

## TX136/500 v1.14 menu – F4GCB 10-2022

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Starting up				
<b>PWR (short)</b>	TX136-500 1.14 OH2NLT OH7SV	2" delay	----- PWR MIN CW20 STBY 136000	<b>Display mode</b>

Shutdown				
<b>PWR (long)</b>	Pwr OFF after 3s	3" push		<b>Bye bye</b> The user settings are saved in EEPROM.

Service mode starting up				
<b>PWR (start long)</b>	TX136-500 1.14 Service Mode	Stop push	Set Ref Osc Freq Osc 20000000 Hz	<b>Service mode</b>

Display mode					Serial protocol : TX136/500
DISPLAY (short)	----- PWR MIN CW20 STBY 136000	If TX	----- P 4.0 W CW20 TX 136000	Output power display	Serial query : ?IPCR
	↓		↓		
	----- SWR N/A CW20 STBY 136000		----- SWR 1.1 CW20 TX 136000	SWR display	Serial query : ?ISCR
	↓		↓		
	----- 13.60 U CW20 STBY 136000		----- 13.45 U CW20 TX 136000	Supply voltage display	Serial query : ?IBCR
	↓		↓		
	----- I --.-A CW20 STBY 136000		----- I 0.4A CW20 TX 136000	Drain current display	Serial query : ?IDCR
DISPLAY (long)	Mode 15 T 23:05 WSPR STBY 136000		S 001:1 T 02:01 WSPR TX 136000	Timer display only for WSPR, FST4W, JT9 and Script modes	Serial query : ?NCR
	↵		↵		
DISPLAY (long)	Mode TX Mode = CW	Configuration mode			

Display mode (continued)				Serial protocol : TX136/500
RF PWR	----- PWR MIN CW20 STBY 136000		Set TX power to min level : <b>4 W</b>	Serial query : <b>?PCR</b> Serial set : <b>=P0CR</b>
	↓			
	----- PWR LOW CW20 STBY 136000		Set TX power to low level : <b>15 W</b>	Serial query : <b>?PCR</b> Serial set : <b>=P1CR</b>
	↓			
	----- PWR HI CW20 STBY 136000		Set TX power to high level : <b>35 W</b>	Serial query : <b>?PCR</b> Serial set : <b>=P2CR</b>
	↓			
	----- PWR MAX CW20 STBY 136000		Set TX power to max level : <b>60 W</b>	Serial query : <b>?PCR</b> Serial set : <b>=P3CR</b>
	↵			
FREQ+ / FREQ -	----- PWR MIN CW20 STBY 136000		Set frequency : step 1 Hz	Serial query : <b>?FCR</b> Serial set : <b>=F136000CR</b>
FREQ+ / FREQ - (hold)	----- PWR MIN CW20 STBY 136100	RF PWR	Set frequency : step 100 Hz	Serial query : <b>?FCR</b> Serial set : <b>=F136100CR</b>
OPER (short)	----- PWR MIN CW20 STBY 136000		<b>Stand By</b> : TX is not allowed.	Serial query : <b>?OCR</b> Serial set : <b>=O0CR</b>
	↓			
	----- PWR MIN CW20 OPER 136000		<b>Operation</b> : TX ready to transmit.	Serial query : <b>?OCR</b> Serial set : <b>=O1CR</b>
	↓			
	----- PWR MIN CW20 TUNE 136000	CW UP / DOWN	<b>Tune</b> : use a key to tune or CW UP to start the tune and CW DOWN to stop it.	Serial query : <b>?OCR</b> Serial set : <b>=O2CR</b>
	↵			
OPER (short)	----- PWR MIN CW20 SWR 136000		Stop the alarm display. SWR (see Configuration mode) , CURR (over current from PA), MSG (beacon text via serial set too long), CALL or LOC (see Beacon configuration mode), RLY (internal error : antenna relay off and PA power on), BAND (out of band with AFP interface).	

Display CW mode				Serial protocol : TX136/500
CW UP / DOWN	----- PWR MIN CW20 STBY 136000		CW speed Set : 1 to 50 wpm	Serial query : ?SCR Serial set : =S200CR [ 10 to 500 by step 10 ]

KEYER	----- P 4.0W CW20 TX 136000	Run the CW with the keyer.
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Display CW Beacon mode				Serial protocol : TX136/500
PWR (short)	Sed 20 PWR MIN CW STBY 136000	CW UP / DOWN	CW speed Set : 1 to 50 wpm	Serial query : ?SCR Serial set : =S200CR [ 10 to 500 step 10 ]
	↓			
	TX x01 PWR MIN CW STBY 136000	CW UP / DOWN	CW frame availabled : x1 : one play, 1/1 : continuously, 1/2 : 1 timeslot out of 2, 1/3 : 1 timeslot out of 3, 1/4 : 1 timeslot out of 4, 1/5 : 1 timeslot out of 5.	Serial query : ?QCR Serial set : =Q1CR [ 0 to 5 ]
	↓			
	Text ITE PWR MIN CW STBY 136000		CW beacon message scrolling display.	Serial query : ?ECR
	↵ or ↓ if TX			
	T P 4.0W CW TX 136000	TX	The transmitted character is displayed.	
	↵			

OPER (long)	Sed 20 PWR MIN CW OPER 136000		Run the CW beacon with a long OPER button push, a high level (MOX) or a low level (RTS) on the PTT IN connector according to the TX control configuration.	Serial query : ?BCR Serial set : =B1CR CAUTION : force beacon on
	↓			
	T P 4.0W CW TX 136000	00:00:20 PWR MIN CW WAIT 136000	The message characters are displayed during the TX. After a message TX the beacon is waiting the next available timeslot.	
	↵ or ↓ if manual stop			
	Sed 20 PWR MIN CW OPER 136000		Stop the beacon with a long OPER button push, a low level (MOX) or a high level (RTS) on the PTT IN connector according to the TX control configuration.	Serial query : ?BCR Serial set : =B0CR
	↵			

Display QRSS mode				Serial protocol : TX136/500
PWR (short)	Dot 030 PWR MIN QRSS STBY 136000	CW UP / DOWN	QRSS dot time Set : 1 to 120 s	Serial query : ?DCR Serial set : =B30CR [ 1 to 120 ]
	↓			
	TX x01 PWR MIN QRSS STBY 136000	CW UP / DOWN	QRSS frame availabled : x1 : one play, 1/1 : continuously, 1/2 : 1 timeslot out of 2, 1/3 : 1 timeslot out of 3, 1/4 : 1 timeslot out of 4, 1/5 : 1 timeslot out of 5.	Serial query : ?QCR Serial set : =Q1CR [ 0 to 5 ]
	↓			
	Text LTE PWR MIN QRSS STBY 136000		QRSS beacon message scrolling display. The scrolling display ends with '+Id' symbol if the CW identity is selected.	Serial query : ?HCR
	↵ or ↓ if TX			
	T P 4.0W QRSS TX 136000	TX	The transmitted character is displayed.	
	↵			
OPER (long)	Dot 030 PWR MIN QRSS OPER 136000		Run the QRSS beacon with a long OPER button push, a high level (MOX) or a low level (RTS) on the PTT IN connector according to the TX control configuration.	Serial query : ?BCR Serial set : =B1CR CAUTION : force beacon on
	↓			
	T P 4.0W QRSS TX 136000		00:00:20 PWR MIN QRSS WAIT 136000	The message characters are displayed during the TX. After a message TX the beacon is waiting the next available timeslot.
	↵ or ↓ if manual stop			
	Dot 030 PWR MIN QRSS OPER 136000		Stop the beacon with a long OPER button push, a low level (MOX) or a high level (RTS) on the PTT IN connector according to the TX control configuration.	Serial query : ?BCR Serial set : =B0CR
	↵			

