(nRot: next value for rotation counter – simulating rotating left joystick. pRot: previous value for rotation counter)

nRot = pRot + (AnalogIN * X_2),   if X_2 != 0
        0 + (AnalogIN * X_2),   if X_2 == 0

Y = Y + cos(pRot),   if X_2 != 0
    Y,   if X_2 == 0

X = -X – sin(pRot),   if X_2 != 0
    -X,   if X_2 == 0

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Length = 22"
Width = 20.5"
R = (Length^2 + Width^2)$^{0.5}$

A = X – (-X_2 * (L/**R**))
B = X + (-X_2 * (L/**R**))
C = Y – (-X_2 * (W/**R**))
D = Y + (-X_2 * (W/**R**))

WD_1 = (B^2 + C^2)$^{0.5}$
WD_2 = (B^2 + D^2)$^{0.5}$
WD_3 = (A^2 + D^2)$^{0.5}$
WD_4 = (A^2 + C^2)$^{0.5}$

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outFLS = 360 – FLS
outFRS = 360 – FRS
outBLS = 360 – BLS
outBRS = 360 – BRS

dMax = largest of $WD_{1...4}$
dCondition = dMax > 1

outFLD = (dCondition) ? WD_2 / dMax : WD_2
outFRD = (dCondition) ? WD_1 / dMax : WD_1
outBLD = (dCondition) ? WD_3 / dMax : WD_3
outBRD = (dCondition) ? WD_4 / dMax : WD_4

$$FLS = \begin{cases} 360 + tempFLS, & if\ tempFLS > 0 \\ tempFLS \end{cases}$$

$$tempFLS = \begin{cases} 0, & if\ \overline{B + D} \\ atan2(B, D) * \dfrac{180}{Pi} \end{cases}$$

$$tempFLS = \begin{cases} 0, & if\ \overline{B + D} \\ atan2(B, D) * \dfrac{180}{Pi} \end{cases}$$

$$FRS = \begin{cases} 360 + tempFRS, & if\ tempFRS > 0 \\ tempFRS \end{cases}$$

$$tempFRS = \begin{cases} 0, & if\ \overline{B + C} \\ atan2(B, C) * \dfrac{180}{Pi} \end{cases}$$

$$BLS = \begin{cases} 360 + tempBLS, & if\ tempBLS > 0 \\ tempBLS \end{cases}$$

$$tempBLS = \begin{cases} 0, & if\ \overline{A + D} \\ atan2(A, D) * \dfrac{180}{Pi} \end{cases}$$

$$BRS = \begin{cases} 360 + tempBRS, & if\ tempBRS > 0 \\ tempBRS \end{cases}$$

$$tempBRS = \begin{cases} 0, & if\ \overline{A + C} \\ atan2(A, C) * \dfrac{180}{Pi} \end{cases}$$