

# DACS FAQ's

**Q: Does the DACS equipment meet TSO C50?**

A: Yes, the DACS received EASA ETSO-C50c approval in September 2009 and TC/FAA TSO-C139 approval in October 2009.

**Q: What is the difference between the ACP53-001 and ACP54-001?**

A: The ACP54-001 is the same as ACP53-001, but has seven TX positions/volume controls for the transceivers instead of eight. Note: ACP54 is unique to ECF.

**Q: We are installing AMU50, ACP53, and ACP51 in our aircraft and plan on two or maybe three PRC-117G. It appears the AMU may work with the mic, but the audio doesn't seem selectable. Will we have to install an AA34-300 for each PRC?**

A: No, because with DevCs programming, each RX audio level can be adjusted from between 1 Vrms and 19.95 Vrms @ 1 K ohm impedance.

**Q a): I have a customer that has a comm. with a separate sidetone output. What would be the best way to hook the comm. sidetone and audio into the AMU50?**

A: If it is a primary comm, I recommend connecting the sidetone output to one of the first three direct audio inputs. Under the ACP screen, they would need to ensure the selected direct audio input is not muted during transmit. Another option is to use an external summing amp (Model 247?) to ensure the audio is managed correctly inside the AMU.

**Q b): We have a question using the direct audio approach. If we do this, will all ACP positions that have the direct audio turned on, receive the audio regardless of Comm audio selection on the ACP? Also, can you confirm that receive audio for a specific transceiver is muted internally by the AMU during transmission?**

A: Everyone who is programmed to hear the direct audio will hear the sidetone at all times. The direct audio access is on a per ACP basis. If ACP#3 in the rear, is programmed to hear Direct, then audio #3 (if this is the one they connect the sidetone to) will hear the sidetone, even if the transceiver selection is off.

**Q: Is the AMU50 powered from the +28VDC EMERG PWR? Does it remain operational in Normal Mode or is communication lost until one of the crew members switches to Back-up or Emergency Mode?**

A: When Normal Power is lost the unit stays in Normal Mode. The unit will not switch into Emergency Mode until one of the crew places their mode switch into Back-up or Emergency Mode. However the AMU will automatically select emergency mode if it loses physical connection with any primary ACP (typically ACP 1 or 2).

**Q: Our winchman has to be able to talk at all times to the pilot. You have a hardware selection and a Software assignment - please explain the difference. Is the winchman still part of the crew IC in Emergency mode?**

A: The winchman/user 7 can be assigned to any ACP via DevCS. Assigning him to ACP1 would ensure that even in ISO mode, he could communicate with the pilot (assuming the pilot is user1). When using the winchman, I recommend bringing the return line for the Winchman switch back to the AMU50 and grounding it there.

**Q: We have no auxiliary equipment, so should a load resistor be added to be on the safe side?**

A: ICS tie line (analog setting) can operate without the load resistor but it recommended that this be installed when an auxiliary audio amplifier is not connected to the AMU50's tie line.

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**Q: ACP51 - Patient Mode Control: Is this mode to isolate all users allocated to this specific ACP from the rest of the Intercom?**

A: On the ACP51-100 or ACP51 units with the PAT NORM/ISO switch, the switch is hard-wired directly to the pin 14 on the connector. When the front switch is in the ISO position, a ground/discrete low is present at pin 14. See Note 3 on the ACP51-100 interconnect drawing. This was designed to control an External relay to control the phone and/or mic wiring to the patient position(s) in an EMS configuration.

**Q: User Config: Mic/Headphones - Config Mic and headphone impedance: no pull down selection list, only 150ohm, how can I set the impedance? I have a set of three headphones (PAX Grp) connected to one user entry.**

A: This selection has been disabled for TSO reasons. The AMU50 headset outputs are designed to support a maximum of two headsets paralleled on each headset pin NOT three. DO NOT parallel three headsets together or damage may occur. If you need more headsets for PAX Group\* than the AMU50 is capable of, consider using another ICS Loop unit, like the AA38-300 or AA38-601, connected to the AMU50 using the analog ICS Tie Line.

(\*If your PAX Group is only four more headsets, you may not need an external loop box. Since the AMU50 will support up to seven headsets and each headset position will support two headsets, the final 6th and 7th headset position of this configuration could support a total of four headsets. If you have more than four PAX in the PAX Group, the external ICS Loop unit is required.)

**Q: Can we program ACP#3 so the users assigned to it cannot hear or transmit off primary comm and also cannot listen to the Direct 3? Less confusing than only hearing the sidetone when the comm is not selected.**

A: Direct audios can be muted on a per direct audio basis during transmit. Some external warnings may be high priority and some low. You will want the high priority warnings to be heard even during transmit. But the receive audio (the receive audio other than the transceiver you are transmitting on) can only be muted or unmuted globally. This is done on the ACP screens. You can disable individual transceivers transmit and/or receive on a per ACP basis as well.

