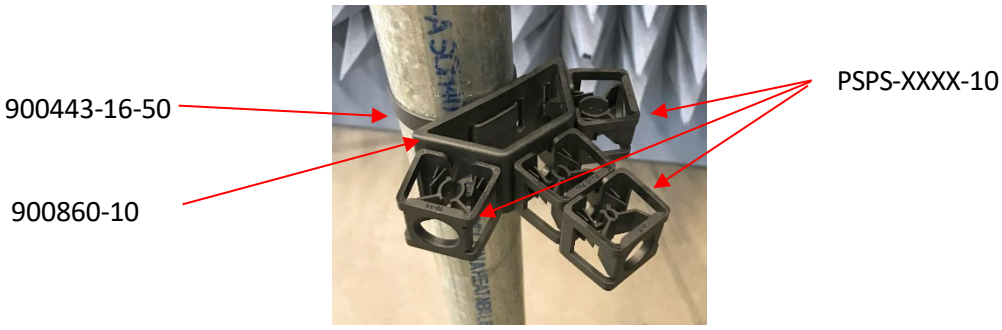
Radiated PIM Test Report

Part number(s): PSPS-0407-10, PSPS-0710-10, PSPS-1014-10, PSPS-1417-10, 900860-10

Description: PIM Shield Plastic Snap-ins and 3-position trapezoid supports provide a low passive intermodulation "all plastic" method to secure RF, fiber, power and RET cables in high risk PIM zones. The 3-position trapezoid support is secured using one PIM Shield Cable Support Strap.



Test conditions:

Tested in accordance with proposed IEC 62037-8 specification under the following test conditions:

- Object type: Non-flat
- Test type: Near Field
- Dynamic stimulus: Tap DUT with fiberglass rod while PIM testing
- Test power: 2x 43 dBm test tones
- IM product measured IM3
- Pass/Fail level: -97 dBm (-140 dBc)
- Frequency bands: 700 MHz band (F1 = 728 MHz, F2 = 754 MHz, IM3 = 780 MHz)
  1900 MHz band (F1 = 1930 MHz, F2 = 1990 MHz, IM3 = 1870 MHz)

Test distance calculations:

5.1.4.1.2	Lowest test frequency	(MHz)	**728**		**1930**	
	Wavelength	(in)	16.2		6.1	
	Galtronics D5778i	D (in)	13.8		13.8	
5.1.1	**Antenna Gain (dBi)**	**10 dBi ± 3 dB**	**8.8 dBi**		**8.6 dBi**	
	Antenna beamwidth (deg)		**60**		**60**	
				5.1.4.2		**5.1.4.2**
		Tolerance	Distance (in)	Test zone width (in)	Distance (in)	Test zone width (in)
5.1.4.1.1	FarField min (in)	0.25	19.4	22.4	60.8	70.2
	FarField nom (in)		23.5	27.1	62.3	71.9
	FarField max (in)	0.25	27.5	31.8	63.8	73.7
5.1.4.1.2	NearField min (in)	0.1	14.6	30.6	5.5	20.2
	NearField nom (in)		16.2	32.5	6.1	20.9
	NearField max (in)	0.1	17.8	34.4	6.7	21.6

Test Results Summary:

			IM3 @ 2x +43 dBm Test Power (dBm)				
Specification (dBm)	-97	Port / Band	Residual PIM	Front	R-Side	L-Side	Back
Result	PASS	M45 / 700	-112.1	-111.9	-111.9	-102.9	-110.6
		P45 / 700	-113.5	-112.5	-111.3	-112.1	-113.4
		M45 / 1900	-110.2	-110.9	-108.0	-109.8	-109.7
		P45 / 1900	-114.7	-109.6	-120.6	-114.6	-109.6

			M45 Return Loss Verification (dB)				
			Frequency	Front	R-Side	L-Side	Back
Specification (dB)	10	F1	728 MHz	18.5	17.6	17.8	17.6
Result	PASS	F2	754 MHz	17.1	17.7	17.7	17.5
		IM3	780 MHz	15.8	16.3	16.1	16.7
		IM3	1870 MHz	26.6	28.7	26.7	26.9
		F2	1930 MHz	27.2	24.0	23.6	25.3
		F1	1990 MHz	30.4	29.3	28.5	30.9

				P45 Return Loss Verification (dB)			
			Frequency	Front	R-Side	L-Side	Back
Specification (dB)	10	F1	728 MHz	18.7	21.0	20.4	21.0
Result	PASS	F2	754 MHz	17.0	18.6	18.2	19.2
		IM3	780 MHz	19.9	19.6	19.3	20.5
		IM3	1870 MHz	23.4	21.9	27.9	22.5
		F2	1930 MHz	16.7	15.8	17.5	16.4
		F1	1990 MHz	22.8	23.4	30.1	22.0