Display DFCW mode				Serial protocol : TX136/500
PWR (short)	Dot 030 PWR MIN DFCW STBY 136000	CW UP / DOWN	DFCW dot time Set : 1 to 120 s	Serial query : ?DCR Serial set : =D30CR [ 1 to 120 ]
	↓			
	Fsk 0.1 PWR MIN DFCW STBY 136000	CW UP / DOWN	DFCW dash shift Set : 0.1 to 5 Hz	Serial query : ?RCR Serial set : =R10CR [ 1 to 50 ]
	↓			
	TX x01 PWR MIN DFCW STBY 136000	CW UP / DOWN	DFCW frame availabled : x1 : one play, 1/1 : continuously, 1/2 : 1 timeslot out of 2, 1/3 : 1 timeslot out of 3, 1/4 : 1 timeslot out of 4, 1/5 : 1 timeslot out of 5.	Serial query : ?QCR Serial set : =Q1CR [ 0 to 5 ]
	↓			
	Text [TE PWR MIN DFCW STBY 136000		DFCW beacon message scrolling display. The scrolling display ends with '+Id' symbol if the CW identity is selected.	Serial query : ?HCR
	↵ or ↓ if TX			
	T P 4.0W DFCW TX 136000	TX	The transmitted character is displayed.	
	↵			
OPER (long)	Dot 030 PWR MIN DFCW OPER 136000		Run the DFCW beacon with a long OPER button push, a high level (MOX) or a low level (RTS) on the PTT IN connector according to the TX control configuration.	Serial query : ?BCR Serial set : =B1CR CAUTION : force beacon on
	↓			
	T P 4.0W DFCW TX 136000		00:00:20 PWR MIN DFCW WAIT 136000 The message characters are displayed during the TX. After a message TX the beacon is waiting the next available timeslot.	
	↵ or ↓ if manual stop			
	Dot 030 PWR MIN DFCW OPER 136000		Stop the beacon with a long OPER button push, a low level (MOX) or a high level (RTS) on the PTT IN connector according to the TX control configuration.	Serial query : ?BCR Serial set : =B0CR
	↵			

Display JASON mode				Serial protocol : TX136/500
PWR (short)	Normal PWR MIN JSON STBY 136000	CW UP / DOWN	JASON speed available (characters/min) : Slow (0.3), Slow+ (0.6), Normal (2.5), Normal+ (5), Fast (20), Fast+ (40). Unfortunately the TX136 DDS resolution is incompatible with slow speed. No tested with TX500.	Serial query : ?JSCR Serial set : =JS2CR [ 2 to 5 ]
	↓			
	TX ... PWR MIN JSON STBY 136000	CW UP / DOWN	JASON frame available : x1 : one play, 1/1 : continuously, 1/2 : 1 timeslot out of 2, 1/3 : 1 timeslot out of 3, 1/4 : 1 timeslot out of 4, 1/5 : 1 timeslot out of 5.	Serial query : ?JFCR Serial set : =JF0CR [ 0 to 5 ]
	X			
	Text [TE PWR MIN JSON STBY 136000		JASON beacon message scrolling display. The scrolling display ends with '+Id' symbol if the CW identity is selected.	Serial query : ?HCR
	↩ or ↓ if TX			
OPER (long)	T P 4.0W JSON TX 136000	TX	The transmitted character is displayed.	
	↩			
	Normal PWR MIN JSON OPER 136000		Run the JASON beacon with a long OPER button push, a high level (MOX) or a low level (RTS) on the PTT IN connector according to the TX control configuration.	Serial query : ?BCR Serial set : =B1CR CAUTION : force beacon on
	↓			
	T P 4.0W JSON TX 136000		00:00:20 PWR MIN JSON WAIT 136000	The message characters are displayed during the TX. After a message TX the beacon is waiting the next available timeslot.
	↩ or ↓ if manual stop			
	Normal PWR MIN JSON OPER 136000		Stop the beacon with a long OPER button push, a low level (MOX) or a high level (RTS) on the PTT IN connector according to the TX control configuration.	Serial query : ?BCR Serial set : =B0CR
	↩			

Display WSQ2 mode				Serial protocol : TX136/500
PWR (short)	TX x01 PWR MIN WSQ2 STBY 136000	CW UP / DOWN	WSQ2 frame available : x1 : one play, 1/1 : continuously, 1/2 : 1 timeslot out of 2, 1/3 : 1 timeslot out of 3, 1/4 : 1 timeslot out of 4, 1/5 : 1 timeslot out of 5.	Serial query : ?QFCR Serial set : =QF0CR [ 0 to 5 ]
	X			
	Text [TE PWR MIN WSQ2 STBY 136000		WSQ2 beacon message scrolling display. The scrolling display ends with '+Id' symbol if the CW identity is selected. All characters are sent with lower-case to have a faster transmission.	Serial query : ?HCR
	↵ or ↓ if TX			
	T P 4.0W WSQ2 TX 136000	TX	The transmitted character is displayed.	
	↵			
OPER (long)	TX x01 PWR MIN WSQ2 OPER 136000		Run the WSQ2 beacon with a long OPER button push, a high level (MOX) or a low level (RTS) on the PTT IN connector according to the TX control configuration.	Serial query : ?BCR Serial set : =B1CR CAUTION : force beacon on
	↓			
	T P 4.0W WSQ2 TX 136000		00:00:20 PWR MIN WSQ2 WAIT 136000 The message characters are displayed during the TX. After a message TX the beacon is waiting the next available timeslot.	
	↵ or ↓ if manual stop			
	TX x01 PWR MIN WSQ2 OPER 136000		Stop the beacon with a long OPER button push, a low level (MOX) or a high level (RTS) on the PTT IN connector according to the TX control configuration.	Serial query : ?BCR Serial set : =B0CR
	↵			



Display OPERA mode				Serial protocol : TX136/500
PWR (short)	Sed 2 PWR MIN OPRA STBY 136000	CW UP / DOWN	OPERA speed availabled : OPERA 2, 4, 8, 16, 32 and 65	Serial query : ?OSCR Serial set : =OS0CR [ 0 to 5 ]
	↓			
	TX 1/2 PWR MIN OPRA STBY 136000	CW UP / DOWN	OPERA frame availabled : x1 : one play, 1/1 : continuously, 1/2 : 1 timeslot out of 2, 1/3 : 1 timeslot out of 3, 1/4 : 1 timeslot out of 4, 1/5 : 1 timeslot out of 5.	Serial query : ?OFCR Serial set : =OF2CR [ 0 to 5 ]
	↓			
	Text IN0 PWR MIN OPRA STBY 136000		OPERA callsign scrolling display. The scrolling display ends with '+Id' symbol if the CW identity is selected.	Serial query : ?ZCR
	↵ or ↓ if TX			
OPER (long)	S 001:1 P 4.0W OPRA TX 136000	TX	The transmitted symbol is displayed.	
	↵			
OPER (long)	Sed 2 PWR MIN OPRA OPER 136000		Run the OPERA beacon with a long OPER button push, a high level (MOX) or a low level (RTS) on the PTT IN connector according to the TX control configuration.	Serial query : ?BCR Serial set : =B1CR CAUTION : force beacon on
	↓			
	S 001:1 P 4.0W OPRA TX 136000	⇔	00:01:27 PWR MIN OPRA WAIT 136000	The symbol number (1 to 239) and the symbol value (0 to 1) are displayed during the TX. After a timeslot TX the beacon is waiting the next available timeslot.
	↵ or ↓ if manual stop			
OPER (long)	Sed 2 PWR MIN OPRA OPER 136000		Stop the beacon with a long OPER button push, a low level (MOX) or a high level (RTS) on the PTT IN connector according to the TX control configuration.	Serial query : ?BCR Serial set : =B0CR
	↵			

Display WSPR mode				Serial protocol : TX136/500
PWR (short)	Sfd 2 PWR MIN WSPR STBY 136000	CW UP / DOWN	WSPR speed available : WSPR-2 and WSPR-15	Serial query : ?WSCR Serial set : =WS0CR [ 0 or 1 ]
	↓			
	TX 1/4 PWR MIN WSPR STBY 136000	CW UP / DOWN	WSPR frame available : <i>x1 : one play, 1/1 : continuously, 1/2 : 1 timeslot out of 2, 1/3 : 1 timeslot out of 3, 1/4 : 1 timeslot out of 4, 1/5 : 1 timeslot out of 5.</i>	Serial query : ?WFCR Serial set : =WF4CR [ 0 to 5 ]
	↓			
	Text IN0 PWR MIN WSPR STBY 136000		WSPR beacon message scrolling display. The scrolling display ends with '+Id' symbol if the CW identity is selected.	Serial query [call] : ?ZCR Serial query [locator] : ?LCR Serial query [power] : ?WPCR Serial query [loc GPS] : ?WCR
	↵ or ↓ if TX			
OPER (long)	S 001:1 T 02:01 WSPR TX 136000	TX	The transmitted symbol is displayed.	
	↵			
	Sfd 2 T 01:50 WSPR OPER 136000		Run the WSPR beacon with a long OPER button push, a high level (MOX) or a low level (RTS) on the PTT IN connector according to the TX control configuration.	Serial query : ?BCR Serial set : =B1CR CAUTION : force beacon on
	↓			
	00:00:10 T 01:53 WSPR WAIT 136000		The beacon is waiting the next timeslot.	
	↓			
	S 001:1 T 02:01 WSPR TX 136000	↔	00:05:06 T 04:55 WSPR WAIT 136000	The beacon transmits when the timeslot is enabled. The symbol number (1 to 162) and the symbol value (0 to 3) are displayed during the TX. After a timeslot TX the beacon is waiting again the next available timeslot.
	↵ or ↓ if manual stop			
	Sfd 2 T 02:32 WSPR OPER 136000		Stop the beacon with a long OPER button push, a low level (MOX) or a high level (RTS) on the PTT IN connector according to the TX control configuration.	Serial query : ?BCR Serial set : =B0CR
	↵			