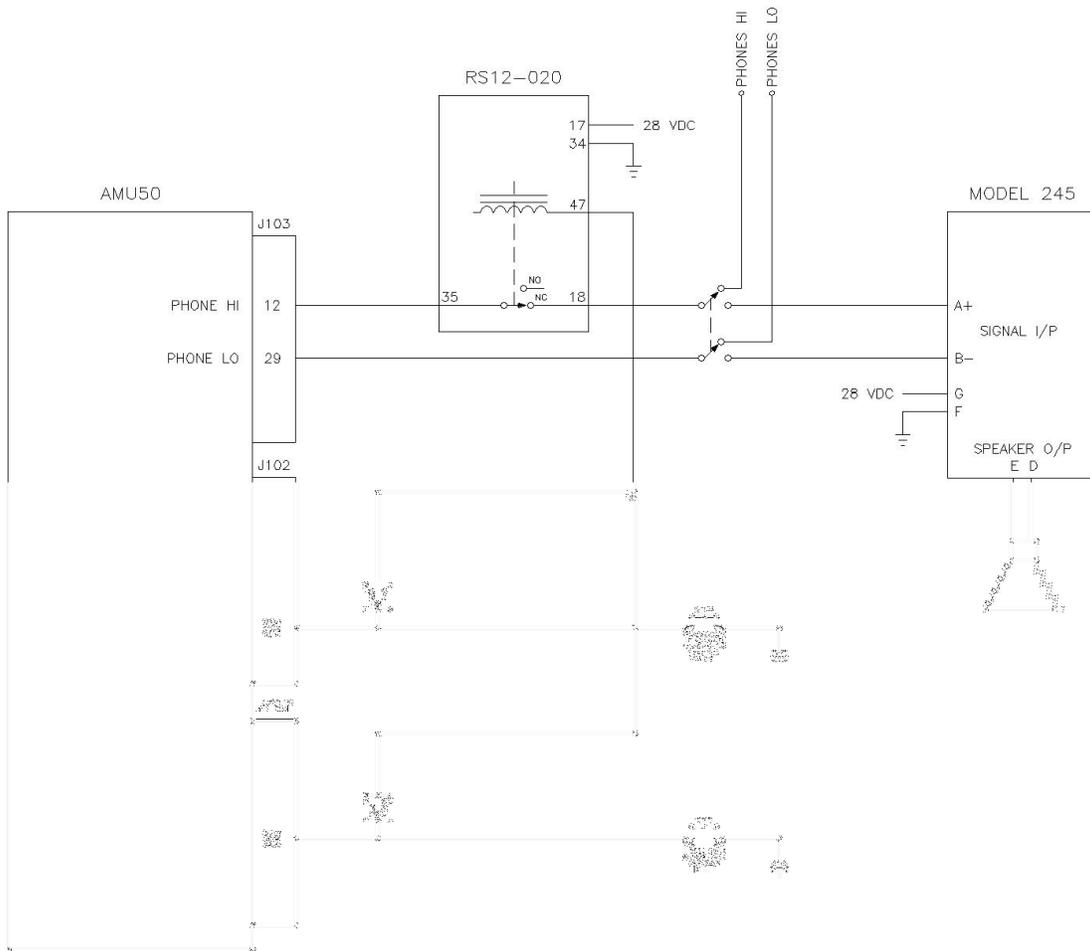
**Q: There is no provision for driving the cockpit speaker in the AMU50 or the ACP53. What do you have as a work-around to drive the cockpit speakers?**

A: For a speaker output, you can use a phones output from the AMU50 and hook it to a Model: 245 Speaker Amp and then to the speaker. There is no speaker switch on the ACP's, so you will have to install an external speaker on/off switch. You will also have to install a relay and hook it to the PTT line to disconnect the speaker during TX or you will get feedback (see Fig. 1).

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Fig. 1:



**Q: What is the EMER current load of DACS?**

A: EMERG Mode: Supply @ 28.0 VDC, ACP53 panel lights ON  
 Amps with User 1 & 2 phones at rated power.  
 Amps with User 1 & 2 phones at rated power with double loads (two 8 ohm phones in parallel).

**Q: If the TAC 2 position is not used, is it required to have a 1 K load resistor across the Mic Hi and Mic Lo input on J102, Pin 2 and 19?**

A: Unused transceiver mic outputs do not require termination loads.

**Q: How are the Tag rings installed from the AMU50-001 installation kit for the DACS system?**

A: The shields are attached to the tag ring. A wire is also attached from the tag ring and attached to the inside of the metal d-sub shell, then the 2 rings are screwed together. The assembled ring sits about a half inch behind the connector.

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**Q:** My aircraft does not have any Weight-On-Wheels input. How will I be able to download the configuration software or to use the RM01 without the WOW?

