



New DS770 PROJECT

OPOS Interface Protocol

[illegible]

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Character Set

The ASCII control characters used are:

Character	Code (hex)
ACK	06
NAK	15
ENQ	05
STX	02
ETX	03
CR	0D
DCI	11
CAN	18
NUL	00
RS	1E

Interface Protocol

1. ICL (ACTUAL)

- **Transmission Format**

Code	ID Code	Weight					Code	Code
STX	ID	W5	W4	W3	W2	W1	BCC	ETX

Scale Capacity	ID Byte							ID Code (Hex)
	6	5	4	3	2	1	0	
15 kg	1	1	X	1	0	0	1	69
6 kg	1	1	X	1	0	1	1	6B

BCC is a block check character formed by performing as exclusive OR on all data bytes excluding ETX and STX.

Example:

BCC = <ID> XOR <W5> XOR <W4> XOR <W3> XOR <W2> XOR <W1> XOR 7F

- **Communication Protocol**

ECR send : ENQ

DS 770 send : STX <ID> W5 W4 W3 W2 W1 <BCC> ETX

- **Communication Parameter**

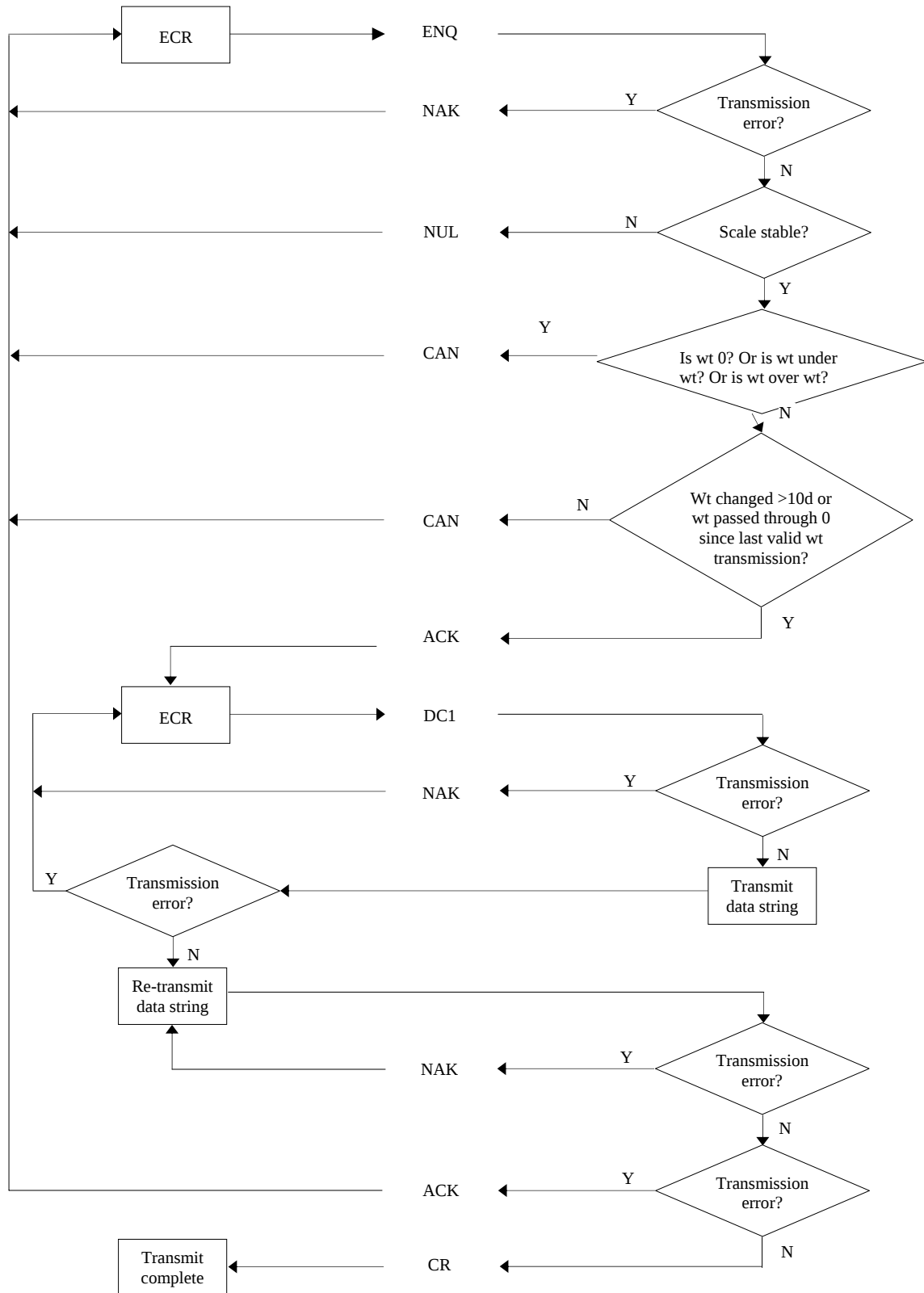
Baud rate	2400
Data Bits	7
Parity	Even
Stop Bit	1 Bit