Display FST4W mode					Serial protocol : TX136/500
PWR (short)	Spd 120 PWR MIN FS4W STBY 136000	CW UP / DOWN	FST4W speed availabled : FST4W-120, FST4W-300, FST4W-900 and FST4W-1800		Serial query : ?WTCR Serial set : =WT0CR [ 0 or 3 ]
	↓				
	TX 1/4 PWR MIN FS4W STBY 136000	CW UP / DOWN	FST4W frame availabled : x1 : one play, 1/1 : continuously, 1/2 : 1 timeslot out of 2, 1/3 : 1 timeslot out of 3, 1/4 : 1 timeslot out of 4, 1/5 : 1 timeslot out of 5.		Serial query : ?WGCR Serial set : =WG4CR [ 0 to 5 ]
	↓				
	Text [N0 PWR MIN FS4W STBY 136000		FST4W beacon message scrolling display. The scrolling display ends with '+Id' symbol if the CW identity is selected.		Serial query [call] : ?ZCR Serial query [locator] : ?LCR Serial query [power] : ?WPCR Serial query [loc GPS] : ?WCR
	↵ or ↓ if TX				
	S 001:1 T 02:01 FS4W TX 136000	TX	The transmitted symbol is displayed.		
↵					
OPER (long)	Spd 120 T 01:50 FS4W OPER 136000		Run the FST4W beacon with a long OPER button push, a high level (MOX) or a low level (RTS) on the PTT IN connector according to the TX control configuration.		Serial query : ?BCR Serial set : =B1CR CAUTION : force beacon on
	↓				
	00:00:10 T 01:53 FS4W WAIT 136000		The beacon is waiting the next timeslot.		
	↓				
	S 001:1 T 02:01 FS4W TX 136000	↔	00:05:06 T 04:55 FS4W WAIT 136000	The beacon transmits when the timeslot is enabled. The symbol number (1 to 160) and the symbol value (0 to 3) are displayed during the TX. After a timeslot TX the beacon is waiting again the next available timeslot.	
	↵ or ↓ if manual stop				
	Spd 120 T 02:32 FS4W OPER 136000		Stop the beacon with a long OPER button push, a low level (MOX) or a high level (RTS) on the PTT IN connector according to the TX control configuration.		Serial query : ?BCR Serial set : =B0CR
↵					

Display JT9 mode				Serial protocol : TX136/500
PWR (short)	Spd 1 PWR MIN JT9 STBY 136000	CW UP / DOWN	JT9 speed availabled : JT9-1, JT9-2, JT9-5, JT9-10 and JT9-30	Serial query : ?TSCR Serial set : =TS0CR [ 0 or 4 ]
	↓			
	TX 1/2 PWR MIN JT9 STBY 136000	CW UP / DOWN	JT9 frame availabled : x1 : one play, 1/1 : continuously, 1/2 : 1 timeslot out of 2, 1/3 : 1 timeslot out of 3, 1/4 : 1 timeslot out of 4, 1/5 : 1 timeslot out of 5.	Serial query : ?TFCR Serial set : =TF2CR [ 0 to 5 ]
	↓			
	Text IN0 PWR MIN JT9 STBY 136000		JT9 beacon message scrolling display. The scrolling display ends with '+Id' symbol if the CW identity is selected.	Serial query [call] : ?ZCR Serial query [locator] : ?LCR Serial query [loc GPS] : ?WCR
	↩ or ↓ if TX			
	S 01:1 T 02:01 JT9 TX 136000	TX	The transmitted symbol is displayed.	
	↩			
OPER (long)	Spd 1 T 01:50 JT9 OPER 136000		Run the JT9 beacon with a long OPER button push, a high level (MOX) or a low level (RTS) on the PTT IN connector according to the TX control configuration.	Serial query : ?BCR Serial set : =B1CR CAUTION : force beacon on
	↓			
	00:00:10 T 01:53 JT9 WAIT 136000		The beacon is waiting the next timeslot.	
	↓			
	S 01:1 T 02:01 JT9 TX 136000	⇌	00:00:26 T 03:35 JT9 WAIT 136000	The beacon transmits when the timeslot is enabled. The symbol number (1 to 85) and the symbol value (0 to 8) are displayed during the TX. After a timeslot TX the beacon is waiting again the next available timeslot.
	↩ or ↓ if manual stop			
	Spd 1 T 02:32 JT9 OPER 136000		Stop the beacon with a long OPER button push, a low level (MOX) or a high level (RTS) on the PTT IN connector according to the TX control configuration.	Serial query : ?BCR Serial set : =B0CR

Display SCRIPT mode				Serial protocol : TX136/500
PWR (short)	TX x1 PWR MIN SCRI STBY 136000	CW UP / DOWN	Script frame availabled : <i>x1 : one play, Loop : continuously</i>	Serial query : ?VCR Serial set : =V0CR [ 0 to 1 ]
	↓			
	Script [ PWR MIN SCRI STBY 136000		Script scrolling display. This display is available in the mode which is called by the script. During operation the last command executed is followed by the character < .	Serial query : ?UCR
	↵ or ↓ if TX			
	00:00:24 PWR MIN SCRI WAIT 136000	TX	Script delay time display if programmed.	
	↵			
OPER (long)	TX x1 PWR MIN SCRI OPER 136000		Run the script execution with a long OPER button push, a high level (MOX) or a low level (RTS) on the PTT IN connector according to the TX control configuration.	Serial query : ?BCR Serial set : =B1CR CAUTION : force script on
	↓			
	T P 4.0W DFCW TX s136000		The script execution starts and the character 's' is blinked before the frequency.	
	↵ or ↓ if manual stop			
	TX x1 PWR MIN SCRI OPER 136000		Stop the script execution with a long OPER button push, a low level (MOX) or a high level (RTS) on the PTT IN connector according to the TX control configuration.	Serial query : ?BCR Serial set : =B0CR
	↵			

Display REMOTE mode				Serial protocol : TX136/500
	JASON n PWR MIN REM STBY 136000	CW UP / DOWN	<b>External REMOTE</b> availabled : JASON (normal or fast) and WSQ2 softwares, AFP interface. This mode allows an external control of the TX136/500 with a view to perform QSO instead beacon.	Serial query : ?RSCR Serial set : =RS0CR [ 0 to 3 ]
OPER (long)	JASON n PWR MIN REM OPER 136000		Run the TX by the external remote (software with a low level (RTS) on the PTT IN connector, AFP interface with VOX system).	See Remote by softwares with REMOTE mode
	↓			
	JASON n P 4.0W REM TX 136000		The DDS is driven by the external remote which uses the serial com to send the tones. Stop the TX by the external remote (software with a high level (RTS) on the PTT IN connector, AFP interface with VOX system). With AFP remote the tones are displayed during the TX.	See Remote by softwares with REMOTE mode
	↵ or ↓ if manual stop			
	JASON n PWR MIN REM STBY 136000		Force the PTT shutdown with a long OPER button push.	
	↵			

Display alarms			
OPER (short)	Sed 120 PWR MIN FS4W SWR 136000	TX OFF	<b>SWR alarm :</b> If the max SWR acceptable for the selected power is reached, a SWR alarm is started with TX stop.
	return to Stand By ↵		
	Sed 120 PWR MIN FS4W CURR 136000	TX OFF	<b>Current alarm :</b> If over current from PA board is detected , a CURRENT alarm is started with TX stop.
	return to Stand By ↵		
	Sed 2 PWR MIN JT9 MSG 136000		<b>Message alarm :</b> If a CW beacon text, a beacon text or a JUMA message is not valid (character or size), a MESSAGE alarm is started.
	return to Stand By ↵		
	Sed 120 PWR MIN FS4W CALL 136000		<b>Call alarm :</b> If a no valid call is keyed in despite the nok display, a CALL alarm is started and the default value is imposed.
	return to Stand By ↵		
	Sed 120 PWR MIN FS4W LOC 136000		<b>Locator alarm :</b> If a no valid locator is keyed in despite the nok display, a CALL alarm is started and the default value is imposed.
	return to Stand By ↵		
	Sed 120 PWR MIN FS4W RLY 136000	TX OFF	<b>Relay alarm :</b> If the antenna relay is not actived when PA power on, a RELAY alarm is started with TX stop.
	return to Stand By ↵		
	AFP PWR MIN REM BAND 136000	TX OFF	<b>Out of band alarm :</b> In REMOTE mode if the frequency set with the tone sent by the AFP interface exceed the band limit, a BAND alarm is started with TX stop.
	return to Stand By ↵		

