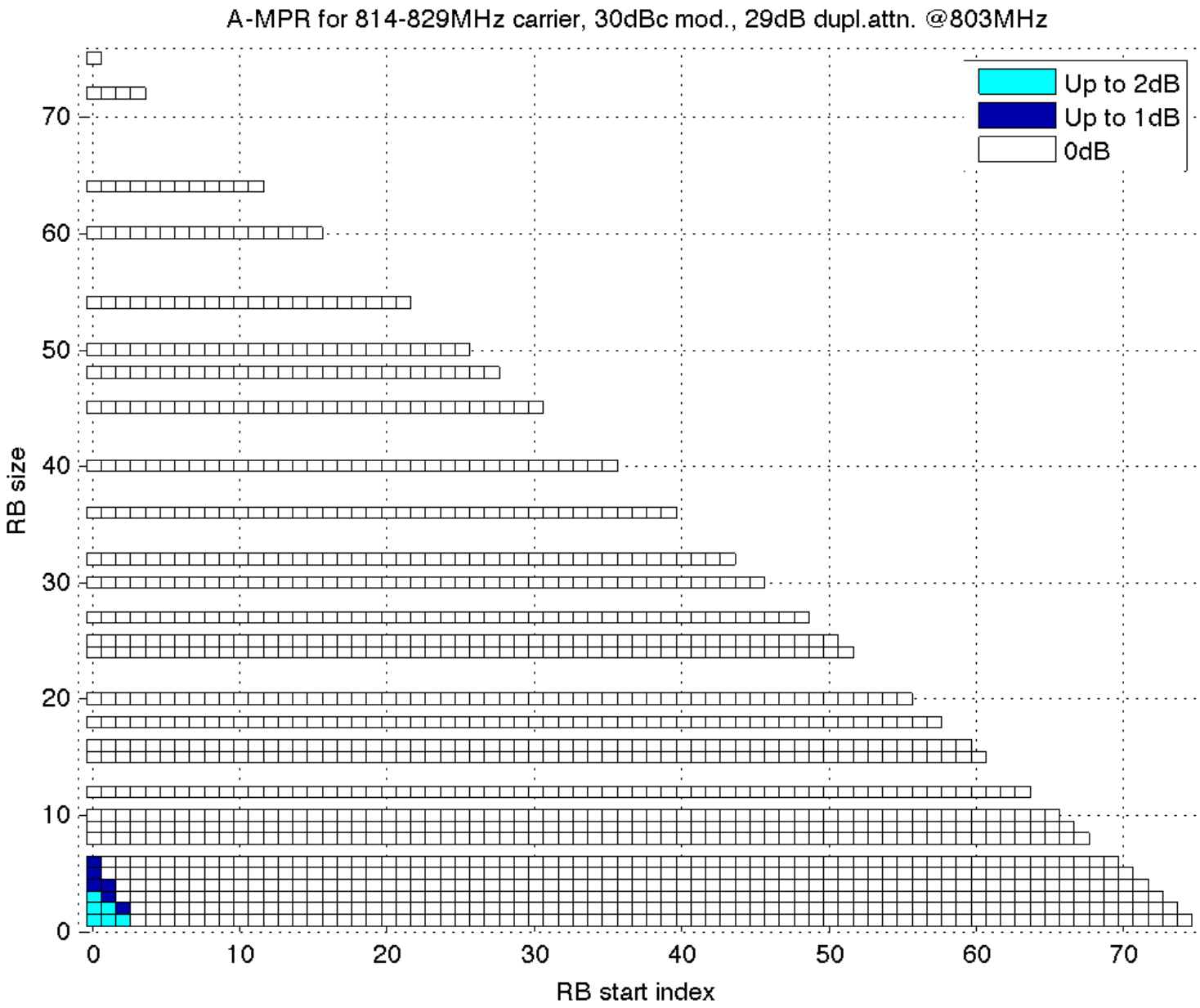

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