



## INTERNATIONAL INC.

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**Exclusive Supplier of Maxon & Headline Radio Communication Products**

SM-2000/5000 Alignment Instructions

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The SM-2000/5000 uses the audio processor CMX881. This ASIC (Application Specific Integrated Circuit) is tunable by utilizing the buttons on the front panel. The procedure is shown below.

1. To control the P1 ~ P3, Emergency, Channel Up and Channel Down buttons you must first program the P3 button using the programming software for a Long Key of ASIC Control. The radio must also be programmed with channels that are narrow band, standard band, carrier squelch, CTCSS and DCS.
2. P1 is Mod 1 control. It controls the CTCSS/DCS gain by attenuator. Range is from 0 ~ 7.
3. P2 is Mod 2 control. It controls the TX audio gain by attenuator. This also affects limiting of CTCSS and DCS. Range is from 0 ~ 7.
4. P3 is TX Gain. It controls modulation gain and can be used to change the microphone gain. Range is from 0 ~ 7. P3 is also the key that places the ASIC into program mode by a long key press.
5. Emergency Key controls CTCSS / DCS limiting and also RX audio gain depending on how the test channel is programmed. CTCSS range is from 7645 ~ 8400. DCS range is from 57545 ~ 58300. RX audio gain range is from 0 ~ 7.
6. Channel Down Key controls modulation limiting. Range is from 900 ~ 3200.
7. The Channel Up Key saves the key setting and exits ASIC control.

Note: Once ASIC control has been entered, a key press will display one level up from where the key was initially programmed. For example if Mod 1 is to be tuned and the P1 button is pressed, it may display 3. It is currently programmed at level 2. Changes to the radio are not made until the Channel Up Key is pressed.

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The table below shows typical SM2000/5000 ASIC values. When working on a radio it is important to write down current settings before making changes. Changes in one area may affect another.

Model	Band	MOD1	MOD2	RX Gain	TX Gain	Limit	Ctcss	Dcs
SM-2402	S	3	1	5	2	2500	58400	58300
	N	3	1	5	0	1400	57945	57800
SM-2102	S	6	6	3	3	2000	58200	58145
	N	6	6	3	1	1100	57800	57745
SM-5402	S	2	1	3	4	3400	58784	58548
	N	2	3	3	2	1700	58028	57818
SM-5102	S	6	3	3	6	1800	8400	58300

The picture below shows basic key functions. Refer to the descriptions above for complete information.