Configuration mode				Serial protocol : TX136/500
DISPLAY (short)	TX Mode Mode = CW	UP / DOWN	TX Mode available : CW, QRSS, DFCW, JASON, WSQ2, OPERA, WSPR, FST4W, JT9, REMOTE, SCRIPT. After modification the standby state mode is forced.	Serial query : ?GCR Serial set : =G0CR [ 0 to 10 ]
	↓			
	TX Band Band = 2200 m	UP / DOWN	TX Band available : 630 m , 2200 m. <i>This menu is displayed if the optional bi-band board is installed.</i>	Serial query : ?XCR Serial set : =X0CR [ 0 or 1 ]
	↓			
	Synchro Timer T 59:00	UP / DOWN	<b>Synchronization Timer</b> Set minute timer with the help of beep Start at 59:00	Serial query : ?NCR Serial set : =N3540CR [ 0 to 3559 ]
	OR			
	Synchro Timer T^14:23:17		<b>Synchronization Timer</b> Set timer automatically with the GPS if connected and available	
	↓			
	Pre Amplifier Select = OFF	UP / DOWN	<b>Pre Amplifier</b> Set : OFF, 10 dB, 20 dB	Serial query : ?ACR Serial set : =A0CR [ 0 to 2 ]
	↓			
	10MHz Converter Select = OFF	UP / DOWN	<b>RX Converter</b> : ON / OFF 10 MHz (TX136), 3.5 MHz (TX500)	Serial query : ?CCR Serial set : =C0CR [ 0 or 1 ]
	↓			
	CW Keyer Type Keyer = Iambic B	UP / DOWN	<b>CW Keyer Type</b> available : Dot priority, Iambic A, Iambic B, Straight, Beacon	Serial query : ?KCR Serial set : =K2CR [ 0 to 4 ]
	↓			
	CW Sidetone Tone = 700Hz	UP / DOWN	<b>CW Sidetone</b> Set : OFF, 250 to 2000 Hz, step 50 Hz	
	↓			



Configuration mode (continued)						Serial protocol : TX136/500
DISPLAY (short)	SWR Prot PWR MIN Limit = 30.0	RF PWR	SWR Prot PWR MIN Limit = 30.0	UP / DOWN	Max SWR acceptable for PWR MIN Set : 1 to 101, step 0.1	
	↓					
	SWR Prot PWR LOW Limit = 15.0		UP / DOWN	Max SWR acceptable for PWR LOW Set : 1 to 101, step 0.1		
	↓					
	SWR Prot PWR HI Limit = 6.0		UP / DOWN	Max SWR acceptable for PWR HI Set : 1 to 101, step 0.1		
	↓					
	SWR Prot PWR MAX Limit = 3.0	UP / DOWN	Max SWR acceptable for PWR MAX Set : 1 to 101, step 0.1			
	↵					
	Displ Brightness LCD BL = 100	UP / DOWN	Display Brightness Set : 0 to 1100, step 50			
	↓					
	Displ Contrast Contrast = 2000	UP / DOWN	Display Contrast Set : 0 to 3500, step 50			
	↓					
	Serial Protocol RS232 = Terminal	UP / DOWN	Serial Protocol availabled : TX136/500, Terminal, GPS NMEA			
	↓					
Serial Speed Baud Rate=9600	UP / DOWN	Serial Speed Set : 2400 to 115200 bauds				
↓						
TX Control Select = Auto	UP / DOWN	TX Control Auto (program), MOX (high level on PTT IN connector) or RTS (low level on PTT IN connector). Caution in RTS control : without signal on PTT IN the TX beacon is on !			Serial query : ?TCR Serial set : =T0CR [ 0 or 2 ]	
↓						

Configuration mode (continued)				Serial protocol : TX136/500
DISPLAY (short)	SPARE I/O signal Select = OFF	UP / DOWN	SPARE I/O signal : ON / OFF <i>This menu is not displayed if the optional bi-band board is installed.</i>	Serial query : ?XCR Serial set : =X0CR [ 0 or 1 ]
	↵			
DISPLAY (long)	----- PWR MIN CW20 STBY 136000	Display mode		CW Beacon text and/or Script are saved in EEPROM if modified.
PWR (short)	CW beacon TEST DE JUMA BEA	Beacon configuration mode		

Beacon configuration mode					Serial protocol : TX136/500
DISPLAY (short)	CW Beacon text TEST DE JUMA BEA	UP / DOWN	CW beacon text Move the cursor	The CW beacon text can have until 255 characters. Valid ASCII characters : 20h (space) to 5Fh (Z). The tags #C (callsign) and #L (locator) are available. More informations with CW Beacon programming page.	Serial query : ?ECR Serial set : =ETEST DE JUMA BEACONCR
	↓	FREQ+ / FREQ-	Modify the charater selected		
		OPER	Delete character at current cursor		
		RF PWR	Add character after cursor		
	Beacon text TEST	UP / DOWN	Beacon text Move the cursor	The beacon text can have until 16 characters and is used with the QRSS, DFCW, JASON and WSQ modes. The tags #C (callsign) and #L (locator) are available. Valid ASCII characters : 20h (space) to 5Fh (Z).	Serial query : ?HCR Serial set : =HTESTCR
	↓	FREQ+ / FREQ-	Modify the charater selected		
		OPER	Delete character at current cursor		
		RF PWR	Add character after cursor		
	Callsien N0CAL ok	UP / DOWN	Callsign text Move the cursor	The callsign can be a standard or a compound callsign with 10 characters max. add-on prefix or suffix are allowed. Valid characters : A-Z / 0-9 If the call is not valid, nok is displayed then during the eeprom save, a CALL alarm is started and the default value is imposed. The callsign can be used via the tag #C in the CW beacon, beacon and message texts.	Serial query : ?ZCR Serial set : =ZN0CALCR
	↓	FREQ+ / FREQ-	Modify the charater selected		
		OPER	Delete character at current cursor		
		RF PWR	Add character after cursor		
	Locator JJ00AA ok	UP / DOWN	Locator text Move the cursor	The locator must be 6-character maidenhead grid. Valid characters : A-Z 0-9 If the locator is not valid nok is displayed then during the eeprom save, a LOC alarm is started and the default value is imposed. The locator can be used via the tag #L in the CW beacon, beacon and message texts.	Serial query : ?LCR Serial set : =LJJ00CR
	↓	FREQ+ / FREQ-	Modify the charater selected		
		OPER	Delete character at current cursor		
		RF PWR	Add character after cursor		
	GPS Locator Select = OFF	UP / DOWN	GPS locator Set : OFF, ON	The set locator can be replaced by the GPS locator if this last is valid.	Serial query : ?VCR Serial set : =V0CR [ 0 or 1 ]
	↓				

Configuration mode					Serial protocol : TX136/500
DISPLAY (short)	WSPR/FST4W Power 30 dBm PWR MAX	UP / DOWN	WSPR / FST4W power Set : 0 to 60 dBm for PWR MAX Step according to WSPR protocol	The WSPR /FST4W level will be automatically modified according the TX136/500 power and the WSPR protocol.	Serial query : ?WPCR Serial set : =WP30CR [ 0 to 60 ]
	↓				
	CW Identity Select = OFF	UP / DOWN	CW Identity Set : OFF, 12 or 24 WPM	The CW identity is added at the end of the frame. Because the CW identity can use several times more bandwidth than the selected mode, it must be used with caution.	Serial query : ?YCR Serial set : =Y0CR [ 0 to 2 ]
	↓				
	Script =G1=D3=B1=SD10	UP / DOWN	Script Move the cursor	The script can have until 127 characters and is a sequence of serial set codes and script commands to have a TX136/500 automation. In the script a tx beacon is run regardless of the tx beacon frame configuration. The script will have priority on a serial command if they are performed simultaneously, excepted the =B0 command.	Serial query : ?UCR Serial set : =UscriptCR
	←	FREQ+ / FREQ-	Modify the charater selected		
		OPER	Delete character at current cursor		
		RF PWR	Add character after cursor		
PWR (short)	TX Mode Mode = CW	Configuration mode			
DISPLAY (long)	----- PWR MIN CW20 STBY 136000	Display mode		CW Beacon, Beacon and Script text are saved in EEPROM if modified.	