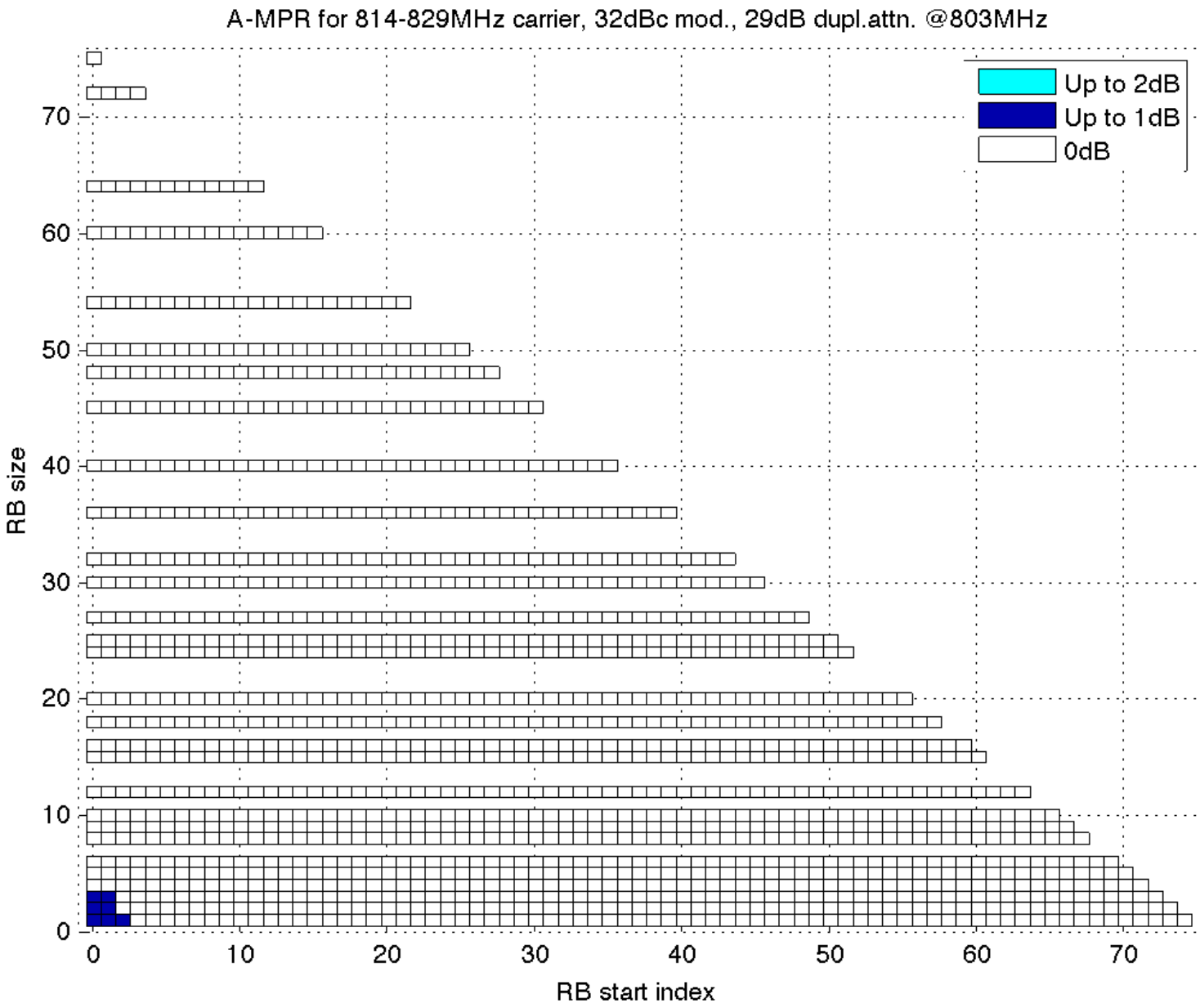

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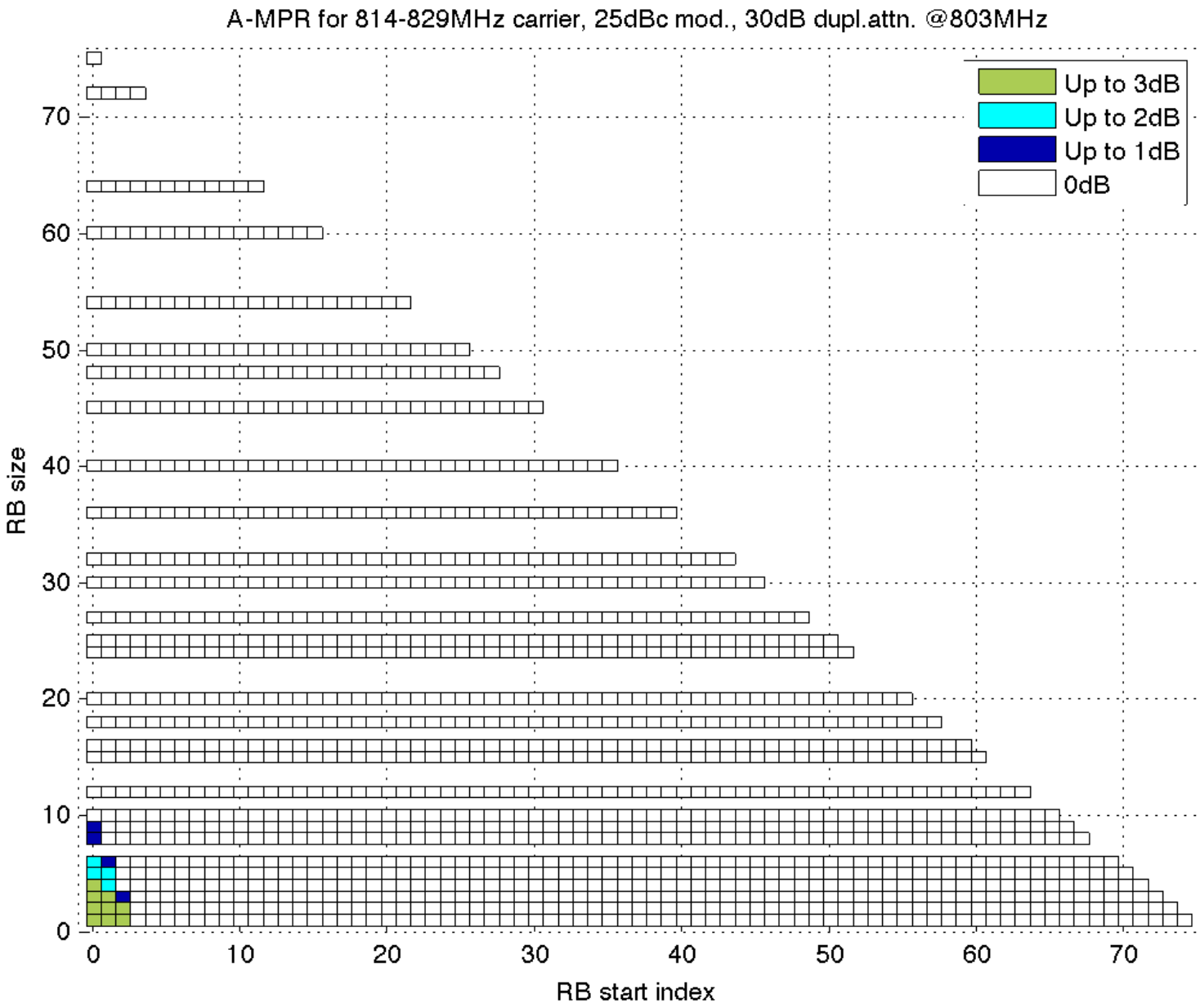

