

Troubleshooting

Symptom	Possible Cause	Suggested Fix
COR signal drops below 3V when connected	IDOM loading COR too heavily	Connect IN+ to 12V to boost current
TX radio does not transmit	PTT line not pulled low	Verify PTT wiring and switch logic
Audio is distorted or muddy	PWM signal without filtering	Enable high-pass filter (SW2 OFF)
IDOM not detecting COR activity	COR polarity mismatch	Set COR=0 (active low) in IDOM Settings

Compatibility

Verified with Wouxun KG-1000G, KG-1000G Plus, and KG-UV980P radios

Designed to support Auto-ID devices including the ID-O-Matic

KG-1000 Series Breakout Board

User Documentation

Version 1.0

Overview

The KG-1000 Series Breakout Board enables auxiliary functionality with some features similar to those typically found on repeater AUX ports. It's designed to work in-line with two Wouxun KG-1000G, KG-1000G Plus, or KG-UV980P radios configured in repeater mode, providing connection points for Auto-ID devices like the ID-O-Matic (IDOM). This board passes key audio and control signals while offering signal conditioning and optional filtering.

Features

- Direct inline connection via two RJ45 jacks (for use with standard straight-through RJ45 cables)
- Terminal block breakout for:
 - GND (Ground)
 - COR (Carrier Operated Relay / Busy)
 - PTT (Push To Talk)
 - RX_AUDIO
 - TX_AUDIO
 - IN+ (external voltage for COR signal boosting)
- DIP switch options for:
- RX/TX audio passthrough (bridges RX_AUDIO to TX_AUDIO)
- High-pass filter disable (removes default ~1.76 kHz filter on TX_AUDIO)
- Includes 3D printed protective case
- Includes two straight-through RJ45 cables

Installation

1.

Hardware Connection

- Connect two KG-1000G radios using standard RJ45 data cables into the breakout board.
- Use the terminal block to connect your ID device or accessory:
 - **GND** – Ground reference
 - **COR** – Carrier Detect output, 0V = active, ~5V = idle (amplified using emitter-follower transistor)
 - **PTT** – Active low input to transmit
 - **RX_AUDIO** – Audio from the receiver radio
 - **TX_AUDIO** – Audio to the transmitter radio
 - **IN+** – Optional 12V power source for boosting COR signal current (not required in all setups)

Important: Use straight-through RJ45 cables. Do not use reversed cables like the OEM KG-1000G repeater cables (SCO-001, SCO-002), as these swap pins 5 and 7.

2.

DIP Switch Settings

- **SW1: Audio Passthrough**
 - ON: Connects RX_AUDIO directly to TX_AUDIO (bypass mode)
 - OFF: Allows external device (like ID-O-Matic) to process and insert audio
- **SW2: Disable High-Pass Filter**
 - OFF (default): Enables ~1.76 kHz filter on TX_AUDIO to remove low-frequency noise (recommended for PWM-based devices like Raspberry Pi)
 - ON: Disables filter; use when external device provides clean analog audio

Usage with ID-O-Matic

BB-1000G Pin	Notes
IN+	12v Power Source
COR	IDOM Pin 7
PTT	IDOM Pin 3
RX_AUDIO	IDOM Pin 8
TX_AUDIO	IDOM Pin 11
RX/TX Passthrough	OFF
Disable Filter	OFF

Notes

- ID-O-Matic COR polarity should be set to (0) active-LOW.
- ID-O-Matic PTT polarity should be set to (0) active-LOW.
- With RX/TX passthrough disabled (recommended), RX_AUDIO goes into the ID-O-Matic and processed audio is fed back to TX_AUDIO.
- With passthrough enabled, audio flows directly from RX to TX and the IDOM only keys PTT and optionally overlays CW ID.

Tips and Notes

- The COR line on the breakout board is idle high (5V) and goes low when the RX radio is receiving.
- If using the board without the ID-O-Matic, passthrough mode can still enable basic repeater operation with audio flowing directly from RX to TX.
- Power for ID-O-Matic can come from the same 12V source as the radios, and IN+ can optionally be connected to the same supply to improve COR signal strength.