Certificate of Calibration

Data Type: FOUND-LEFT **Certificate No: 2529475**

Instrument	Description	1 GHZ DSX CABLE ANALYZER
	Manufacturer	FLUKE NETWORKS
	Model	DSX-5000 INTL
	Serial Number	18390458
	Inventory Number	-
Customer	Name	JMP TELEFON PIOTR KURYLO
	City	KRAKÓW
	Site Number	5250286
Order Number	RMA Number	606238753
Environmental Conditions	Temperature within	(23 ± 3) °C
	Humidity within	(45 ± 20) %rh
Calibration Procedure	Excel Certificate and traceability procedure (3.50)	
Results	The instrument meets the manufacturers published specifications at all points measured. The results of the measurements are shown on page 3 through 5.	

Date of Calibration 06 Mar 2020

Date of Recalibration 06 Mar 2022 **Issue Date** 11 Mar 2020

Place of Calibration Son en Breugel Electronically signed by R. Kalidien

Tested by W.H.J. van Hulten **Authorized Signatory**

This calibration is performed by a DEKRA certified lab for ISO 9001:2015. All measurements are traceable to national and/or international standards or have been derived by approved ratio techniques. When possible standards used for this calibration are ISO/IEC 17025:2017 accredited calibrated. This certificate may not be reproduced other than in full. Calibration certificates without signatures, either electronic or handwritten, are not valid.

Certificate of Calibration

Data Type: FOUND-LEFT **Certificate No: 2529475**

Remarks

- The data type found in this certificate on the top of each page must be interpreted as:

As-Found	: Data collected before the unit is adjusted and / or repaired
As-Left	: Data collected after the unit has been adjusted and / or repaired
Found-Left	: Data collected without any adjustment and / or repair performed

- If the unit under test is used under rough conditions we recommend to decrease the calibration interval period, the calibration interval (due date) is the responsibility of the end user;

- According to the European norm 'Operation of electrical installations' NEN-EN 50110-1 release 2013 and the Dutch norm NEN 3140 release 2015 paragraph 5.102.12 through 5.102.16, a safety test is not required. Therefore not performed.

Standards and test-equipment used for this calibration:

Model	Serial No	Inventory No	Due to	Certificate No
DSX-CALVERST//FLKN	E000061	WP2390	25 Jul 2020	EVL561517

Found-Left Report

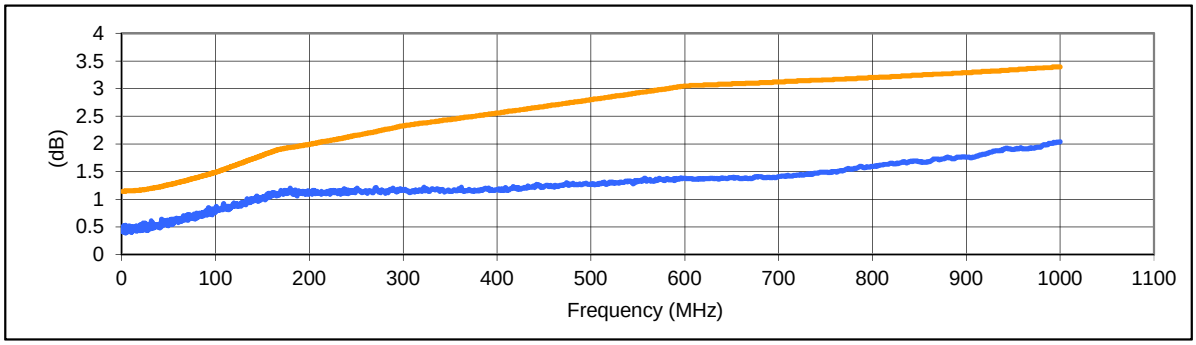
Model **DSX-5000 CAT 6A/CLASS Fa 1000MHz Copper Module**