Service Mode			
DISPLAY (short)	Set Ref Osc Freq Osc 20000000 Hz	UP / DOWN	Set Reference Oscillator Frequency Default : 20 MHz (TX136), 6 MHz (TX500) Set : $\pm 1000$ Hz step 10 Hz
	↓		
	SUPPLY 13.60 V Cal mult = 135	UP / DOWN	Supply Voltage Calibration Factor Default : 135 Set : 100 to 200
	↓		
	Beep len, 0=OFF Beep = 50 ms	UP / DOWN	Beep Time Default : 50 ms Set : 0 to 100 ms
	↓		
	Forward Power Cal mult = 20	UP / DOWN	Forward Power Calibration Factor Default : 20 Set : 0 to 100
	↓		
	Drain Current Cal mult = 4000	UP / DOWN	Drain Current Calibration Factor Default : 4000 Set : 3000 to 5000
	↓		
	CW break period 07 Units	UP / DOWN	CW break period Default : 7 Set : 5 to 10
	↓		
	WSPR timer Cal 10 Units	UP / DOWN	WSPR Timer Calibration Factor : if the timer puts back increase the value, else decrease the value. Default : 10 Set : 0 to 20
	↓		
	Auto Power On Jumper Q4 = OFF	UP / DOWN	Jumper Q4 state (Auto power on if power failure) : OFF or ON If ON then the user settings are saved in EEPROM at each beacon running.
	↓		
	Push OPER long = Factory defaults	OPER (long)	Factory setup ok
	↩		Display mode
OPER (short)	Calibr. Saved		Display mode

## Serial command and query protocol

**General :**

JUMA TX136/TX500 serial protocol is JUMA TX136/TX500 native way to communicate with another system.

The JUMA TX136/TX500 serial command and the query protocol is activated from the TX136/TX500 config page. Set **RS232 = TX136/500**.

**Note 1:** RS232 serial port baud rate should be set to match with two communicating units. High values of Baud rates are recommended 38400bd and up. High transmission speed keeps transaction times short.

**Description of the JUMA TX136/TX500 protocol :**

Start and end delimiters. Messages always start with a question mark (?) or equal sign (=). Message always terminated with CR (carriage return character).

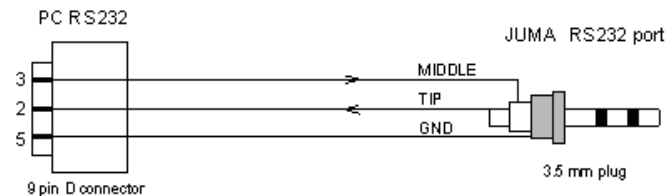
? mean query and = means set message. LF is added to the response messages. This makes it lot easier to test the commands with a terminal program.

Start	Message	Stop
?	Query Message	CR
=	Set message	CR

**No action characters :**

For input format flexibility, certain characters are defined as no action characters.

0x0A	Line feed
0x00	NUL



Caution : during TX the serial commands are disabled except the command '=B0' (TX OFF) .  
and in REMOTE mode all serials commands are disabled in OPER and TX state modes.

Serial protocol : TX136/500	Parameter
Serial query : ?ACR Serial set : =AxCR [ 0 to 2 ]	<b>Pre Amplifier :</b> 0 = OFF, 1 = 10 dB, 2 = 20 dB.
Serial query : ?BCR Serial set : =BxCR [ 0 to 1 or T ]	<b>TX ON :</b> 0 = stop the TX, 1 = run the beacon (caution : force beacon on), 1 to 99 = run the TX n times via the script, T = run the message transmission, used by JUMA software.
Serial query : ?CCR Serial set : =CxCR [ 0 or 1 ]	<b>RX Converter :</b> 0 = OFF, 1 = ON 10 MHz (TX136), 3.5 MHz (TX500).
Serial query : ?DCR Serial set : =DxxxCR [ 1 to 120 ]	<b>QRSS &amp; DFCW dot time :</b> Set : 1 to 120 s.
Serial query : ?ECR Serial set : =EtextCR	<b>CW beacon text</b> until 255 characters. Set and save in EEPROM. Valid ASCII characters : 20h (space) to 5Fh (Z). More informations with CW Beacon programming page.
Serial query : ?FCR Serial set : =FxxxxxxCR	<b>Frequency :</b> Set TX136 : 135700 to 137800, set TX500 : 472000 to 479000, step 1 Hz. If the bi-band board is installed, the frequency drive the band change.
Serial query : ?GCR Serial set : =GxCR [ 0 to 10 ]	<b>TX Mode :</b> 0 = CW, 1 = QRSS, 2 = DFCW, 3 = JASON, 4 = WSQ2, 5 = OPERA, 6 = WSPR, 7 = FST4W, 8 = JT9, 9 = REMOTE, 10 = SCRIPT.
Serial query : ?HCR Serial set : =HtextCR	<b>Beacon text</b> until 16 characters. Set and save in EEPROM. Valid ASCII characters : 20h (space) to 5Fh (Z).
Serial query : ?ICR or ?IICR	<b>System info :</b> Return <b>Firmware Version</b> .
Serial query : ?IBCR	<b>System info :</b> Return <b>Battery Voltage</b> , resolution 10 mV.
Serial query : ?IDCR	<b>System info :</b> Return <b>Current Drain</b> , resolution 0.1 A.
Serial query : ?IPCR	<b>System info :</b> Return <b>TX Power reading</b> , resolution 0.1 W.
Serial query : ?ISCR	<b>System info :</b> Return <b>SWR Meter reading</b> .
Serial query : ?JFCR Serial set : =JFxCR [ 0 to 5 ]	<b>JASON frame :</b> 0 = one play, 1 = continuously, 2 = 1 timeslot out of 2, 3 = 1 timeslot out of 3, 4 = 1 timeslot out of 4, 5 = 1 timeslot out of 5.
Serial query : ?JSCR Serial set : =JSxCR [ 2 to 5 ]	<b>JASON speed :</b> 2 = Normal, 3 = Normal turbo, 4 = Fast, 5 = Fast turbo.
Serial query : ?KCR Serial set : =KxCR [ 0 to 4 ]	<b>CW Keyer Type :</b> 0 = Dot priority, 1 = Iambic A, 2 = Iambic B, 3 = Straight, 4 = Beacon.
Serial query : ?LCR Serial set : =LlocatorCR	<b>Locator :</b> Set 6-character maidenhead grid.
Serial set : =MtextCR	<b>Message text</b> until 160 characters. No save in EEPROM. Used by JUMA software. Valid ASCII characters : 20h (space) to 5Fh (Z).
Serial query : ?NCR Serial set : =NxxxxCR [ 1 to 3559 ]	<b>Synchronization Timer :</b> Set : 1 to 3559 s

