

## NASA Space-Grade Guidelines and Outgas Data

MOD CODES AND OUTGAS DATA

### MODIFICATION CODE -429 SPECIAL INSPECTION PER NASA EEE-INST-002

Modification code -429 is added to the end of a part number for special inspection per NASA EEE-INST-002. These modification codes are available for all El Ochito contact kits (e.g. 858-003-02-429).

With proper cable selection, 429 mod codes may also be applied to El Ochito jumpers (series 857X-XXXX-429). Contact factory for details.

NASA Screening Level and Available Outgassing Modification Codes				
Screening Level	Screening Only	48 Hour Oven Bake 175° C	Thermal Vacuum Outgassing (10-6 Torr)	
			24 Hour 125° C	48 Hour 175° C
NASA, Level 1 Highest Reliability	429B	429J	429C	
NASA, Level 2 High Reliability	429	429K	429A	429AA
NASA, Level 3 Std. Reliability	Use Standard Part Number		429L	

### SPACEWIRE


Glenair SpaceWire assemblies begin with a high-performance cable built with expanded polytetrafluoroethylene (ePTFE) insulation. This material allows for low-loss transmission of LVDS signals, maximizing data-rates while allowing for the implementation of standard hardware protocols, thus eliminating the need for design customization and long lead time cable projects.


In order to meet the stringent crosstalk requirements of SpaceWire, El Ochito White is required. El Ochito White Type II contacts are compatible with #28 AWG SpaceWire (ESCC-3902/003-01). For applications requiring #26 AWG ESCC-3902/003-02 type SpaceWire please consult factory.

### OUTGAS DATA

El Ochito White				
Component	Material	TML%	CVCM%	Test Reference
Inner & Outer Insulator	Natural, Unfilled PPS	0.07	<0.01	Glenair test at Pacific Testing Laboratories 2-22-2022 TR73209
Spacer (Cabled Ochito Only)	Ultem 1000	0.69	0.00	NASA Outgassing Data for Selecting Spacecraft Materials
Rear Insulator (PC Tail El Ochito Only)	PTFE	0.01	0.00	NASA Outgassing Data for Selecting Spacecraft Materials
Epoxy (PC Tail El Ochito Only)	Hysol EE-4215	0.55	<0.01	Glenair test at Pacific Testing Laboratories 7-25-2017 TR59899-3
O-Ring & Cable Grommet (Grommet Follower & Type II Only)	70/30 Fluorosilicone/Silicone Blend per GPS78 Grade 40	0.12	0.02	Glenair test at Pacific Testing Laboratories 6-17-2020
Cable Grommet Follower (Grommet Follower Option Only)	Ultem 2300	0.44	0.00	NASA Outgassing Data for Selecting Spacecraft Materials
Ink Marking	Markem-Imaje 7224 Series	0.41	0.04	NASA Outgassing Data for Selecting Spacecraft Materials

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 <b>El Ochito Blue</b>				
Component	Material	TML%	CVCM%	Test Reference
Inner & Outer Insulator	GPS169	0.20	<0.01	Glenair test at Pacific Testing Laboratories 7-19-2021 TR71364
Spacer (Cabled Ochito Only)	Ultem 1000	0.69	0.00	NASA Outgassing Data for Selecting Spacecraft Materials
Rear Insulator (PC Tail El Ochito Only)	PTFE	0.01	0.00	NASA Outgassing Data for Selecting Spacecraft Materials
Epoxy (PC Tail El Ochito Only)	No. 1 Vary Flex	0.29	0.01	NASA Outgassing Data for Selecting Spacecraft Materials
O-Ring & Cable Grommet (Grommet Follower & Type II Only)	70/30 Fluorosilicone/ Silicone Blend per GPS78 Grade 40	0.12	0.02	Glenair test at Pacific Testing Laboratories 6-17-2020
Cable Grommet Follower (Grommet Follower Option Only)	Ultem 2300	0.44	0.00	NASA Outgassing Data for Selecting Spacecraft Materials
Ink Marking	Markem-Imaje 7224 Series	0.41	0.04	NASA Outgassing Data for Selecting Spacecraft Materials

 <b>El Ochito Red</b>				
Component	Material	TML%	CVCM%	Test Reference
Inner & Outer Insulator	GPS173	0.20	0.01	Glenair test at Pacific Testing Laboratories 7-19-2021 TR71364
Spacer (Cabled Ochito Only)	Ultem 1000	0.69	0.00	NASA Outgassing Data for Selecting Spacecraft Materials
Rear Insulator (PC Tail El Ochito Only)	PTFE	0.01	0.00	NASA Outgassing Data for Selecting Spacecraft Materials
Epoxy (PC Tail El Ochito Only)	No. 1 Vary Flex	0.29	0.01	NASA Outgassing Data for Selecting Spacecraft Materials
O-Ring & Cable Grommet (Grommet Follower & Type II Only)	70/30 Fluorosilicone/ Silicone Blend per GPS78 Grade 40	0.12	0.02	Glenair test at Pacific Testing Laboratories 6-17-2020
Cable Grommet Follower (Grommet Follower Option Only)	Ultem 2300	0.44	0.00	NASA Outgassing Data for Selecting Spacecraft Materials
Ink Marking	Markem-Imaje 7224 Series	0.41	0.04	NASA Outgassing Data for Selecting Spacecraft Materials

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