Serial Number **18390458**

Test date 6-Mar-20

NEXT

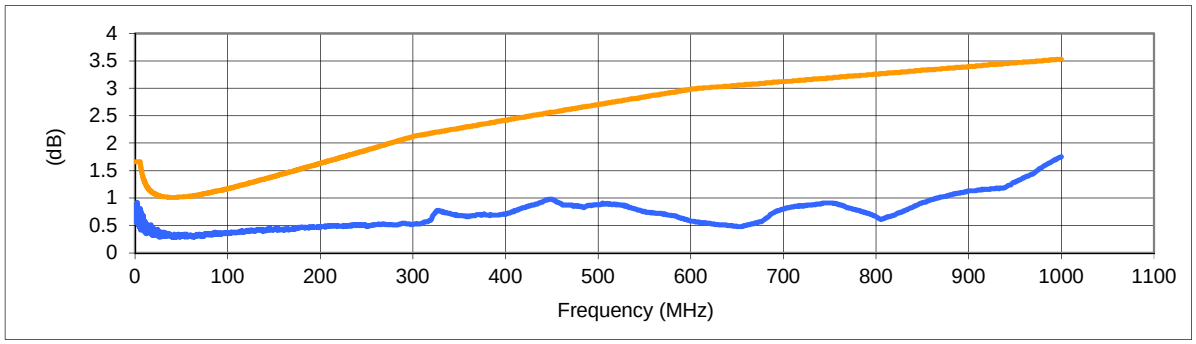
NEXT Artifact SN 2820137



Pass Worst margin: 0.590 at 31.5 MHz in pair 12-78. Worst accuracy at each frequency shown.

CDNEXT

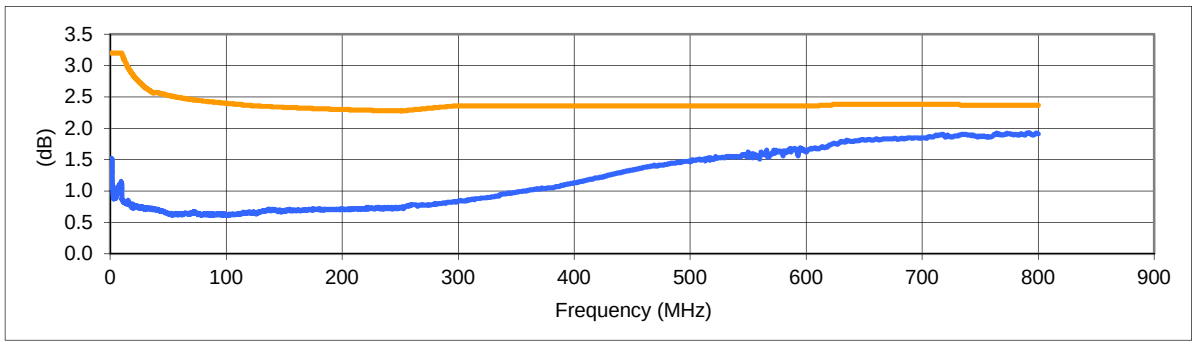
CDNEXT Artifact SN 2843465



Pass Worst margin: 0.610 at 17.25 MHz in pair 36-12. Worst accuracy at each frequency shown.

CMRL

CMDMRL Artifact SN 2856124



Pass Worst margin: 0.440 at 792 MHz in pair 12. Worst accuracy at each frequency shown.

Measured difference of DSX and reference laboratory equipment added to measurement accuracy of reference laboratory equipment. Worst accuracy at each frequency shown.

Corresponding measurement accuracy requirement for nominally compliant Level IV or Level 2G/VI field tester.

