1 BLT set 2 over GF(23)

Points on the quadric $x_0^2 + x_1x_2 + x_3x_4$:

$P_1 = (0, 1, 0, 0, 0)$

$P_2 = (0, 0, 1, 0, 0)$

$P_3 = (0, 1, 9, 22, 9)$

$P_4 = (0, 1, 8, 11, 16)$

$P_5 = (0, 1, 1, 15, 3)$

$P_6 = (0, 1, 4, 7, 6)$

$P_7 = (0, 1, 18, 5, 1)$

$P_8 = (0, 1, 6, 4, 10)$

$P_9 = (0, 1, 13, 2, 5)$

$P_{10} = (0, 1, 8, 12, 7)$

$P_{11} = (0, 1, 12, 20, 4)$

$P_{12} = (0, 1, 4, 16, 17)$

$P_{13} = (1, 7, 21, 10, 22)$

$P_{14} = (1, 16, 2, 5, 21)$

$P_{15} = (1, 12, 13, 22, 19)$

$P_{16} = (1, 11, 10, 20, 14)$

$P_{17} = (1, 15, 22, 12, 5)$

$P_{18} = (1, 2, 6, 13, 22)$

$P_{19} = (1, 8, 1, 21, 16)$

$P_{20} = (1, 21, 17, 5, 2)$

$P_{21} = (1, 1, 3, 3, 14)$

$P_{22} = (1, 22, 20, 22, 4)$

$P_{23} = (1, 14, 19, 21, 7)$

$P_{24} = (1, 9, 4, 11, 5)$

Stabilizer of order 1152 is generated by:

$$g_1 = \begin{pmatrix} 11 & 0 & 0 & 18 & 1 \\ 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 \\ 11 & 0 & 0 & 6 & 22 \\ 14 & 0 & 0 & 21 & 6 \end{pmatrix}$$

$$g_2 = \begin{pmatrix} 22 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 14 \\ 0 & 0 & 0 & 5 & 0 \end{pmatrix}$$

$$g_3 = \begin{pmatrix} 19 & 0 & 0 & 12 & 16 \\ 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 \\ 8 & 0 & 0 & 14 & 2 \\ 6 & 0 & 0 & 4 & 14 \end{pmatrix}$$

$$g_4 = \begin{pmatrix} 19 & 0 & 0 & 11 & 7 \\ 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 \\ 15 & 0 & 0 & 14 & 2 \\ 17 & 0 & 0 & 4 & 14 \end{pmatrix}$$

$$g_5 = \begin{pmatrix} 12 & 0 & 0 & 18 & 1 \\ 0 & 0 & 3 & 0 & 0 \\ 0 & 8 & 0 & 0 & 0 \\ 11 & 0 & 0 & 18 & 15 \\ 14 & 0 & 0 & 7 & 18 \end{pmatrix}$$

$$g_6 = \begin{pmatrix} 10 & 0 & 0 & 9 & 12 \\ 0 & 13 & 2 & 10 & 2 \\ 0 & 13 & 12 & 18 & 22 \\ 6 & 16 & 20 & 14 & 14 \\ 16 & 11 & 8 & 5 & 14 \end{pmatrix}$$

$$g_7 = \begin{pmatrix} 11 & 0 & 0 & 5 & 22 \\ 0 & 22 & 0 & 0 & 0 \\ 0 & 7 & 22 & 14 & 12 \\ 12 & 12 & 0 & 6 & 22 \\ 9 & 14 & 0 & 21 & 6 \end{pmatrix}$$

$$g_8 = \begin{pmatrix} 0 & 8 & 4 & 11 & 16 \\ 10 & 1 & 3 & 8 & 13 \\ 6 & 8 & 1 & 20 & 7 \\ 16 & 19 & 15 & 21 & 6 \\ 11 & 6 & 21 & 6 & 1 \end{pmatrix}$$

Induced action on the BLT-set:

The induced group has order 1152 and is generated by:

g_1 =(13, 18, 21)(14, 20, 22)(15, 19, 24)(16, 17, 23)

g_2 =(13, 14)(15, 16)(17, 19)(18, 20)(21, 22)(23, 24)

g_3 =(15, 17)(16, 19)(18, 21)(20, 22)(23, 24)

g_4 =(13, 15)(14, 16)(17, 22)(18, 24)(19, 21)(20, 23)

g_5 =(1, 2)(3, 5)(4, 6)(7, 11)(8, 9)(10, 12)(13, 22, 18, 14, 21, 20)(15, 23, 19, 16, 24, 17)

g_6 =(1, 3, 6, 9, 11, 7, 8, 4, 5, 2, 10, 12)(13, 20)(14, 18)(15, 24)(16, 23)(21, 22)

g_7 =(2, 9)(3, 12)(4, 7)(5, 11)(6, 10)(13, 22, 18, 14, 21, 20)(15, 23, 19, 16, 24, 17)

g_8 =(1, 13, 3, 15)(2, 24, 11, 18)(4, 16, 8, 14)(5, 21, 7, 19)(6, 22, 12, 17)(9, 23, 10, 20)

Kernel has order 1 and is generated by:

There are 1 orbits on the BLT set.

The orbit length are [24]

The orbits are:

$O_0 = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24\}$ (length 24)