**A:** You would need to add a toggle switch to act as the Weight-On-Wheels. For most applications, we recommend you define this switch as a Maintenance switch with two modes - Maint. and Flight. We also recommend the use of a locking switch to ensure it is not accidentally set to the wrong mode.

**Q a):** Is there a special cable to use in between the AMU50 and the data port connector in the Aircraft? How long is it?

**A:** For the airframe wiring (AMU50 to data port connector), we recommend the use of ECS p/n 912204 cable (see Fig. 2). Max length we tested was 10'.

Fig. 2

REVISIONS				
ECN	REV	DESCRIPTION	DATE	APPROVED
20029	2	ATTENUATION REVISED	6/8/04	D. KNOLL
20418	N/C	CHG'D WEIGHT FROM 3.4 LBS TO 2.93 LBS	7/29/04	D. KNOLL
24791	A	CHG'D JACKET FROM BLUE TO WHITE	2/15/06	DJK

**ECS P/N 912204**

**1 Twisted Data Pair**  
 Conductor : 22 AWG tinned copper  
 Insulation : Low density, high temperature fluoropolymer  
 Color code : Green, White

**2 Single Power Wires**  
 Conductor : 22 AWG tinned copper  
 Insulation : High temperature fluoropolymer  
 Color code : Red, Black

**Overall Cable**  
 Shield 1 : Aluminum/polyester tape, 100% Coverage  
 Drain Wire : 24 AWG tinned copper  
 Shield 2 : 38 AWG tinned copper  
               : 85% Coverage minimum  
 Jacket : White abrasion-resistant, high temperature fluoropolymer  
 Cable Marking : Cable will be marked with ECS part number

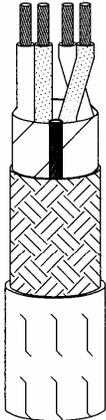
**Performance Attributes**

**PHYSICAL**  
 Cable O.D. : .192 Nominal  
 Weight : 2.9 lbs/100 ft  
 Bend Radius : 1.0 Minimum  
 Operating Temperature : -55 to +150°C  
 Skydrol resistant

**ELECTRICAL (data pair)**  
 Impedance : 90 Ohms Nominal  
 Attenuation : < 3.0 dB/5 m @ 400 MHz.  
 Conductor DC Resistance: .0511 Ohms/Meter maximum  
 Resistance Unbalanced : < 5%  
 Propagation Delay : 26 nS/5 Meter maximum full/high speed  
 Maximum Skew : 100 pS/5 Meter maximum

**ELECTRICAL (power wires)**  
 Conductor DC Resistance: .0547 Ohms/Meter maximum

**ENVIRONMENTAL**  
 Flammability : Complies with the requirements of FAR 25.853(a), and FAR 25.869(a)(4).



APPROVALS DESIGNED BY C CHAPMAN 05/03/04 CHECKED BY DAVID KNOLL 6/8/04 ENGRG MGR DAVID KNOLL 6/8/04		ELECTRONIC CABLE SPECIALISTS FRANKLIN, WI 53132 PHONE: (414) 421-5300		
		TITLE CUSTOMER SPECIFICATION 4 CONDUCTOR 90 OHM USB CABLE		
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: DECIMALS XX ±.03 XXX ±.010	SIZE <b>A</b>	CAGE CODE <b>66197</b>	LEVEL <b>912204</b>	ECS PART NO. <b>A</b>
SCALE			SHEET 1 OF 1	

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**Q b): Also is there a special cable from the data port to the computer?**

A: For the USB cable for use between the computer and the airframe connector, we recommend using a 3' Amphenol Type A to Type A cable, p/n USB2AA100PUHFFR.

**Q: c): What is the recommended data port airframe connector?**

A: For the airframe connector (data port), we recommend the Amphenol USB jamnut connector, p/n USBFTV7PE-2N.

**Q: Will the DevCS work with a PC running with Vista?**

A: No, only Windows XP will work at the present time. Windows 7 is currently being tested with DevCS.

**Q: When the AMU50 is put into the ISO mode by the ACP, what headsets are on the Tie line?**

A: When ACP 1 & 2 are placed in ISO mode, the Users assigned to those ACP's will be isolated from the remaining ACP's. The remaining ACP Users will be on the ICS tie line.

**Q: How should I set up the Transceivers and Receivers into the DACS system?**

A: First in the DevCs you would set the "Rx Audio" Input level to reflect each Transceiver and Receiver's maximum output as found in the Manufacturer's specifications. Typically a default setting would be 7.5 Vrms which is approximately 100mW @ 600 ohms.

Then set the volume control on each unit to the 3 o'clock position. Note if the control is set to max volume, this may introduce clipping and distortion into the system.

Then on your ACP, set your Master RX volume control to the 3 o'clock position and each Transceiver and Receiver volume control to the 12 o'clock position.

Note: For the Garmin GNS 430 you may find the side tone at a lower than desired level. It has been found that you may need to go into the unit's configuration mode and increase this level to a max setting of 63.