- **Flow chart**

ICL (ACTUAL) ECR

POS

DS 770



2. ICL (ACTUAL, OMRON)

- **Transmission Format**

Code	ID Code	Weight					Code	Code
STX	ID	W5	W4	W3	W2	W1	BCC	ETX

Scale Capacity	ID Byte							ID Code (Hex)
	6	5	4	3	2	1	0	
15 kg	1	1	X	1	0	0	1	69
6 kg	1	1	X	1	0	1	1	6B

BCC is a block check character formed by performing an exclusive OR on all data bytes excluding ETX and STX, and then OR 7F.

Example:

BCC = <ID> XOR <W5> XOR <W4> XOR <W3> XOR <W2> XOR <W1> XOR 7F

- **Communication Protocol**

ECR send : ENQ

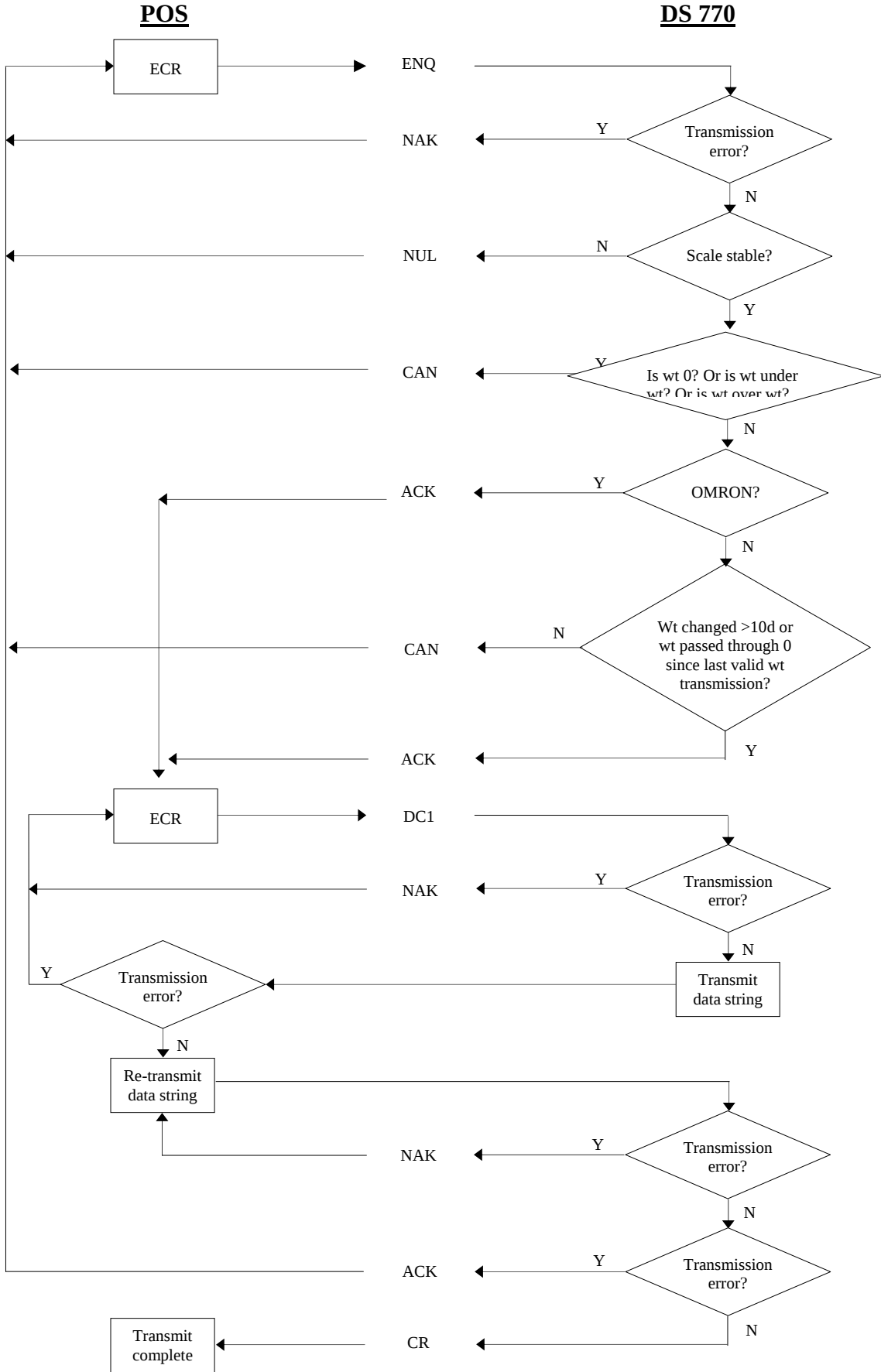
DS 770 send : STX <ID> W5 W4 W3 W2 W1 <BCC> ETX

