

## Nonconformities FCC ID: CW21100-5 (CKC CS Ref # 96354-17-FCC)

The items listed below represent requests for information following review of this application for certification under United States (FCC) regulations. Further question may arise pending review of responses to these items.

<b>OK</b>	<b>ID</b>	<b>#</b>	<b>Non-Conformity or Comment</b>	<b>Submitted Response</b>	<b>Respondent / Date of Response</b>
X		1	FCC and IC ITEM: The transmitter information cannot be located on the schematics provided. Please explain and/or provide updated schematics showing the transmitter circuitry.	Please see attached transmitter schematic exhibits.	Rothenbuhler Engineering 2/13/2015
X		2	Please provide the equipment's emissions designator. (see similar IC item).	9K00F2D Maximum Modulation (M), kHz = 2.4 Maximum Deviation (D), kHz = 2.1 Constant Factor (K) = 1 Necessary Bandwidth (BN) , kHz = $(2 \times M) + (2 \times D \times K) = 9.00$ Necessary Bandwidth = 9K00 Frequency Modulation = F Single Channel digital information with modulating sub-carrier = 2 Data transmission = D	Rothenbuhler Engineering 2/13/2015
X		3	The power output listed in the application form is 0.5 W, however the operational description indicates power output is configurable to 6W [operational description pages 4 and 6]. CKC CS noted that changes could be made to frequency assignments by an authorized, licensed service shop; does the also extend to power output settings?  Please clarify how equipment is controlled such that the transmitter power cannot exceed the power certified.  NOTICE: If equipment is certified for 0.5W, a request for equipment authorization for higher power cannot be performed via PCII; a new	The transceiver module is capable of power output levels of $\frac{1}{2}$ watt to 6 watts. These applications (1100-3 Carriage Transmitter & 1100-5 Yarder Transmitter) limit the power output level to $\frac{1}{2}$ watt. Adjustments to the power output level to obtain $\frac{1}{2}$ watt are limited to factory authorized & trained service shops - as are frequency assignments.  The power output level is controlled	Rothenbuhler Engineering 2/13/2015

			<p>equipment certification would be required. If equipment certification is sought during this evaluation for output power &gt;0.5W, then updated test data will be required demonstrating compliance with emissions limitations at the higher output power.</p>	<p>with a digital potentiometer and active circuit feedback. The value for the digital potentiometer is stored in non-volatile memory and automatically loaded each time the transmitter transmits. Factory and authorized service center personnel are trained to adjust the power output level to ½ watt conducted via adjustments to the digital potentiometer value using factory software and instructions.</p> <p>Please see attached updated “1100 Talkie Tooter Factory Configuration and Alignment Procedures” exhibit.</p>	
x		4	<p>Please clarify frequency deviation shown in test report 96354-8 on pages 36-39; the report does not indicate frequency deviation limits.</p>	<p>Limits are set for 12.5 kHz Channels</p>	CKC (SP) 2/13/15
x		5	<p>The operational description (page 4) states that the equipment supports both data and voice communications. Furthermore, the operational description states that the equipment operates on 6.25 and 12.5 kHz channel bandwidths. However, the data provided in the test report seems to indicate testing only on the 6.25kHz bandwidth using one modulation type.</p> <p>Please clarify operational modes and configurations. If equipment is able to operate with wider bandwidths, please provided updated test data demonstrating compliance with emissions limitations in that operational mode.</p>	<p>While the transceiver module is capable of 6.25 kHz and 12.5 kHz channel bandwidths with data and voice communications, these applications (1100-3 Carriage Transmitter &amp; 1100-5 Yarder Transmitter) only operate on 12.5 kHz bandwidth channels and only with data communications. These applications do not incorporate a microphone and are not voice capable. All submitted test data is for 12.5 kHz bandwidth channels.</p>	Rothenbuhler Engineering 2/13/2015

				Please see attached updated operational descriptions.	
x		6	<p>Please provide attestation in accordance with 90.203(j)(1) regarding voice operation on public safety frequencies; clarify whether equipment is capable of operation on nationwide interoperability channel(s) within this band.</p> <p>Please provide attestation in accordance with 90.203(j)(5) regarding spectrum efficient of one voice channel per 6.25kHz of channel bandwidth, or clarify operational frequency ranges with the business/industrial pool.</p> <p>And any other applicable provisions of part 90 related to operation in the 150-174 MHz bands and/or clarify requested certification of frequency range(s).</p>	<p>This equipment (1100-3 Carriage Transmitter &amp; 1100-5 Yarder Transmitter) is not designed to, nor is it capable of transmitting voice.</p> <p>This equipment's output level is not greater than 500 mW. However, the equipment does have a data rate of 9600 bits per second and operates on 12.5 kHz bandwidth channels. Thus it meets 90.203(j)(5) requirement of a minimum data rate of 4800 bits per second per 6.25 kHz of channel bandwidth.</p>	<p>Rothenbuhler Engineering 2/13/2015</p>