Found-Left Report

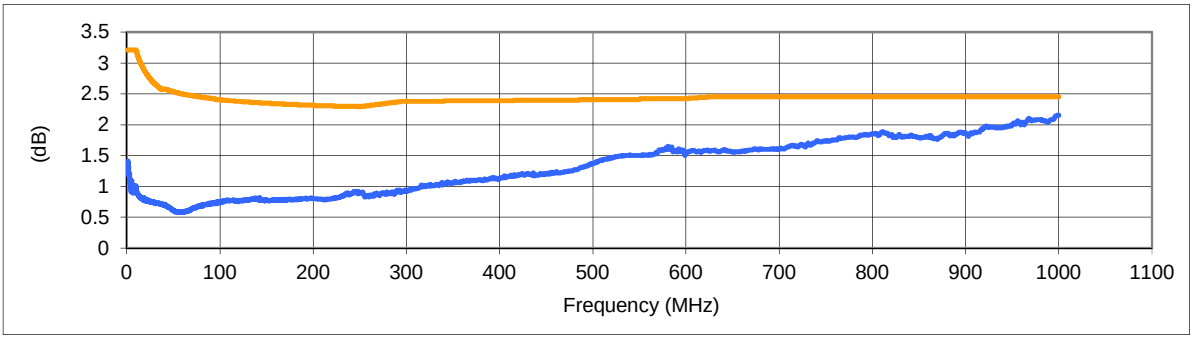
Model **DSX-5000 CAT 6A/CLASS Fa 1000MHz Copper Module**

Serial Number **18390458**

Test date 6-Mar-20

RL

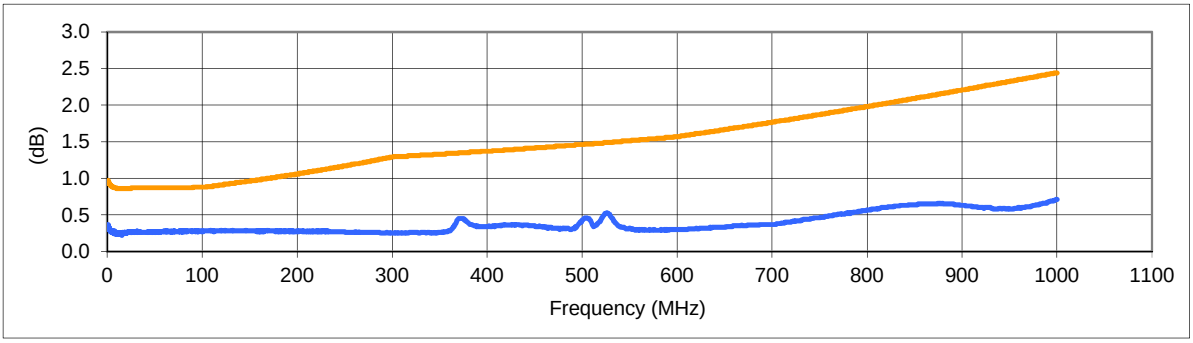
CMDMRL Artifact SN 2856124



Pass Worst margin: 0.300 at 998 MHz in pair 45. Worst accuracy at each frequency shown.

TCL

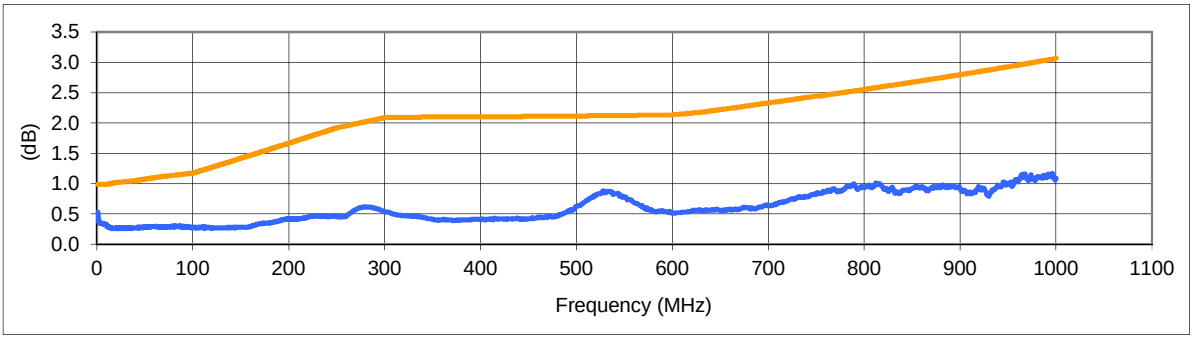
TCL Artifact SN 2856287



Pass Worst margin: 0.590 at 7.75 MHz in pair 36. Worst accuracy at each frequency shown.