- **Communication Parameter**

Baud rate	2400
Data Bits	7
Parity	Even
Stop Bit	1 Bit

- **Flow chart**

ICL (ACTUAL,OMRON) ECR



3. ICL (IBM)

- **Transmission Format**

Code	ID Code	Weight					Code	Code
STX	ID	W5	W4	W3	W2	W1	BCC	ETX

Scale Capacity	ID Byte							ID Code (Hex)
	6	5	4	3	2	1	0	
15 kg	1	1	X	1	0	0	1	69
6 kg	1	1	X	1	0	1	1	6B

BCC is a block check character formed by performing an exclusive OR on all data bytes excluding ETX and STX, and then OR 7F.

Example:

BCC = <ID> XOR <W5> XOR <W4> XOR <W3> XOR <W2> XOR <W1> XOR 7F

- **Communication Protocol**

ECR send : ENQ

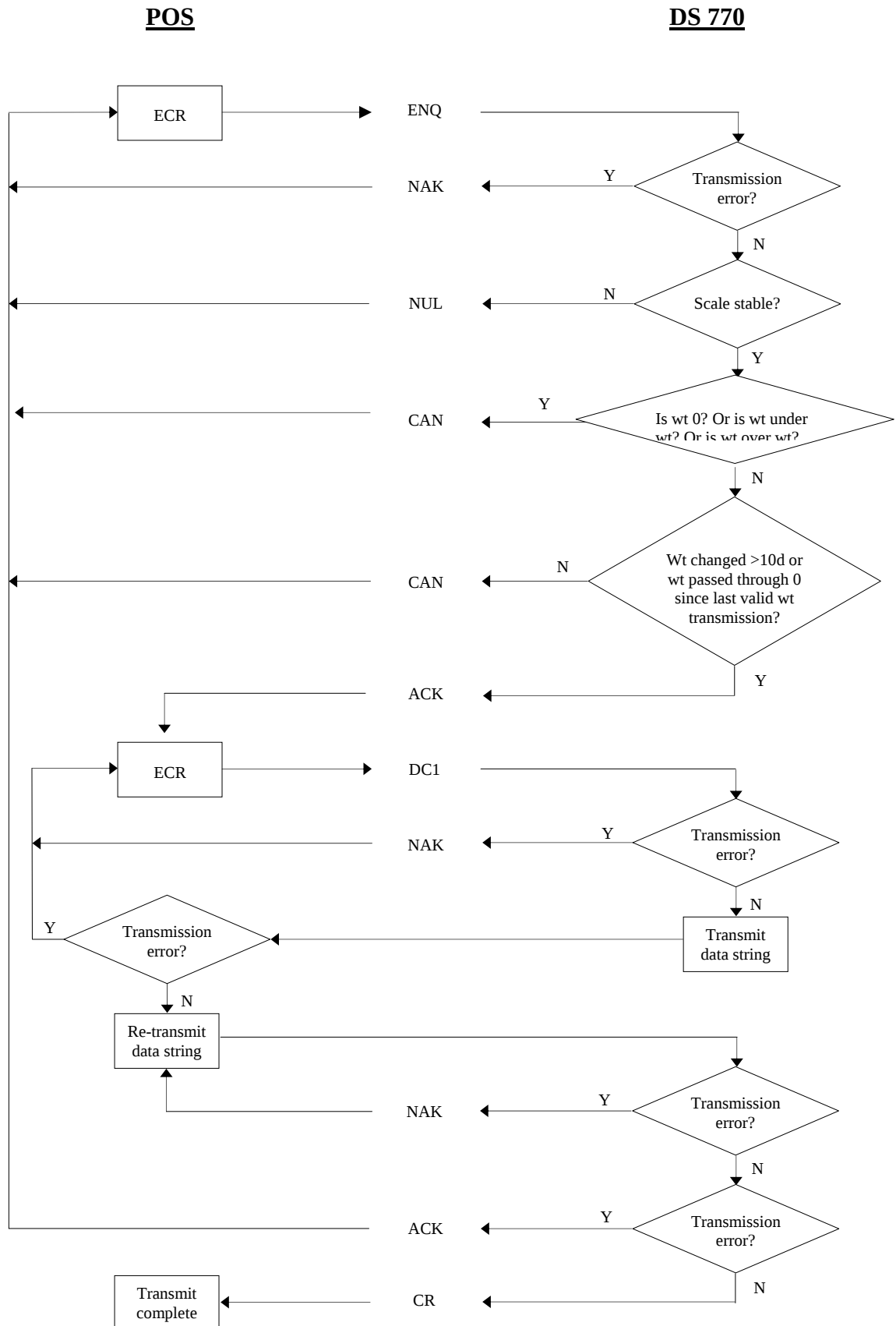
DS 770 send : STX <ID> W5 W4 W3 W2 W1 <BCC> ETX