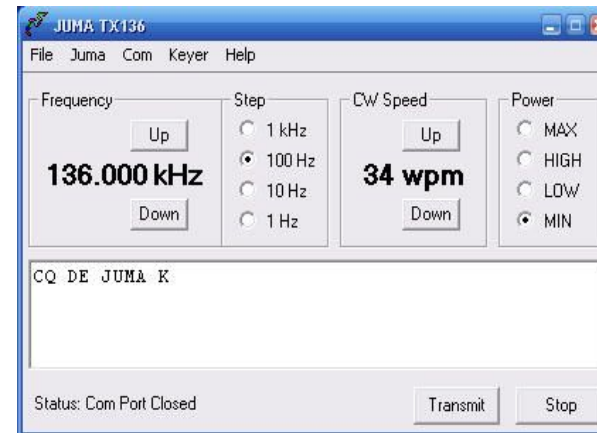
Serial protocol : TX136/500	Parameter
Serial query : ?OCR Serial set : =OxCR [ 0 to 2 ]	<b>Operating mode :</b> 0 = Stand By, 1 = Operation, 2 = Tune.
Serial query : ?OFCR Serial set : =OF2CR [ 0 to 5 ]	<b>OPERA frame :</b> 0 = one play, 1 = continuously, 2 = 1 timeslot out of 2, 3 = 1 timeslot out of 3, 4 = 1 timeslot out of 4, 5 = 1 timeslot out of 5.
Serial query : ?OSCR Serial set : =OSxCR [ 0 to 5 ]	<b>OPERA speed :</b> 0 = OPERA 2, 1 = OPERA 4, 2 = OPERA 8, 3 = OPERA 16, 4 = OPERA 32, 5 = OPERA 65.
Serial query : ?PCR Serial set : =PxCR [ 0 to 3 ]	<b>TX power :</b> 0 = 4 W, 1 = 15 W, 2 = 35 W, 3 = 60 W.
Serial query : ?QCR Serial set : =QxCR [ 0 to 5 ]	<b>CW, QRSS &amp; DFCW frame :</b> 0 = one play, 1 = continuously, 2 = 1 timeslot out of 2, 3 = 1 timeslot out of 3, 4 = 1 timeslot out of 4, 5 = 1 timeslot out of 5.
Serial query : ?QFCR Serial set : =QFxCR [ 0 to 5 ]	<b>WSQ frame :</b> 0 = one play, 1 = continuously, 2 = 1 timeslot out of 2, 3 = 1 timeslot out of 3, 4 = 1 timeslot out of 4, 5 = 1 timeslot out of 5.
Serial query : ?RCR Serial set : =RxxCR [ 1 to 50 ]	<b>DFCW dash shift :</b> Set : 1 = 0.1 to 50 = 5.0 Hz
Serial query : ?RSCR Serial set : =RSxCR [ 0 or 3 ]	<b>External REMOTE :</b> 0 = JASON (normal), 1 = JASON (fast), 2 = WSQ2, 3 = AFP.
Serial query : ?SCR Serial set : =S200CR [ 10 to 500 step 10 ]	<b>CW speed :</b> Set : 10 = 1 wpm to 500 = 50 wpm step 10 to keep capability with JUMA software.
Serial query : ?SFCR Serial set : =SFxCR [ 0 to 1 ]	<b>SCRIPT frame :</b> 0 : one play, 1 : continuously.
Serial query : ?TCR Serial set : =TxCR [ 0 or 2 ]	<b>TX Control :</b> 0 = Auto (program), 1 = MOX (high level on PTT IN connector), 2 = RTS (low level on PTT IN connector)
Serial query : ?TFCR Serial set : =TFxCR [ 0 or 5 ]	<b>JT9 frame :</b> 0 = one play, 1 = continuously, 2 = 1 timeslot out of 2, 3 = 1 timeslot out of 3, 4 = 1 timeslot out of 4, 5 = 1 timeslot out of 5.
Serial query : ?TSCR Serial set : =TSxCR [ 0 or 4 ]	<b>JT9 speed :</b> 0 = JT9-1, 1 = JT9-2, 2 = JT9-5, 3 = JT9-10, 4 = JT9-30.
Serial query : ?UCR Serial set : =UtextCR	<b>SCRIPT text</b> until 127 characters. Set and save in EEPROM. Valid ASCII characters : 20h (space) to 5Fh (Z).
Serial query : ?VCR Serial set : =V0CR [ 0 or 1 ]	<b>GPS locator selection :</b> 0 = OFF, 1 = ON.
Serial query : ?WCR	<b>GPS locator value :</b> Return 'NO GPS' or Grid 6.
Serial query : ?WFCR Serial set : =WFxCR [ 0 or 5 ]	<b>WSPR frame :</b> 0 = one play, 1 = continuously, 2 = 1 timeslot out of 2, 3 = 1 timeslot out of 3, 4 = 1 timeslot out of 4, 5 = 1 timeslot out of 5.
Serial query : ?WGCR Serial set : =WGxCR [ 0 or 5 ]	<b>FST4W frame :</b> 0 = one play, 1 = continuously, 2 = 1 timeslot out of 2, 3 = 1 timeslot out of 3, 4 = 1 timeslot out of 4, 5 = 1 timeslot out of 5.
Serial query : ?WPCR Serial set : =WPxxCR [ 0 to 60 ]	<b>WSPR / FST4W power :</b> Set : 0 to 60 dBm for PWR MAX. Value set with a step according to WSPR protocol.
Serial query : ?WSCR Serial set : =WSxCR [ 0 or 1 ]	<b>WSPR speed :</b> 0 = WSPR-2, 1 = WSPR-15.



Serial protocol : TX136/500	Parameter
Serial query : <b>?WTCR</b> Serial set : <b>=WTxCR [ 0 to 3 ]</b>	<b>FST4W speed :</b> <b>0</b> = FST4W-120, <b>1</b> = FST4W-300, <b>2</b> = FST4W-900, <b>3</b> = FST4W-1800.
Serial query : <b>?XCR</b> Serial set : <b>=X0CR [ 0 or 1 ]</b>	<b>SPARE I/O :</b> If the TX136-500 bi-band board is installed : <b>0</b> = 136 <b>1</b> = 500 else <b>0</b> = OFF, <b>1</b> = ON
Serial query : <b>?YCR</b> Serial set : <b>=Y0CR [ 0 to 2 ]</b>	<b>CW Identity :</b> <b>0</b> = OFF, <b>1</b> = 12 wpm, <b>2</b> = 24 wpm.
Serial query : <b>?ZCR</b> Serial set : <b>=ZcallCR</b>	<b>Callsign :</b> Set a standard or a compound callsign with 10 characters max.

## JUMA TX136-500 software

Button	Serial protocol : TX136
Frequency Up step 1 KHz	=F137000CR
Frequency Down step 1 KHz	=F135000CR
Frequency Up step 100 Hz	=F136100CR
Frequency Down step 100 Hz	=F135900CR
Frequency Up step 10 Hz	=F136010CR
Frequency Down step 10 Hz	=F135990CR
Frequency Up step 1 Hz	=F136001CR
Frequency Down step 1 Hz	=F135999CR
CW speed Up	=S350CR
CW speed Down	=S330CR
Power Max	=P3CR
Power High	=P2CR
Power Low	=P1CR
Power Min	=P0CR
Transmit	=MCQ DE JUMA KCR=BTCCR
Stop	=B0CR



The JUMA TX136-500 software can use to perform QSO with the CW, QRSS, DFCW, JASON, WSQ and JT9 modes.

The message text sent to the JUMA TRX isn't saved in EEPROM and doesn't replace the beacon text.

The tags #C (callsign) and #L (locator) are available. With the JT9 mode the message is automatically truncated to 13 characters.

CW	T P 4.0W TX m136000	During the TX the character 'm' is blinked before the frequency.
----	------------------------	--

## CW Beacon programming

1. Select the CW mode.	TX Mode Mode = CW	See	Configuration mode
↓			
2. Enter your message.	CW beacon text TEST DE JUMA BEA	See	Beacon configuration mode
↓			
3. Select the speed.	Spd 20 PWR MIN CW STBY 136000	See	Display mode
↓			
4. Select the TX frame.	TX x1 PWR MIN CW STBY 136000	See	Display mode

Valid characters			Valid control characters ( starting with back slash )
<b>US ASCII</b> a-z and A-Z	? ..... Question mark	: ..... Colon	\pn Power level, n = 0...3.
<b>Numbers</b> 0-9	@ ..... At sign	; ..... Semicolon	\fnnnnnn Frequency, nnnnnn in Hz.
<b>&lt;space&gt;</b> Space	" ..... Quotation mark	! ..... Start	\gn Mode, n = 0 to 2
, ..... Comma	' ..... Apostrophe	( ..... Parenthesis open "KN"	\snn CW speed, nn = 01...50
- ..... Hyphen/minus	\$ ..... Dollar sign	& ..... Wait "AS"	\dnnn QRSS and DFCW dot time, nnn = 001 to 120
. ..... Dot	) ..... Parenthesis closed	# ..... End of message "AR"	\rnn DFCW dash shift, nn = 01 to 50
/ ..... Slash	+ ..... Plus	* ..... End of contact "SK"	\c Play a carrier during a QRSS dot time
= ..... double dash			

The message can include also control characters which are controlling TX136/500 parameters during transmission. These parameters are CW mode (CW, QRSS, DFCW), CW speed (WPM), CW dot time (s), DFCW dash shift (DDS steps number), Output power (MIN, LOW, HI, MAX), the Transmitter frequency (Hz) and play carrier in CW message.

Because of that it is possible to use CW beacon mode to send long QRSS or DFCW message which starting with the control charater \g1 or \g2 or to create a ' NDB ' with a 20 s carrier followed by the call (example : «\G1\D020\C\G0 CALL »). The tags #C (callsign) and #L (locator) are available.

## QRSS Beacon programming

1. Select the QRSS mode.	TX Mode Mode = QRSS	See	Configuration mode
↓			
2. Enter your message.	Beacon text TEST	See	Beacon configuration mode
↓			
3. Add or not a CW identity.	CW Identity Select = OFF	See	Beacon configuration mode
↓			
4. Select the speed.	Dot 030 PWR MIN QRSS STBY 136000	See	Display mode
↓			
5. Select the TX frame.	TX x1 PWR MIN QRSS STBY 136000	See	Display mode

## DFCW Beacon programming

1. Select the DFCW mode.	TX Mode Mode = DFCW	See	Configuration mode
↓			
2. Enter your message.	Beacon text TEST	See	Beacon configuration mode
↓			
3. Add or not a CW identity.	CW Identity Select = OFF	See	Beacon configuration mode
↓			
4. Select the speed.	Dot 030 PWR MIN DFCW STBY 136000	See	Display mode
↓			
5. Select the dash shift.	Fsk 0.1 PWR MIN DFCW STBY 136000	See	Display mode
↓			
6. Select the TX frame.	TX x1 PWR MIN DFCW STBY 136000	See	Display mode