IL

ILFEXT Artifact SN 2856321



Pass Worst margin: 0.460 at 1 MHz in pair 78. Worst accuracy at each frequency shown.

Measured difference of DSX and reference laboratory equipment added to measurement accuracy of reference laboratory equipment. Worst accuracy at each frequency shown.

Corresponding measurement accuracy requirement for nominally compliant Level IV or Level 2G/VI field tester.

Found-Left Report

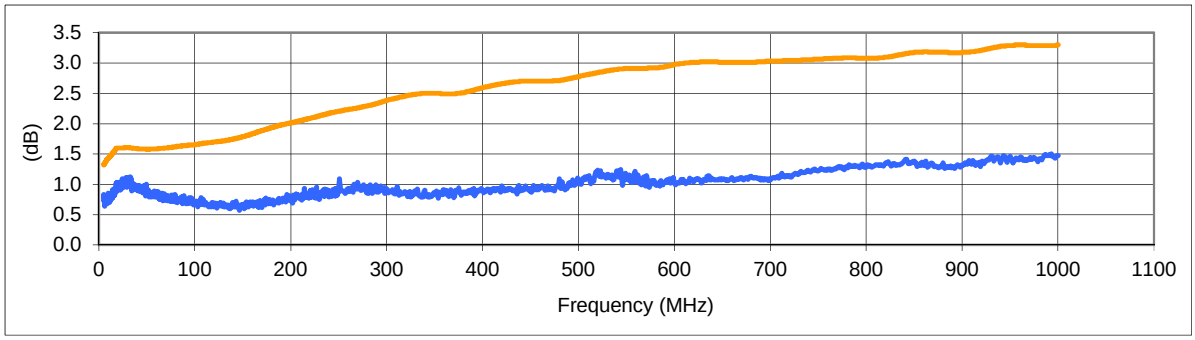
Model **DSX-5000 CAT 6A/CLASS Fa 1000MHz Copper Module**

Serial Number **18390458**

Test date 6-Mar-20

FEXT

ILFEXT Artifact SN 2856321



Pass Worst margin: 0.480 at 32.5 MHz in pair 36-78. Worst accuracy at each frequency shown.

Measured difference of DSX and reference laboratory equipment added to measurement accuracy of reference laboratory equipment. Worst accuracy at each frequency shown.

Corresponding measurement accuracy requirement for nominally compliant Level IV or Level 2G/VI field tester.

Loop Resistance

Loop Resistance Artifact SN 2860462

	Measured	Expected	Limit	
Resistance on pair 12	0.15	0.00	0.80	Pass
Resistance on pair 36	50.01	49.80	0.60	Pass
Resistance on pair 45	99.98	99.80	1.60	Pass
Resistance on pair 78	453.04	453.00	4.00	Pass

Resistance imbalance

Resistance Unbalance Artifact SN 2860566

	Measured	Expected	Limit	
Resistance on pair 12	0.19	0.00	0.80	Pass
Resistance on pair 36	25.14	24.90	0.90	Pass
Resistance on pair 45	12.37	12.13	0.90	Pass
Resistance on pair 78	24.23	24.05	0.90	Pass
Resistance imbalance on pair 12	0.01	0.00	0.05	Pass
Resistance imbalance on pair 36	0.00	0.00	0.13	Pass
Resistance imbalance on pair 45	0.33	0.32	0.06	Pass
Resistance imbalance on pair 78	0.84	0.85	0.12	Pass

DSX-8000 only: M_IL and M_FEXT measurements validate the ability of the DSX-8000 to make measurements with DSX-5000 adapters.

M IL

Not applicable

M_ILFEXT Artifact SN -

M FEXT

Not applicable

M_ILFEXT Artifact SN -

Test Program TFSTest v2.5.7025

DSX Report Form v3.05 18-May-2017