PIM Test Data: 700 MHz

Site Test Report

SITE DETAILS

Site	Sector	Feeder	Operator
PSPS XXXX 10	NA	NA	E ECONOMOU

TEST PARAMETERS

Tone 1 Frequency	Tone 2 Frequency	IM3 Frequency
728.0 MHz	757.0 MHz	786.0 MHz

TEST RESULTS

Test Point	Time	P1 P2	PIM Threshold	PIM	Peak PIM	Result
700 RES M45	2020-02-26 06:11	43.0 dBm 43.0 dBm	-100.0 dBm	-112.2 dBm	-112.1 dBm	Pass
700 FRONT M45	2020-02-26 06:17	43.0 dBm 43.0 dBm	-100.0 dBm	-111.9 dBm	-111.9 dBm	Pass
700 R SIDE M45	2020-02-26 06:20	43.0 dBm 43.0 dBm	-100.0 dBm	-112.1 dBm	-111.9 dBm	Pass
700 BACK M45	2020-02-26 06:21	43.0 dBm 43.0 dBm	-100.0 dBm	-111.4 dBm	-110.6 dBm	Pass
700 L SIDE M45	2020-02-26 06:22	43.0 dBm 43.0 dBm	-100.0 dBm	-106.3 dBm	-102.9 dBm	Pass
700 RES P45	2020-02-26 06:30	43.0 dBm 43.0 dBm	-100.0 dBm	-113.6 dBm	-113.5 dBm	Pass
700 FRONT P45	2020-02-26 06:31	43.0 dBm 43.0 dBm	-100.0 dBm	-112.6 dBm	-112.5 dBm	Pass
700 R SIDE P45	2020-02-26 06:31	43.0 dBm 43.0 dBm	-100.0 dBm	-111.5 dBm	-111.3 dBm	Pass
700 BACK P45	2020-02-26 06:32	43.0 dBm 43.0 dBm	-100.0 dBm	-114.0 dBm	-113.4 dBm	Pass
700 L SIDE P45	2020-02-26 06:33	43.0 dBm 43.0 dBm	-100.0 dBm	-112.2 dBm	-112.1 dBm	Pass

PIM Test Data: 1900 MHz

Site Test Report

SITE DETAILS

Site	Sector	Feeder	Operator
PSPS XXXX 10	NA	NA	E ECONOMOU

TEST PARAMETERS

Tone 1 Frequency	Tone 2 Frequency	IM3 Frequency
1930.0 MHz	1960.0 MHz	1900.0 MHz

TEST RESULTS

Test Point	Time	P1 P2	PIM Threshold	PIM	Peak PIM	Result
1900 RES P45	2020-02-27 07:59	43.0 dBm 43.0 dBm	-100.0 dBm	-114.8 dBm	-114.7 dBm	Pass
1900 FRONT P45	2020-02-27 08:12	43.0 dBm 43.0 dBm	-100.0 dBm	-109.8 dBm	-109.6 dBm	Pass
1900 R SIDE P45	2020-02-27 08:13	43.0 dBm 43.0 dBm	-100.0 dBm	-125.3 dBm	-120.6 dBm	Pass
1900 BACK P45	2020-02-27 08:14	43.0 dBm 43.0 dBm	-100.0 dBm	-110.1 dBm	-109.6 dBm	Pass
1900 L SIDE P45	2020-02-27 08:15	43.0 dBm 43.0 dBm	-100.0 dBm	-114.8 dBm	-114.6 dBm	Pass
1900 RES M45	2020-02-27 08:18	43.0 dBm 43.0 dBm	-100.0 dBm	-110.5 dBm	-110.2 dBm	Pass
1900 FRONT M45	2020-02-27 08:22	43.0 dBm 43.0 dBm	-100.0 dBm	-110.9 dBm	-110.9 dBm	Pass
1900 R SIDE M45	2020-02-27 08:23	43.0 dBm 43.0 dBm	-100.0 dBm	-108.2 dBm	-108.0 dBm	Pass
1900 BACK M45	2020-02-27 08:23	43.0 dBm 43.0 dBm	-100.0 dBm	-110.2 dBm	-109.7 dBm	Pass
1900 L SIDE M45	2020-02-27 08:24	43.0 dBm 43.0 dBm	-100.0 dBm	-110.2 dBm	-109.8 dBm	Pass

Test set-up photos 700 MHz:

FRONT

BACK

RIGHT SIDE

LEFT SIDE

Test set-up photos 1900 MHz:

FRONT

BACK

RIGHT SIDE

LEFT SIDE