

Kenwood Viking Series Auto-Test and Alignment

CX300-TPKV

Viking Series Cable Configuration

Hardware Required

Kenwood Viking						
Portable (Handheld) Radio 1. RG-223 RF Cable (2) 2. RF Adapter BNC(F) to SMA(F) (Example Pasternack PE9407) 3. KPG-36X or 835VTKVPX000	Mobile Radio 1. RG-223 RF Cable (2) 2. UHF(M) to BNC (F) (Example Pasternack PE91328) 3. KPG-46X or 835VTKVMH00 4. KCT-23M DC Cable 5. DO Dewer Supply (Switching) Z04 17. 0 V/de					
4. Battery Eliminator (listed as NX5000) <u>www.batteryuniverse.com</u> AT	5. DC Power Supply (Switching) 30A 13.8 Vdc					
• Items above (For table 2-4) and (nobile 2-5) must be putchased separately						

- Links and examples above are only suggested suppliers
- 835VTKVPX000 Viking Tune Cable must be used for Alignment of RX Filters and RX Squelch and to also test Rx Sensitivity.
- To use KPG-36X as the Program/Test cable for the RX Align/Test the cable must be modified.
- To modify KPG-36X see the schematic on Page 6. The "AF Voltmeter" is the only path required.
- If using KPG-46X for Mobiles or KPG-36X for Portables the Pod switch must be in the USB position.



Viking Auto-Test Connection Information

Connecting the Radio to the CX300

After following the instructions in the document titled **Initial Setup Auto-Test Configuration** (Including Cable Loss) You are ready to connect the Radio to the CX300 as follows:

- 1. Figure 1 shows the connection information using an unmodified KPG-36X
 - a. The unmodified KPG-36X can be used to perform all Tests and Alignments **excluding** Alignment of RX Filters and RX Squelch and the Rx Sensitivity test.
- 2. **Figure 2** shows the connection information using a modified programming cable: KPG-36X and a user fabricated Audio Breakout box.
 - a. All Alignments and Test can be performed with this configuration.
- 3. **Figure 3** shows the connection information using the Portable programming cable: 835VTKVPX000
 - a. All Alignments and Test can be performed with this configuration.
- 4. Figure 4 shows the connection information using the Mobile programming cable: KGPX-46
 - a. Note the 3.5 mm Audio Jack to BNC (M) from the Speaker output of the radio to the Audio Input port of the CX300
 - b. All Alignments and Test can be performed with this configuration.
 - c. The mobile diagram is shown in reverse image for simplicity.



Portable Radio without Audio Breakout



Portable Radio with modified KPG-36 and Audio Breakout Box

Portable Radio with 835VTK



Mobile with Audio Out



Mobile with Balanced Audio Out



Auto-Test Sequence

With your choice of connection shown in the previous page proceed with the following:

- 1. With the connected radio turned 'ON" tap Read Device. Figure 5
 - a. This will bring up unique parameters for the Model of radio identified.
- 2. Tap the Test Type and select Test or Align and Test. Figure 6
 - a. Selecting **Test** allows all tests enabled in the left column to be executed.
 - b. By tapping the **Enable** tab in the left column allows the user to enable a subset of tests.
 - c. Selecting **Align and Test** will align all parameters selected in the Left column.
 - d. The user can also select a subset of parameters by tapping the **Enable** tab.
- 3. At this point the user is ready to Start the "Test" or "Align and Test". Figure 7
 - a. At the Run tab select **Start**.
 - b. Upon the Test completion Tap the Reports tab/highlight the Report/select View Report. Figure 8

Figure 5							🔹 🛠 🕼	12:04 AM
		AutoTest					Ð	=
		Aeasure AutoTest						
Status	Inactive	Manufacturer	Mode	si.	Test Type	Read Device	Run	
Run Time	00:00	Kenwood Viking 🧧	VMx630H VHF	Low Band 🧧	Test	Read	Start 🛟	
Enable	Test Name	Status	Result			Log	Clear Log	
	Radio Information	ı	٩	RX BER Passe	d			-
	TCXO Frequency		Q					
	Tx Power Test		Q					
•	Rx Sensitivity		Q					N.
•	Tx Parametrics		Q					-/
•	Rx BER		Q					
								Cal
Save P	rofiles	Test Menu	Rep	orts				0
7						•		

	•					, •) 🔆 °C 🚾	11/26/2014
Fig	ure 6	Measure AutoTest	AutoTest		•	ê l	
status	Inactive	Manufacturer	Model	Test Type	Read Device	Run	1
Run Time	00.00	Kenwood Viking 🧧	Test Type >	Align and Test	Read	Start 🙀	p â
Enable	Test Name	Status	Test		Log	Clear Lo	
_	De die Informatio	-	Align and Test	d			
	Radio Informatio	nc					÷
•	Assist						м
	Rx Filters						
	TCXO Frequenc	у					M
	Tx Modulation						÷.
	Tx Max Power						
	Tx Broadband Po	wer					
							Cal
Save F	Profiles	Test Menu	Reports				0
1							