- **Communication Parameter**

Baud rate	2400
Data Bits	7
Parity	Even
Stop Bit	1 Bit

- **Flow chart**

ICL (IBM) ECR



4. ICL (CS500)

- **Transmission Format**

Code	ID Code	Weight					Code	Code
STX	ID	W5	W4	W3	W2	W1	BCC	ETX

Scale Capacity	ID Byte							ID Code (Hex)
	6	5	4	3	2	1	0	
15 kg	1	1	X	1	0	0	1	69
6 kg	1	1	X	1	0	1	1	6B

BCC is a block check character formed by performing as exclusive OR on all data bytes excluding ETX and STX.

Example:

BCC = <ID> XOR <W5> XOR <W4> XOR <W3> XOR <W2> XOR <W1>

- **Communication Protocol**

ECR send : ENQ

DS 770 send : STX <ID> W5 W4 W3 W2 W1 <BCC> ETX

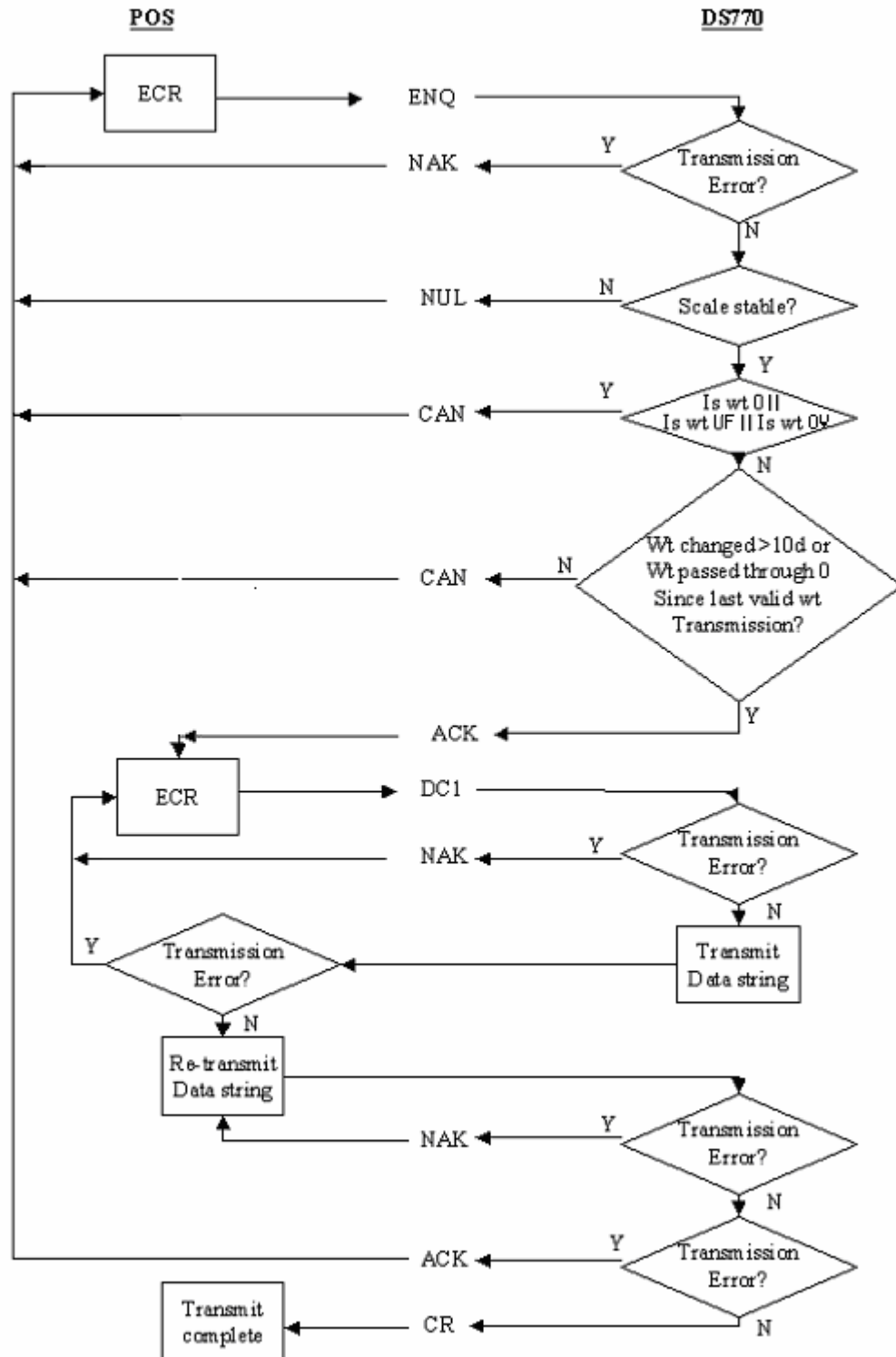
- **Communication Parameter**

Baud rate	2400, 4800 or 9600
Data Bits	7
Parity	Even
Stop Bit	1 Bit

- **Flow chart**

FLOW CHART

ICL (CS500)