## JASON Beacon programming

1. Select the JASON mode.	TX Mode Mode = JASON	See	Configuration mode
↓			
2. Enter your message.	Beacon text TEST	See	Beacon configuration mode
↓			
3. Add or not a CW identity.	CW Identity Select = 12 WPM	See	Beacon configuration mode
↓			
4. Select the JASON speed.	Normal PWR MIN JSON STBY 136000	See	Display mode
↓			
5. Select the TX frame.	TX 1/1 PWR MIN JSON STBY 136000	See	Display mode

## WSQ2 Beacon programming

1. Select the WSQ2 mode.	TX Mode Mode = WSQ2	See	Configuration mode
↓			
2. Enter your message.	Beacon text TEST	See	Beacon configuration mode
↓			
3. Add or not a CW identity.	CW Identity Select = 12 WPM	See	Beacon configuration mode
↓			
5. Select the TX frame.	TX 1/1 PWR MIN WSQ2 STBY 136000	See	Display mode

## OPERA Beacon programming

1. Select the OPERA mode.	TX Mode Mode = OPERA	See	Configuration mode	
↓				
2. Enter your standard callsign.	Callsign NØCAL ok	See	Beacon configuration mode	A compound callsign is automatically converted to a standard callsign according to the OPERA protocol.
↓				
3. Add or not a CW identity.	CW Identity Select = 12 WPM	See	Beacon configuration mode	
↓				
4. Select the OPERA speed.	Spd 2 PWR MIN OPRA STBY 136000	See	Display mode	
↓				
5. Select the TX frame.	TX x1 PWR MIN OPRA STBY 136000	See	Display mode	



## WSPR Beacon programming

1. Select the WSPR mode.		TX Mode Mode = WSPR	See	Configuration mode	
↓					
2. Enter your callsign.		Callsign M0CAL ok	See	Beacon configuration mode	A compound callsign is automatically converted to a standard callsign according to the WSPR protocol.
↓					
3. Enter your 6-character main grid locator.		Locator JJ00AA ok	See	Beacon configuration mode	The locator is automatically converted to 4-character maidenhead grid according to the WSPR protocol.
↓					
4. Select GPS locator option.		GPS locator Select = OFF	See	Beacon configuration mode	
↓					
5. Enter the dB level for the TX136/500 power max.		WSPR Power 30 dBm PWR MAX	See	Beacon configuration mode	
↓					
6. Add or not a CW identity.		CW Identity Select = 24 WPM	See	Beacon configuration mode	
↓					
GPS used on JUMA RS232 port	7. select RS232 = GPS NMEA.	Serial Protocol RS232 = GPS NMEA	See	Configuration mode	The optional GPS receiver must provide a \$GPGGA NMEA sentence.
	7 bis. select Baud rate = 4800.	Serial Speed Baud Rate=4800	See	Configuration mode	Some GPS receivers can use a different baud rate from the NMEA standard.
	7 ter. Connect the GPS receiver to the JUMA TX136/500 RS232 port.	Synchro Timer T^14:23:17	See	Configuration mode	If the \$GPGGA NMEA sentence is read correctly then the ^ character is displayed with GPS timer value.
	or				
GPS used on control module J1	7. Connect the GPS receiver to the JUMA control module J1 pin (UART2).	Synchro Timer T^14:23:17	See	Configuration mode	Automatic detection between 4800 and 9600 baud rate at the starting up. If the \$GPGGA NMEA sentence is read correctly then the ^ character is displayed with GPS timer value.
or					

## WSPR Beacon programming (continued)

No GPS	7. Set the ynsynchronization timer.	Synchro Timer T 59:00	See	Configuration mode
↓				
	8. Select the WSPR speed.	Spd 2 PWR MIN WSPR STBY 136000	See	Display mode
↓				
	9. Select the TX frame.	TX x1 PWR MIN WSPR STBY 136000	See	Display mode

## FST4W Beacon programming

	1. Select the FST4W mode.	TX Mode Mode = FST4W	See	Configuration mode	
↓					
	2. Enter your callsign.	Callsign N0CAL ok	See	Beacon configuration mode	A compound callsign is automatically converted to a standard callsign according to the WSPR protocol.
↓					
	3. Enter your 6-character main grid locator.	Locator JJ00AA ok	See	Beacon configuration mode	The locator is automatically converted to 4-character maidenhead grid according to the WSPR protocol.
↓					
	4. Select GPS locator option.	GPS locator Select = OFF	See	Beacon configuration mode	
↓					
	5. Enter the dB level for the TX136/500 power max.	WSPR power 30 dBm PWR MAX	See	Beacon configuration mode	
↓					
	6. Add or not a CW identity.	CW Identity Select = 24 WPM	See	Beacon configuration mode	
↓					

## FST4W Beacon programming (continued)

GPS used on JUMA RS232 port	7. select RS232 = GPS NMEA.	Serial Protocol RS232 = GPS NMEA	See	Configuration mode	The optional GPS receiver must provide a \$GPGGA NMEA sentence.
	7 bis. select Baud rate = 4800.	Serial Speed Baud Rate=4800	See	Configuration mode	Some GPS receivers can use a different baud rate from the NMEA standard.
	7 ter. Connect the GPS receiver to the JUMA TX136/500 RS232 port.	Synchro Timer T^14:23:17	See	Configuration mode	If the \$GPGGA NMEA sentence is read correctly then the ^ character is displayed with GPS timer value.
or					
GPS used on control module J1	7. Connect the GPS receiver to the JUMA control module J1 pin (UART2).	Synchro Timer T^14:23:17	See	Configuration mode	Automatic detection between 4800 and 9600 baud rate at the starting up. If the \$GPGGA NMEA sentence is read correctly then the ^ character is displayed with GPS timer value.
or					
No GPS	7. Set the synchronization timer.	Synchro Timer T 59:00	See	Configuration mode	
↓					
	8. Select the FST4W speed.	Spd 120 PWR MIN FS4W STBY 136000	See	Display mode	
↓					
	9. Select the TX frame.	TX x1 PWR MIN FS4W STBY 136000	See	Display mode	

## JT9 Beacon programming

1. Select the JT9 mode.	TX Mode Mode = JT9	See	Configuration mode	
↓				
2. Enter your callsign.	Callsign N0CAL ok	See	Beacon configuration mode	The callsign and the locator are automatically merged to a plain text JT9 (13 characters max) with a callsign priority.
↓				

## JT9 Beacon programming (continued)

3. Enter your 6-character main grid locator.		Locator JJ00AA ok	See	Beacon configuration mode	The callsign and the locator are automatically merged to a plain text JT9 (13 characters max) with a callsign priority.
↓					
4. Select GPS locator option.		GPS locator Select = OFF	See	Beacon configuration mode	
↓					
5. Add or not a CW identity.		CW Identity Select = 24 WPM	See	Beacon configuration mode	
↓					
GPS used on JUMA RS232 port	6. select RS232 = GPS NMEA.	Serial Protocol RS232 = GPS NMEA	See	Configuration mode	The optional GPS receiver must provide a \$GPGGA NMEA sentence.
	6 bis. select Baud rate = 4800.	Serial Speed Baud Rate=4800	See	Configuration mode	Some GPS receivers can use a different baud rate from the NMEA standard.
	6 ter. Connect the GPS receiver to the JUMA TX136/500 RS232 port.	Synchro Timer T^14:23:17	See	Configuration mode	If the \$GPGGA NMEA sentence is read correctly then the ^ character is displayed with GPS timer value.
or					
GPS used on control module J1	6. Connect the GPS receiver to the JUMA control module J1 pin (UART2).	Synchro Timer T^14:23:17	See	Configuration mode	Automatic detection between 4800 and 9600 baud rate at the starting up. If the \$GPGGA NMEA sentence is read correctly then the ^ character is displayed with GPS timer value.
or					
No GPS	6. Set the synchronization timer.	Synchro Timer T 59:00	See	Configuration mode	
↓					
7. Select the JT9 speed.		Spd 1 PWR MIN JT9 STBY 136000	See	Display mode	
↓					
8. Select the TX frame.		TX 50% PWR MIN JT9 STBY 136000	See	Display mode	

## Script programming

1. Select the script mode.	TX Mode Mode = SCRIPT	See	Configuration mode
↓			
2. Enter the script until 127 characters.	Script =G0=S300	See	Beacon configuration mode
↓			or faster with serial commands
3. Select the TX frame.	TX x1 PWR MIN SCRI STBY 136000	See	Display mode

The script allows to have a TX136/500 automation by acting as a programming language.

The script is composed of both serial commands described on page 'Serial command and query protocol ' and specific commands described below .

