

Highest Algebraic Degree $dh(n)$ of the Known APN Functions over \mathbb{F}_{2^n}

Conditions	$dh(n)$	Functions
$n = 4$	3	Budaghyan-Carlet-Pott [1, Theorem 2]
$n = 6$	4	Budaghyan-Carlet-Pott [1, Theorem 3]
$\gcd(n, 2) = 1$	$n - 1$	Inverse
$\gcd(n, 4) = 4$ and $n \geq 8$	$\frac{n}{2}$	Kasami
$n = 10$	5	Dobbertin
$\gcd(n, 4) = 2$ and $n \geq 12$	$\frac{n}{2} - 1$	Kasami

References

- [1] Lilya Budaghyan, Claude Carlet, and Alexander Pott. New classes of almost bent and almost perfect nonlinear polynomials. *IEEE Transactions on Information Theory*, 52(3):1141–1152, 2006.