Help Format:

# of Bytes	Content	Description	Format
1	SOH	Start of Header (0x01)	X
1	Message content	Message ID **0 – WIM** 1 – Remote Console 2 – WIM2 3 – Sort Decision Override	C
1	STX	Start of Text (0x02)	X
1	<	Start of the vehicle record	C
1	L=lane	lane number, 1 digit signed number (1-8)	C
2	Ld=lane direction	Default is 00	NN
2	Mo=month	Calendar Month (01-12)	MM
2	DD=day	Day of Month (01-31)	DD
2	YY=year	Year (00-99)	YY
2	HH=hour	Hour format (00-23)	HH
2	MM=minutes	Minute format (00-59)	MM
2	SS=seconds	Seconds past the minute (00-59)	SS
2	HS=hundredths of sec	Hundredths of a second (00-99)	TT
6	Vehnum=vehicle num	6 digit vehicle sequence number (1-65000)	NNNNNN
2	NA=number of axles	Number of Axles (0-99)	NN
2	CL=class	Vehicle Classification (0 -13)	NN
4	GROS=gross weight ÷100	Gross Vehicle Weight (0 -9999) Hundreds of pounds	NNNN
4	LENG=overall length *10	(bumper to bumper) (0 -9999) Tenths of feet	NNNN
4	SPED=speed *10	MPH *10	NNNN
3	SP1=axle spacing 12*10	Axle spacings (0-140) Tenths of feet	NNN
3	SP2=axle spacing 23*10	Axle spacings (0-140) Tenths of feet	NNN
3	SP3=axle spacing 34*10	Axle spacings (0-140) Tenths of feet	NNN
3	SP4=axle spacing 45*10	Axle spacings (0-140) Tenths of feet	NNN
3	SP5=axle spacing 56*10	Axle spacings (0-140) Tenths of feet	NNN
3	SP6=axle spacing 67*10	Axle spacings (0-140) Tenths of feet	NNN
3	SP7=axle spacing 78*10	Axle spacings (0-140) Tenths of feet	NNN
3	SP8=axle spacing 89*10	Axle spacings (0-140) Tenths of feet	NNN
3	WT1=weight of axle 1*100	Axle weight (0- 999) Hundreds of pounds	NNN
3	WT2=weight of axle 2*100	Axle weight (0- 999) Hundreds of pounds	NNN
3	WT3=weight of axle 3*100	Axle weight (0- 999) Hundreds of pounds	NNN
3	WT4=weight of axle 4*100	Axle weight (0- 999) Hundreds of pounds	NNN
3	WT5=weight of axle	Axle weight (0- 999) Hundreds of pounds	NNN

	5*100		
3	WT6=weight of axle 6*100	Axle weight (0- 999) Hundreds of pounds	NNN
3	WT7=weight of axle 7*100	Axle weight (0- 999) Hundreds of pounds	NNN
3	WT8=weight of axle 8*100	Axle weight (0- 999) Hundreds of pounds	NNN
3	WT9=weight of axle 9*100	Axle weight (0- 999) Hundreds of pounds	NNN
1	>	End of vehicle record	C
1	ETX	End of text (0x03)	X
2	LRC	Calculated by XORing from SOH to ETX inclusively. Transmit the MSB first. (ASCII Hex)	CC
1	EOT	End of Transmission (0x04)	X

Special Notes and Provisions for HELP Format
   a. The serial port will provide 8 data bits, 1 stop bit and no parity.
   b. Each field is comma separated inside the <> which is the vehicle record).
   c. All Data sent will use standard ASCII characters. All numeric fields will be zero (ASCII 0x30) padded. Numeric fields with no data will be zero filled.

IRD Format:

# of Bytes	Content	Description	Format
1	STX	Start of Text	X
3	NNN	Message Length in Bytes (STX to EOT inclusive)	NNN
1	Message Code	Code representing the Message Type: 'V' – Vehicle data	C
1	0x30	Format Code, always 0x30	X
6	Vehicle Number	6 digit vehicle sequence number	NNNNNN
2	Lane Number	Lane number, 2 digit signed number (1-99)	NN
4	Year	Year (0000-9999)	YYYY
2	Month	Calendar Month (01-12)	MM
2	Day	Day of Month (01-31)	DD
2	Hour	hh format (00-23)	HH
2	Minute	mm format (00-59)	MM
2	Seconds	Seconds past the minute (00-59)	SS
2	Hundredths	Hundredths of a second (00-99)	TT
2	Number external data items	The number of external data items attached to the vehicle record	NN
2	Length of String *	The length of the 1st external data item field	NN
X	External data item data*	The character data in the 1st external item data field	CCC…C
	*	Repeat preceding 2 rows for every external data item	
2	Error Code***	The error code variable of the vehicle record	NN
3	Temperature	The road temperature (-50 to +150 Celsius) Default value is -50 when no temp. sensor present	NNN
2	Record Type**	The type of vehicle record (10 = Normal Classification, 11 = Normal Axle Weight)	NN
3	Speed**	The speed of the vehicle in km/h	NNN
4	Vehicle Length**	The length of the vehicle in cm	NNNN
3	Front Axle Space**	The distance between the front axle and the front	NNN

		bumper in cm.	
2	Number of axles**	The number of axles on the vehicle	NN
4	Inter-Axle Space**	The axle space between 1st and second axles in cm	NNNN
	**	Repeat above row for each axle spacing (Number of axles – 1)	
5	Axle weight**	The axle weight of the 1st axle in kg (Not applicable for record type 10)	NNNNN
	**	Repeat above row for every axle weight (Not applicable for record type 10)	
1	ETX	End of text (0x03)	X
4	Checksum	CRC16 Checksum (STX to ETX inclusive using IBM polynomial $x^{16}+x^{15}+x^2+1$)	XXXX
1	EOT	End of Transmission (0x04)	X

* These lines only included if vehicle record has external data fields.
** These lines only included if Error Code is zero.

*** CODE	ERROR
0	ERROR_NONE
1	MIN_SPEED
2	MISSED_AXLE_XFER
3	MISSED_AXLE_PROC
4	LOOP_A_ONLY
5	TOO_FAST
6	UNEQUAL_AXLE_COUNT
7	LOOP_B_ONLY
8	TOO_FAST_1
9	TOO_MANY_AXLES
10	0_AXLES
11	1_AXLE
12	MIN_SPEED_1
13	AXL_ORDER
14	LP_ORDER
15	INVALID_VEHICLE
16	PARKING_LOT_VEHICLE
17	CROSS_OVER_VEHICLE
18	UNMATCHED_TAG_VEHICLE
20	TCC_SnMis_0
21	TCC_SnMis_1
22	TCC_SnMis_2
23	TCC_SnMis_3

Special Notes and Provisions for IRD Format
    a. The serial port will provide 8 data bits, 1 stop bit and no parity.
    b. All data sent will use standard ASCII characters. All numeric fields will be zero (ASCII 0x30) padded. Numeric fields with no available data will be zero filled. Character fields will be right padded with spaces (ASCII 0x20). Character fields with no data will be space filled.
    c. No acknowledgment (ACK) will be expected from the receiver and therefore, the transmitter shall not retransmit on a timeout. A NAK may be sent to the transmitter in the form of an ASCII character (0x15). Upon receipt of this NAK the transmitter must retransmit the message.