5. HUGIN (RS)

- TRANSMISSION FORMAT

WEIGHT					LAST CHARACTER
D5	D4	D3	D2	D1	RS

- COMMUNICATION PROTOCOL

ECR send : ENQ

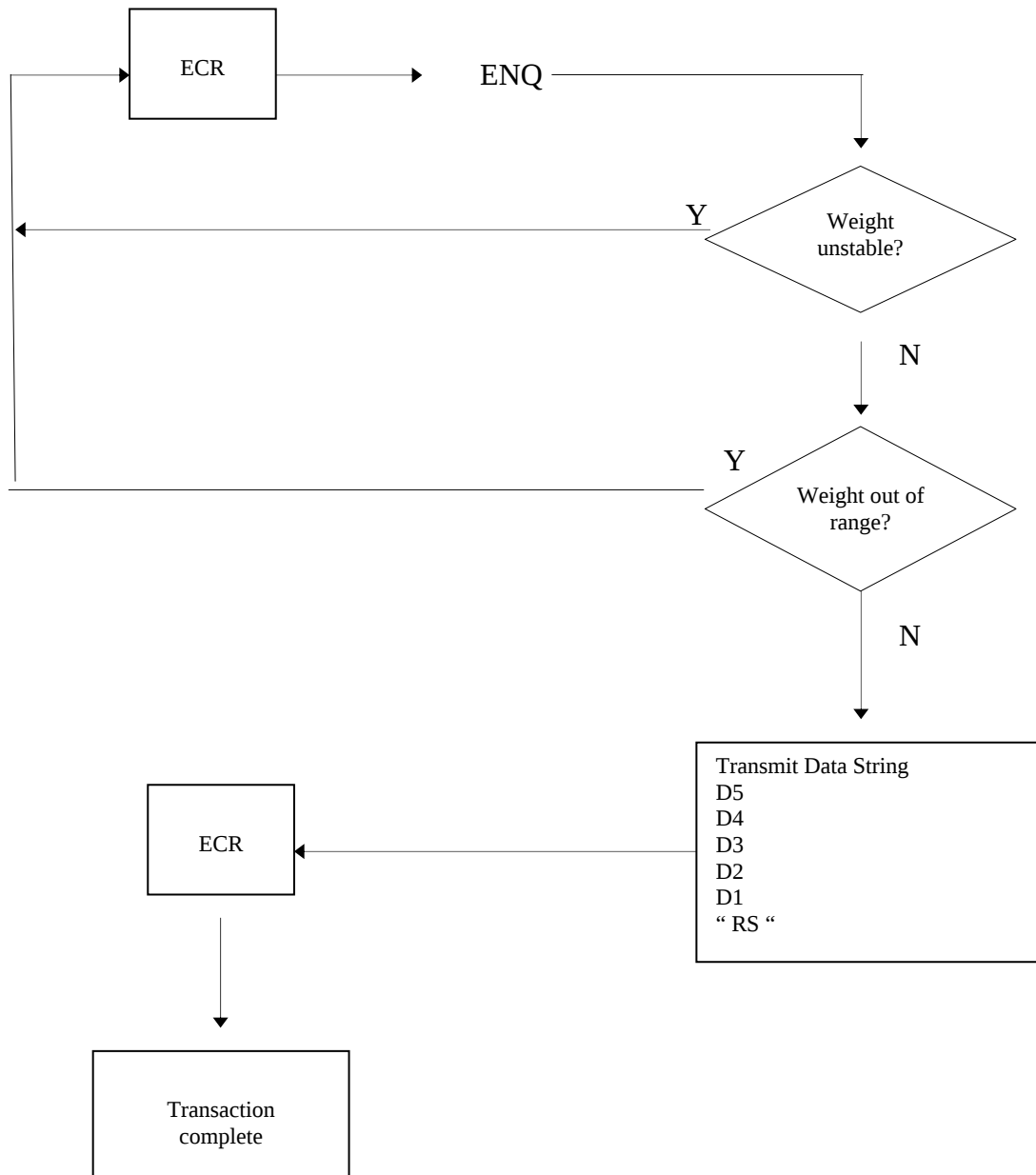
DS 770 send : D5 D4 D3 D2 D1 RS

- **FLOW CHART**

HUGIN ECR (RS)