Command : =SDxxxx [ 1 to 3600 ]	<b>SCRIPT wait time in second :</b> Set 1 to 3600 s (1h). Introduce a wait time in second during a script execution.
Command : =SHhmm [ 0 to 2359 ]	<b>SCRIPT starting according to the GPS time :</b> Set 0 to 2359. Introduce a wait time to start at the GPS time defined. The script waits until GPS available to determine the wait time. The two last numbers are always like a time minute.
Command : =SL	<b>SCRIPT loop beginning :</b> The script loops after =SL command at the end of execution or after =SNx command.
Command : =SNxxx [ 1 to 999 ]	<b>SCRIPT loop number :</b> Loop number (=SL ... script n times ...=SNn).
Command : =SS	<b>SCRIPT TX shutdown :</b> Force the TX shutdown.
Command : =STxx [ 0 to 59 ]	<b>SCRIPT wait time according to the beginning of the timeslot :</b> Set timeslot 0 to 59 minute. Introduce a wait time to start at the timeslot defined. Must be followed by the =Bx command.

## Script programming (examples)

*FST4W-120 with increasing power cycle, 1 timeslot out of 2 :*

=G7=WT0=WG2=SL=P0=B1=P1=B1=P2=B1=P3=B1

*WSPR2 and FST4W-120 hopping, 1 timeslot out of 2, 2 TX by mode  
(with modes having the same speed the timeslots remain synchronized) :*

=WS0=WF2=WT0=WG2=SL=G6=B2=G7=B2

*FST4W with 120 and 300 speed hopping  
(with speed change the TX start with the next timeslot available) :*

=G7=SL=WT0=B1=WT1=B1

*FST4W-300 which starts at 23h00, 1 timeslot out of 2 with even/odd  
permutation each hour, shutdown at 05:00 :*

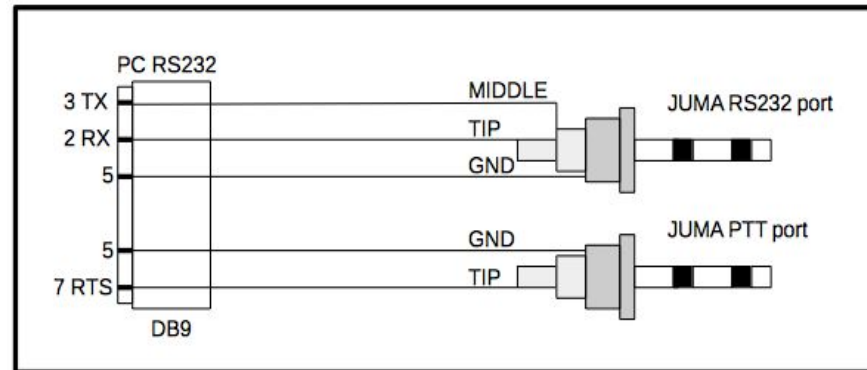
=G7=WT1=WG2=SH2259=SL=ST0=B6=ST5=B6=SN3=SS

## External remote with REMOTE mode

**General :**

JUMA TX136/TX500 can be remoted by another system. Some FSK softwares have an option to send the FSK tones on the serial com and activate the TX with the RTS signal. This feature allows to use these softwares to perform QSO.

**Note 1:** RS232 serial port baud rate should be set to match the JUMA TX136/500 and the software used.



## JASON software from I2PHD

1. Select the REMOTE mode.	TX Mode Mode = REMOTE	See	Configuration mode
↓			
3. Select the 9600 Baud serial speed.	Serial Speed Baud Rate=9600	See	Configuration mode
↓			
4. Select the JASON software (normal or fast).	JASON n PWR MIN REM STBY 136000	See	Display mode
↓			
5. Set frequency 800Hz above RX frequency.	JASON n PWR MIN REM STBY 136200	See	Display mode
↓			
6. Select Operation.	JASON n PWR MIN REM OPER 136200	See	Display mode

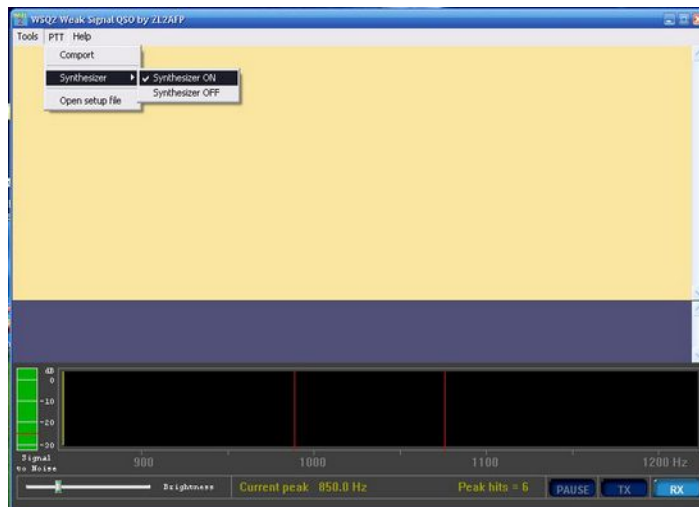
**JASON configuration :**

- 1 - Options >TX Port : select the com used, 9600,N,8,1 and Native Format.
- 2 - Options > Speed : select Normal or Fast.
- 3 - Options > select Rx USB and Tx USB.



## WSQ2 software from ZL2AFP

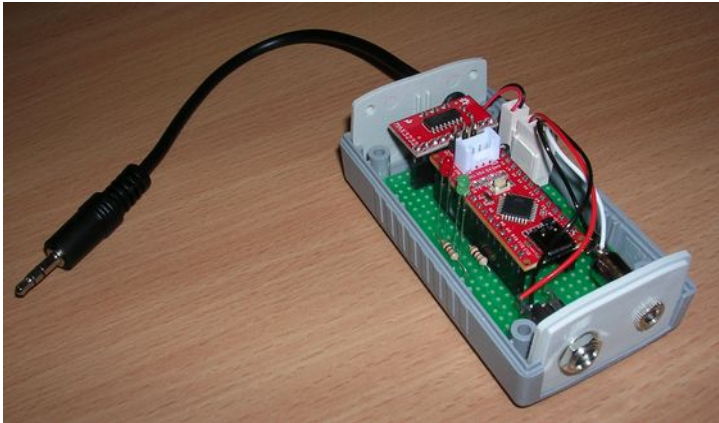
1. Select the REMOTE mode.	TX Mode Mode = REMOTE	See	Configuration mode
↓			
3. Select the 9600 Baud serial speed.	Serial Speed Baud Rate=9600	See	Configuration mode
↓			
4. Select the WSQ2 software.	WSQ2 PWR MIN REM STBY 136000	See	Display mode
↓			
5. Set frequency 1000Hz above RX frequency.	WSQ2 PWR MIN REM STBY 136000	See	Display mode
↓			
6. Select Operation.	WSQ2 PWR MIN REM OPER 136000	See	Display mode

**WSQ2 software configuration for first use :**

– In the directory C:\Program Files\WSQRelease, rename the setup.txt file to setup.txt.old. Then paste the setup.txt file from TX136-500 v1.09.zip.

**WSQ2 configuration :**

- 1 - PTT > Comport : select the com used.
- 2 - PTT > Synthesizer : select Synthesizer ON.



This interface is derived from the QRPGuys AFP-FSK Digital Transceiver kit and its software is based on the excellent work of Kazu Terasaki AG6NS. The principle of operation based on the description of Steve Weber KD1JV and Kazu Terasaki AG6NS is as follows :

The audio signal is applied to the Arduino analog comparator, which is biased near it's trigger point. Using one of the processor's time capture registers, the length of time that the comparator output remains high and low are separately timed in the interrupt routine.

In the main loop, the signal's frequency is calculated, then send to the TX136/500 serial port via the TTL-RS232 converter.

In the TX136/500 the tone frequency received from the AFP interface is simply added to the frequency set to drive the AD9833 DDS.

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Note of the sketch AFP\_Interface\_Rev1.00.ino :

The initial update frequency every 4 ms brings 2 problems :

- the data flow is too important and the TX136/500 serial port loses some data
- because of a too high random uncertainty, very slow modes are not possible

Also the first updates frequency are made every 20 ms :

- enough time resolution for fast modes and the TX136/500 manage the data flow

If no tone frequency change (+- 0,1875 Hz) during 1500 ms then slow mode used (FST4-300 and more)

- updates frequency every 100 ms
- any more random uncertainty and more accurate measurement
- with a no noisy audio signal, the slowest mode FST4-1800 works, but it's really limit for the AFP resolution in addition TX136/500 DDS steps.

#### AFP interface derived from AG6NS (continued)

1. Select the REMOTE mode.	TX Mode Mode = REMOTE	See	Configuration mode
↓			
4. Select the AFP interface.	AFP PWR MIN REM STBY 136000	See	Display mode
↓			
6. Select Operation.	AFP PWR MIN REM OPER 136000	See	Display mode
During the TX, the tone added to the frequency set is displayed.	+1348.74 PWR MIN REM TX 136000		