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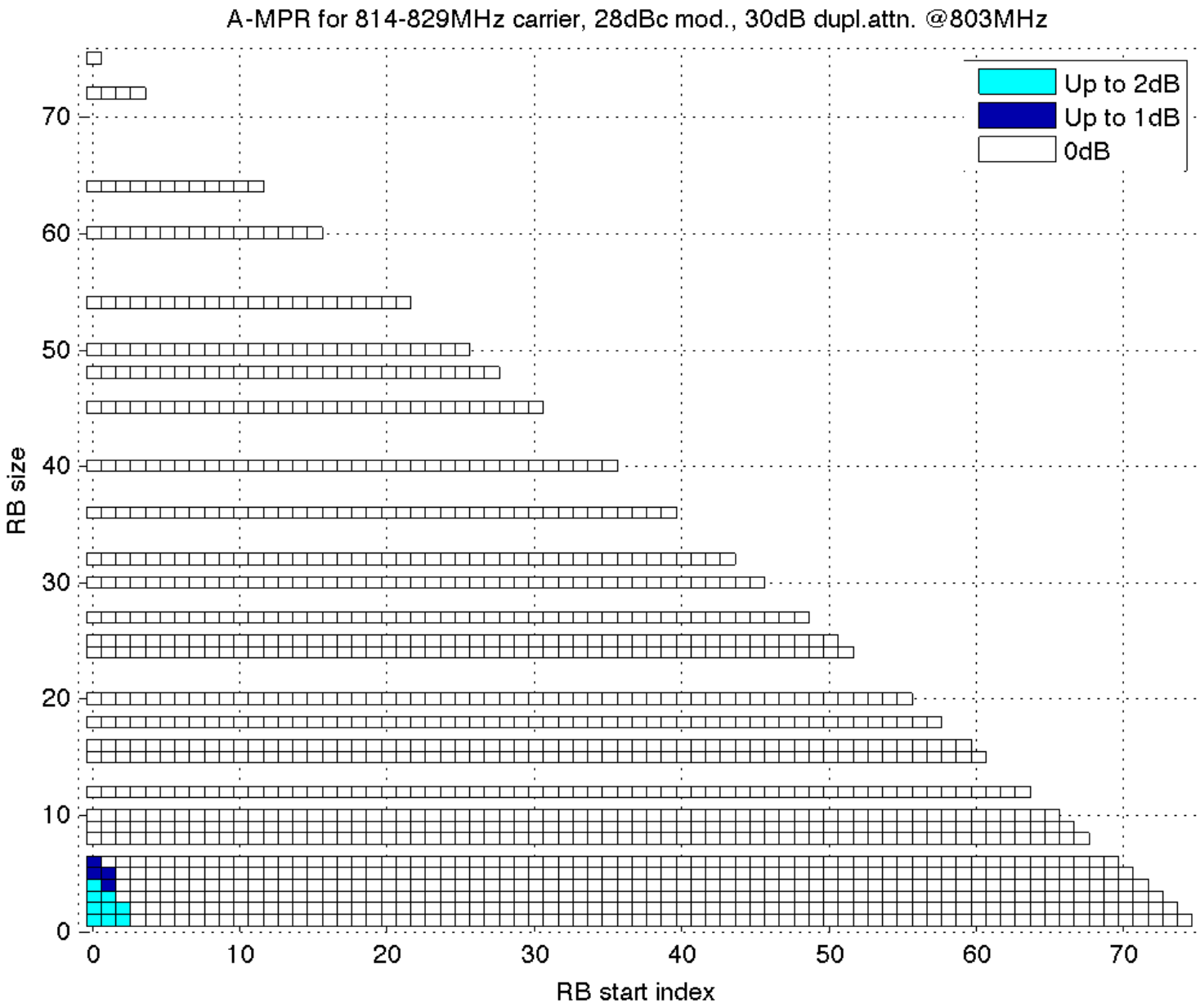

