

Remee Products Corp.

LETTER REPORT

SCOPE OF WORK

Functional performance testing of extended distance cabling systems to support IEEE Std 802.3bt™ for Type 4 remote powering applications

REPORT NUMBER

105178206CRT-001b

ISSUE DATE

26-October-2022

REVISED DATE

None

TESTS START DATE

11-October-2022

TESTS END DATE

11-October-2022

PAGES

5

DOCUMENT CONTROL NUMBER

GFT-OP-10a (6-March-2017)

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LETTER REPORT

26-October-2022

Intertek Report No. 105178206CRT-001b

Intertek Project No. G105178206

Mr. Tom Valentine
Remeo Products Corp.
1751 Route 17A
Florida, NY 10921

Subject: Performance testing of extended distance cabling configuration per IEEE 802.3bt™ for support of Type 4 remote powering applications commonly referred as PoE++

Dear Mr. Valentine:

This letter report represents the results of our evaluation of the above referenced product(s) to the requirements contained in the following document(s):

IEEE Std 802.3bt™ Standard for Ethernet, Amendment 2: Physical Layer and Management Parameters for Power Over Ethernet over 4 Pairs, Approved

SECTION 1 SUMMARY

Intertek wishes to inform you that the electrical transmission tests have been performed on your channel configuration. This testing was performed under project G105178206 and quotation Qu-01290070 issued 02-August-2022. Compliant results were obtained for the relevant tests contained in IEEE 802.3bt™ for functional power delivery and DC resistance parameters.

Test	Maximum Length
Functional power deliver of 71 W	1,000 ft
IEEE 802.3bt DC resistance parameters	850 ft

SECTION 2 NON-CONFORMANCES

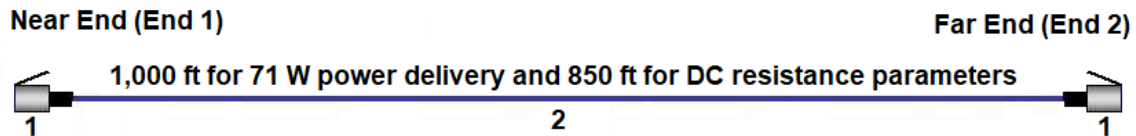
None

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SECTION 3
SAMPLE DESCRIPTION

The client supplied a 2-connector unshielded channel as illustrated below.

The samples were received on 12-September-2022 and were production samples in undamaged condition.



Component Id	Manufacturer	Description	Part number
1	Simply RJ45	Field terminable plug	S45-1755
2	Remeo	Unshielded horizontal (solid) cable	Activate CMRuTP

SECTION 4
TEST EQUIPMENT USED

The following test equipment was used to conduct the testing.

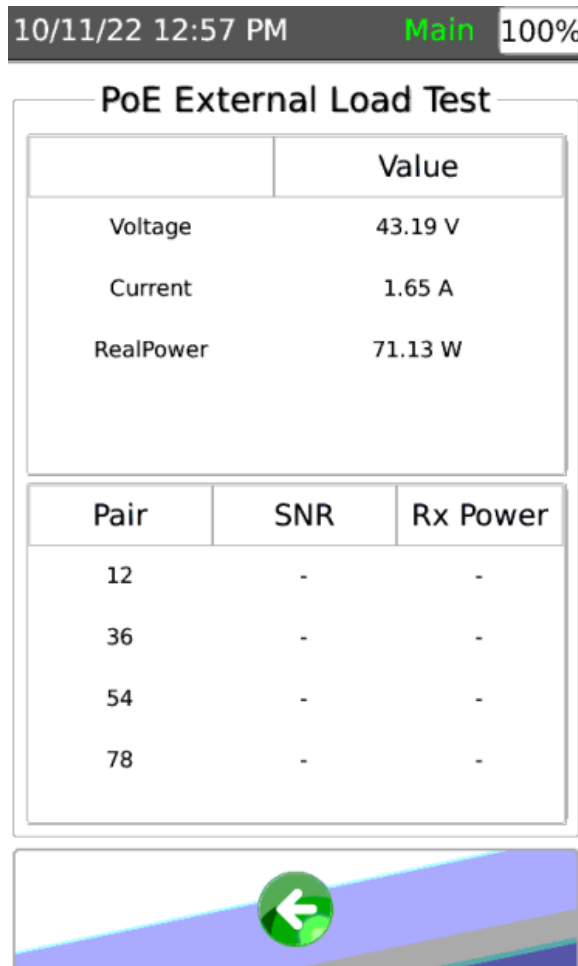
Test equipment used	Model number	Control number	Calibration due date
Keysight LCR meter	4263B	N967	07-January-2023
Omega humidity temperature meter	HH314A	T1392	09-March-2023
AEM multifunction cable tester	TestPro CV100	J388	03-November-2022
Fluke true RMS multimeter	287	I072	26-April-2023
Fluke true RMS multimeter	87	O040	27-September-2022

SECTION 5
TESTING

The tables below represent a summary of the tests and results. The DC resistance test data is enclosed to this letter report.

Test description	IEEE 802.3bt section	Result at 20°C	Result at 60°C
DC loop resistance	145.1.3	Compliant	Compliant
DC resistance unbalance within a pair	145A.1	Compliant	Compliant
DC resistance unbalance between pairs	145A.3	Compliant	Compliant
Functional power delivery	Various	Compliant	Compliant

The cabling configuration was confirmed to meet the minimum 71 W power delivery for Type 4 remote powering applications at ambient temperature. The testing was performed at 20°C ambient temperature. The functional power delivery was done using the external load function of the AEM TestPro CV100 multifunction cable tester as shown in the following screenshots.




Screenshot of functional power delivery test results at ambient temperature

SECTION 6

PROJECT STATUS & ACTION

Issuance of this letter report completes the power delivery testing of this channel cabling configuration per IEEE 802.3bt™ covered by Intertek Project No. G105178206 and quotation Qu-01290070. The test results are compliant with the requirements of the standard and sections referred to on pages 2 and 4. The testing was performed at Intertek located in Cortland, NY.

If there are any questions regarding the results contained in this report, or any of the other services offered by Intertek, please do not hesitate to contact your dedicated Intertek Project Manager.

Completed by:	David Ayers	Reviewed by:	Antoine Pelletier
Title:	Technician	Title:	Project Engineer
Signature:		Signature:	
Date:	<u>26-October-2022</u>	Date:	<u>26-October-2022</u>

Please note: this Letter Report does not represent authorization for the use of any Intertek certification marks.



Low Frequency Report

Client	Remee	Report No	105178206CRT-001b
Specification	IEEE 802-3bt Type 4		
Part No	Activate CMRuTP	Length (m)	251.5
Test Started	10/11/2022 4:22:32 PM	Temperature	20 °C
Description	2-Connector channel		
Operator Name	Craig Williams	Test Status	Complies

DC Resistance (Ohms)

45	12	36	78	Limit (Ohms)
11.5240	12.2310	11.5160	11.8270	
11.5370	12.2110	11.5050	11.8370	

Resistance Unbalanced (%)

45	12	36	78	Limit (%)
0.05	0.08	0.05	0.04	3.00

Resistance Unbalanced Pair-Pair (%)

45 - 12	45 - 36	45 - 78	12 - 36	12 - 78	36 - 78	Limit (%)
2.91	0.09	1.29	3.00	1.62	1.38	7.00

DC Loop Resistance (Ohms)

45	12	36	78	Limit (Ohms)
23.0580	24.4400	23.0180	23.6630	25.0000