Fig	uro 7						🖁 🜒 🛠 🔍 🚾	12:04 AM
гiy	ule/		AutoTest			27	÷	=
Status Test Progress Run Time	Inactive 00:00	Manufacturer Kenwood Viking	Mode VMx630H VHF	al Low Band 🗧	Test Type Test 🧲	Read Device Read	Run start	â
Enable	Test Name	Status	Result		1	Log	Clear Log	
	Radio Information	ı	٩	Rx BER Passe	b			
	TCXO Frequency		Q					=
	Tx Power Test		Q					Ŵ
	Rx Sensitivity		Q					M
	Tx Parametrics		Q					-Å
	Rx BER		Q					Ø
								Cal
Save P	rofiles	Test Menu	Rep	orts		0		0

Fig	ure 8						l	• 🔊 🛠 🕩	Ĵ; 🚾 🛙
1.19		Measure AutoTest	AutoTest				🥩 Pas	s 🔒	
Status Test Progress Run Time	Inactive Complete 04:57	Manufacturer Kenwood Viking	Modi VPx330 UH	al IF 380 🗧	⊺est Type Test	B	ead Device Read	Run Start	,×* *¢°
Enable	Test Name	Status	Result			Log		Cle	ar Log
	Radio Informatio	n Complete	Q	445.80750 1620 470.00000 1620	<= 1764.4 <= 198 <= 1764.6 <= 198	IO HZ Passe IO HZ Passe	d d		
	TCXO Frequency	Passed (2 / 2) Q, Tx Parametrics Passed							
	Tx Power Test	Passed (27 / 27)	d (27 / 27) Q						
	Rx Sensitivity	Passed (6 / 6)	Q	Frames: 5, Bit Er 380.05000 0.00	rors per frame: 3 -117.0 0.47 <= 5	9.60 .00 % Pass	ed		
	Tx Parametrics	Passed (11 / 11)	Q	Frames: 5, Bit Errors per frame: 19.20 402.55000 0.00 -117.0 0.31 <= 5.00 % Passed					
	Rx BER	Passed (6 / 6)	Q	Q, Frames: 5, Bit Errors per frame: 14.00 425.05000 0.00 -117.0 0.22 <= 5.00 % Passed					
				+rames: 5, 8tt Errors per trame: 20.40 447,55000 0.00 -117.0 0.33 <= 5.00 % Passed Frames: 5, 8tt Errors frame: 15.80					
				469.95000 0.00	-117.0 0.25 <= 5	00 % Pass	ed		- 1
	_			Dy DED Dat	ed				
Save P	rofiles	Test Menu	Rep	orts					

Closing the .pdf

4.To close the .pdf and return to AutoTest Select Exit. Figure 9

- a. The User can now proceed to the next Radio.
- b. If the user is testing the same model radio the user can skip **Read Radio** and simply select **Run**.

A	Home	🛃 СХЗОО Со	omXpert		📙 🕕 🛠 🍳 🚾 1:21 AM
_				VPx330-F033001912230035-20241127-002519-T	est.pdf
	Kenw Wedn	vood Viking S nesday, 27 No	Series ovember 2024	Test Summer Beend	Figure 9
	L L S V S	Fechnician ID: Location: Jnit Type: Serial number: Jersion: Script Version:	N/A N/A CX300 WMNM0050900002 2.3.0_b29.20241118175925 1.0.9	Test Sequence Complete	
	Radio Test T	Information Time: 00:00	VALUE		-
*	Radio: V Software Band: U Bootload ESN: F0 DSP Ve Cable Lo Cable Lo	/iking VPx330 Porta e Version: 8.42.204 HF 380 d Version: 8.42 0-33-00-19-12-23-00 rsion: 5.42.1 oss Receiver: None oss Generator: None	- Manual Offset: 0.00 dB e - Manual Offset: 0.00 dB		
	тсхо	Frequency		1 of 3	Original ÷

Pinout and Schematic for Audio Breakout

Universal Connector

Use the interface cable (KPG-36U) for PC tuning or the lead wire with plug (E30-3287-28) and screw (NOS-0535-08) for panel tuning. Connect the plug to the universal connector of the transceiver and tighten the screw.

The lead wire with plug (E30-3287-28) and screw (N08-0535-08) terminals are as follows. Numbers are universal connector terminal numbers.

Caution

- When connecting the plug to the universal connector of the transceiver, a short circuit may occur. To prevent this, be sure to tum the transceiver POWER switch off.
- (2) Since the RX AF output is a BTL output, there is a DC component. Isolate this with a capacitor or transformer as shown in the figure.
- (3) Do not connect an instrument between red or black and GND.

Universal Connector



Panel Tuning



Note: Pin 1 (SSW) and Pin 4 (MSW) are connected to Pin 10 (GND) to active External SP and External MIC.



Contact Us: +1 800 835 2352 | avcomm.sales@viavisolutions.com

© 2025 VIAVI Solutions Inc. Product specifications and descriptions in this document are subject to change without notice. Patented as described at viavisolutions.com/patents

kenwoodviking-an-avi-nse-ae 30194341 900 0325

viavisolutions.com