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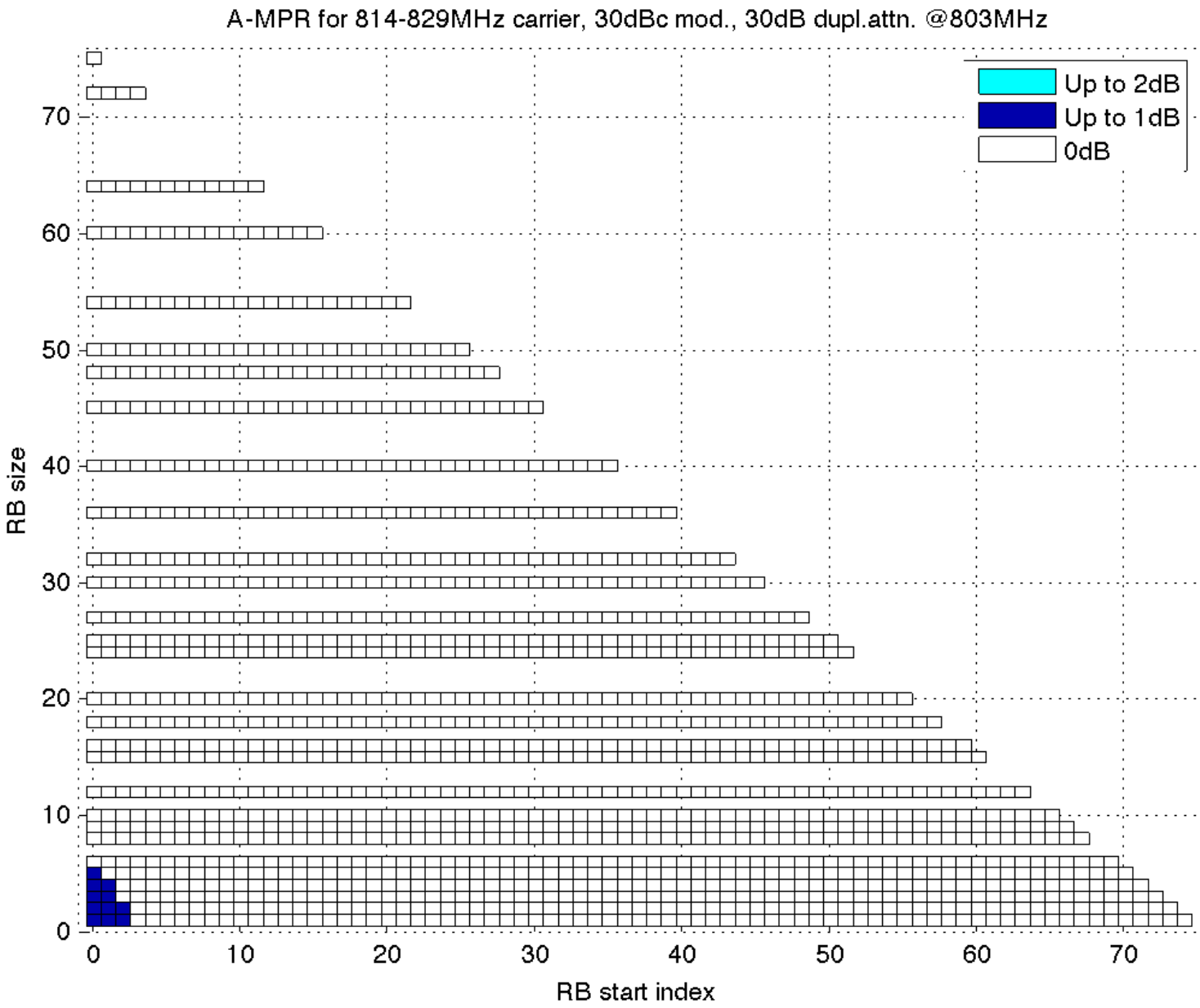