POS

DS 770



6. HUGIN (CR)

- TRANSMISSION FORMAT

WEIGHT					LAST CHARACTER
D5	D4	D3	D2	D1	CR

- COMMUNICATION PROTOCOL

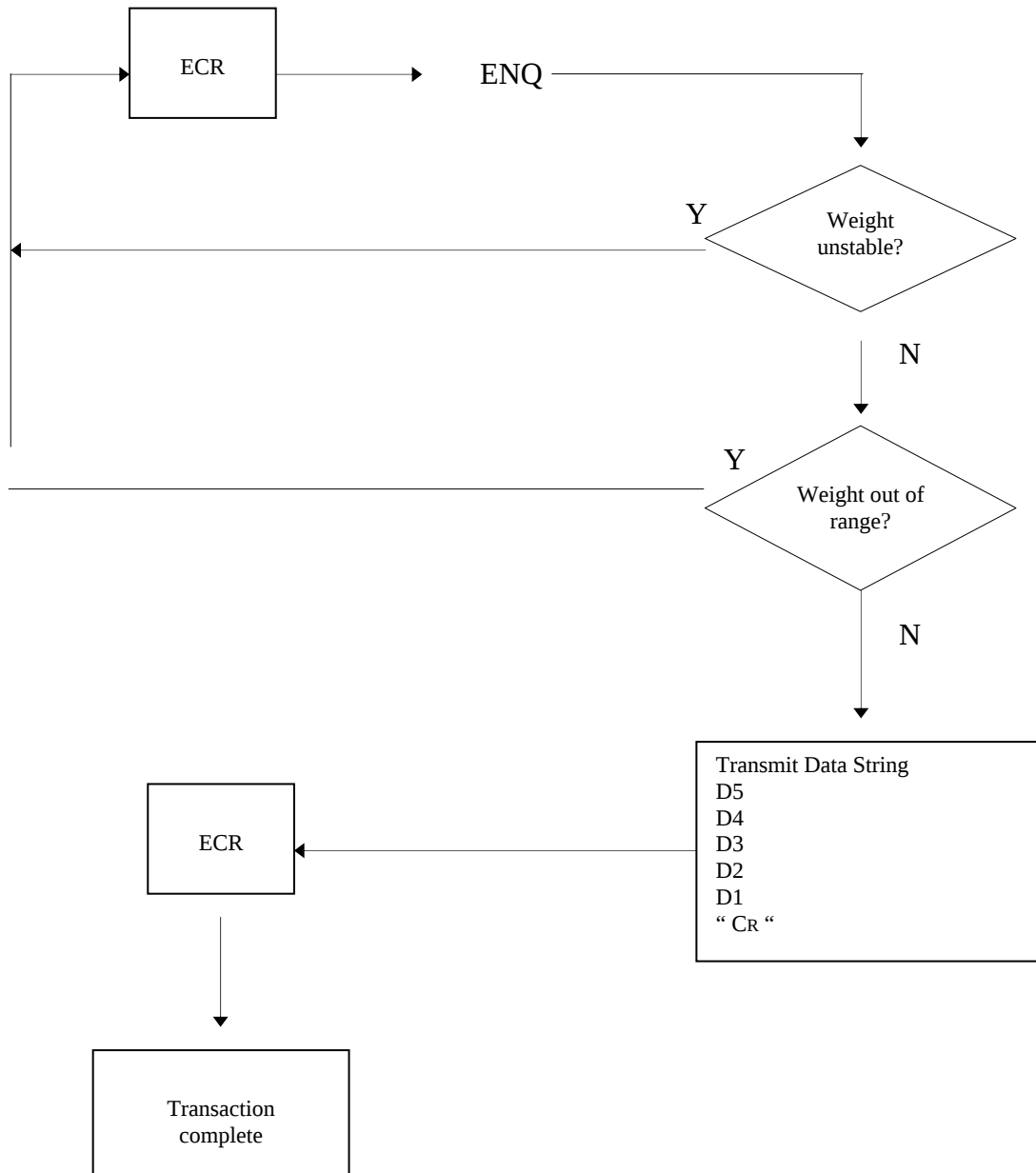
ECR send : ENQ

DS 770 send : D5 D4 D3 D2 D1 CR

- **FLOW CHART**

HUGIN ECR (CR)

POS

DS 770

7. AUSTRALIA POST

- TRANSMISSION FORMAT

WEIGHT					LAST CHARACTER
D5	D4	D3	D2	D1	LF

- COMMUNICATION PROTOCOL

ECR send: --

D 770 send: Continuous data only when weight stable.

If underweight or overweight ,send 0 to POS.

- FLOW CHART

AUSTRALIA POST ECR

POS

DS 770



8. NCI

• TRANSMISSION FORMAT

xx.xxx = Weight
 UU = Units of measure (LB, KG, OZ, G, etc., all uppercase)
 hh = Two status bytes

Weight

Code	Weight	Unit	Code	Code	Status	Code	Code
LF	xx.xxx	UU	CR	LF	Shh	CR	ETX

Weight < 0, Initial 0 error, In motion or out of capacity

Request status

Zero the scale

• STATUS BITS (hh)

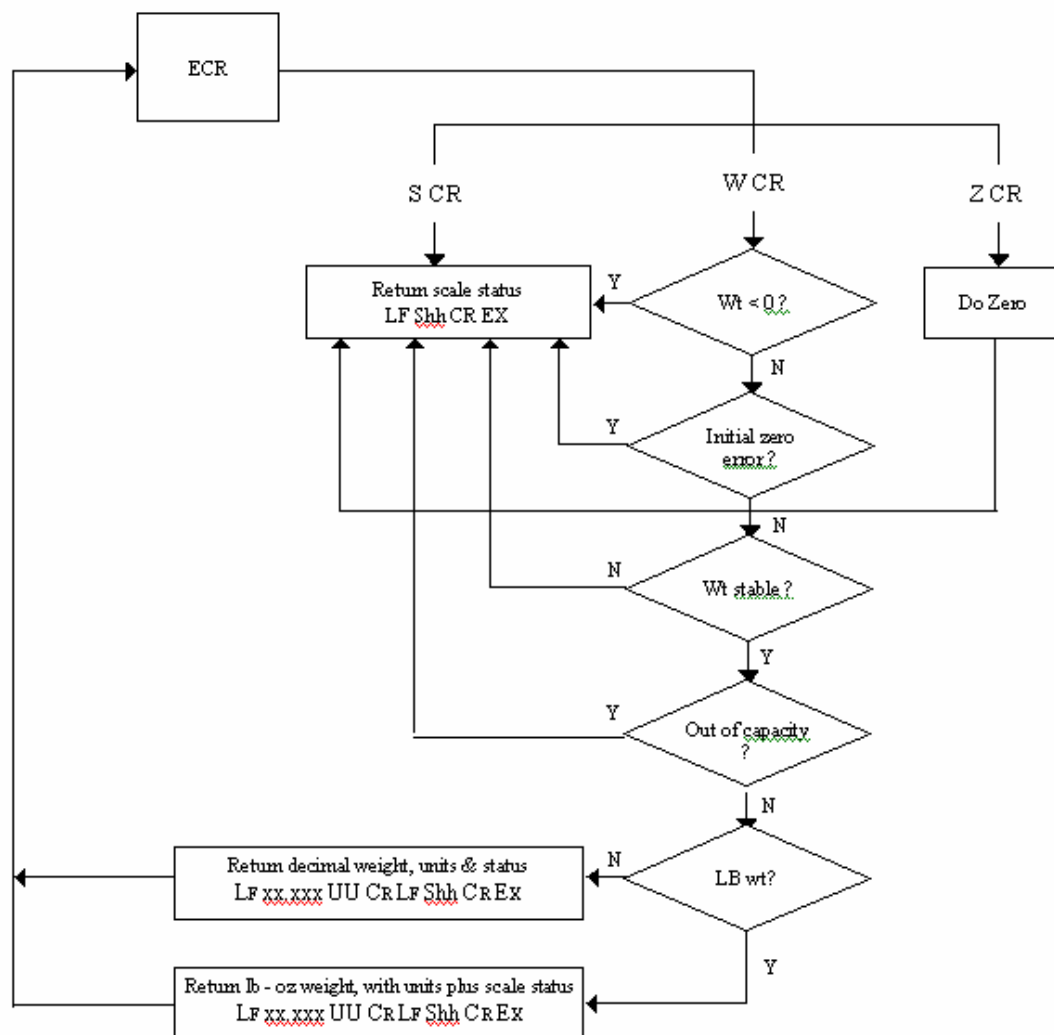
S00 = Stable	S01 = Stable
= Not at zero	= Not at zero
= Not under capacity	= Under capacity
= Not over capacity	= Not over capacity
S10 = Scale in motion	S11 = Scale in motion
= Not at zero	= Not at zero
= Not under capacity	= Under capacity
= Not over capacity	= Not over capacity
S20 = Stable	S02 = Stable
= Scale at zero	= Not at zero
= Not under capacity	= Not under capacity
= Not over capacity	= Over capacity
S30 = Scale in motion	S12 = Scale in motion
= Scale at zero	= Not at zero
= Not under capacity	= Not under capacity
= Not over capacity	= Over capacity

• COMMUNICATION PROTOCOL

ECR send : W CR, S CR or Z CR

Scale send : when weight ≥ 0 send : LF xx.xxx KG CR LF Shh CR EX
 when weight < 0, Initial 0 error, In motion, Out of capacity,
 Request status or Zero the scale : LF Shh CR EX

- **FLOW CHART**

POSDS 770

9. ICL (ACTUAL,OLD OMRON)

- **Transmission Format**

Code	ID Code	Weight					Code	Code
STX	ID	W5	W4	W3	W2	W1	BCC	ETX

Scale Capacity	ID Byte							ID Code (Hex)
	6	5	4	3	2	1	0	
15 kg	1	1	X	1	0	0	1	69
6 kg	1	1	X	1	0	1	1	6B

* If the scale under weight or over weight, a data string with data of zero (0x30) will be transmitted with Bit 4 (X) of the ID Byte set to 1.

BCC is a block check character formed by performing as exclusive OR on all data bytes excluding ETX and STX.

Example:

BCC = <ID> XOR <W5> XOR <W4> XOR <W3> XOR <W2> XOR <W1>

- **Communication Protocol**

ECR send : ENQ

DS 770 send : STX <ID> W5 W4 W3 W2 W1 <BCC> ETX

- **Communication Parameter**

Baud rate	2400
Data Bits	7
Parity	Even
Stop Bit	1 Bit

- **FLOW CHART**