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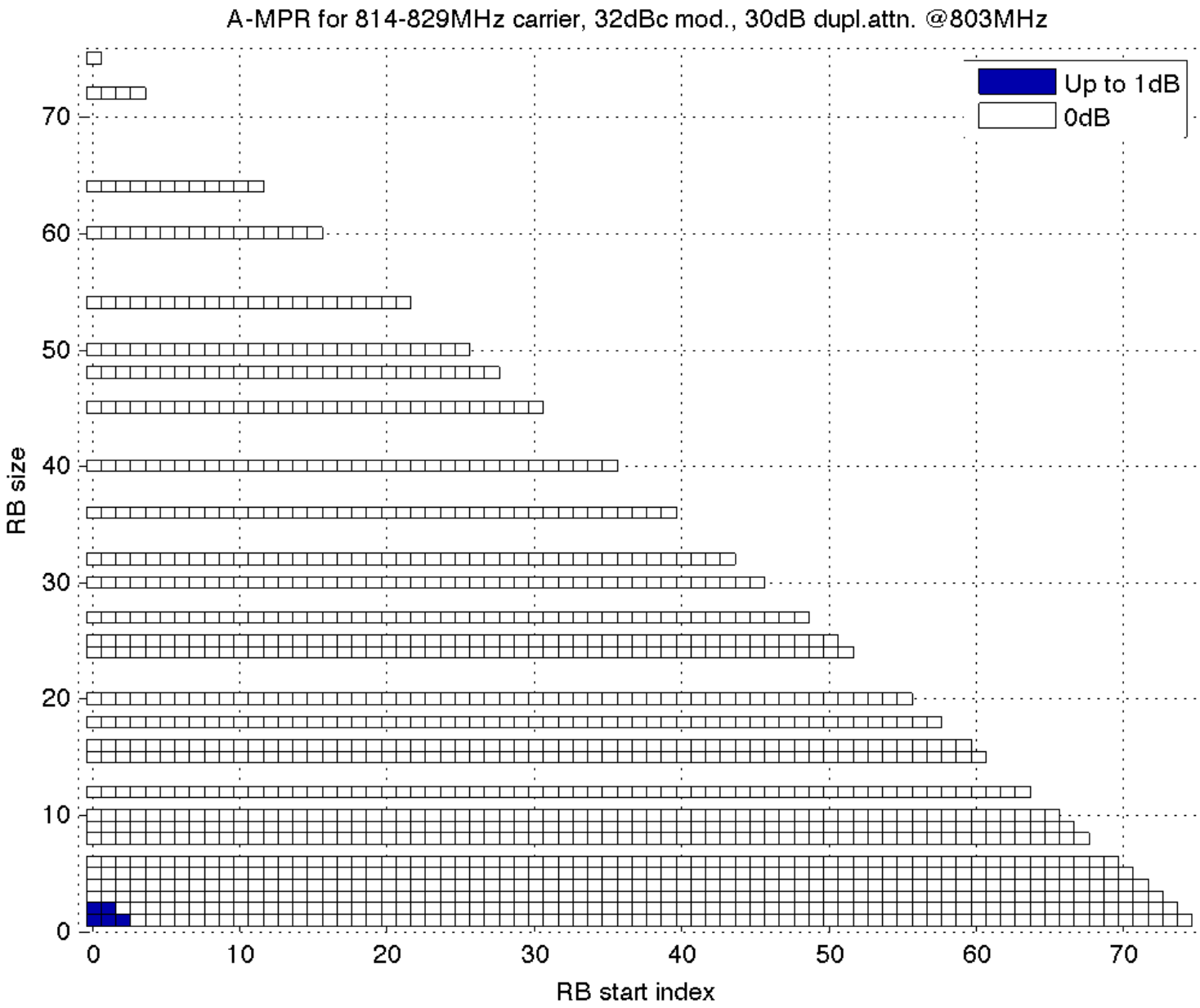

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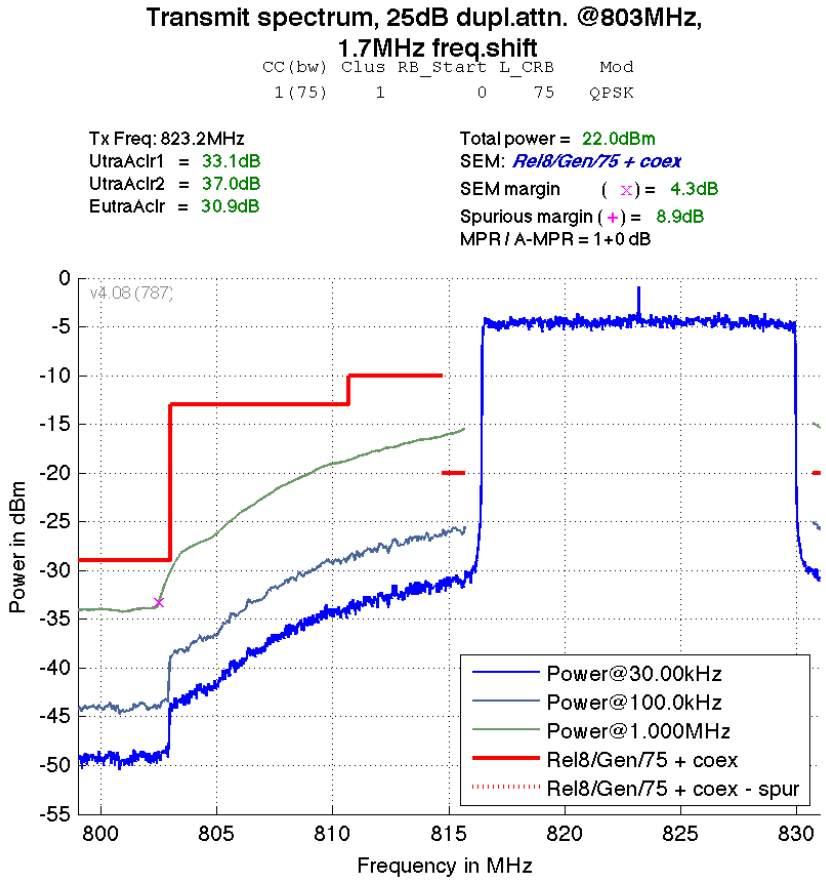
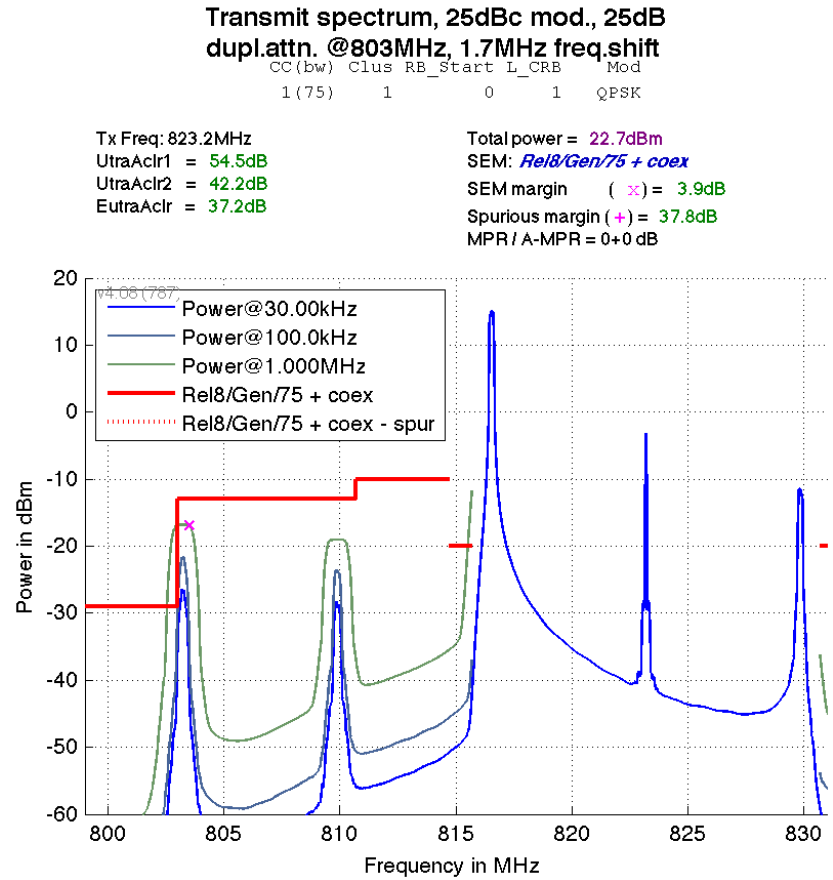
Full/single RB allocation

No A-MPR with ≥1.7MHz center frequency shift





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