

	Farran Technology Ltd., Unit 1 Airport East Technology Park, Farmers Cross, Co. Cork, Ireland.	
Certificate of Calibration Certificate No : FCC 10312		
Model#: FS-Z90	S/N: 757569/011	Cal Freq: 60-90GHz
<p>Calibration Date : 23-08-2018 As Shipped Condition : On completion of testing, measurement points within specification</p> <p>Comments: Unit calibrated to spec, results on file. Measurement Uncertainty: +/-1.5dB Customer : RISE Research Institute of Sweden AB Brinellgatan 4 504 62 Boras Schweden</p> <p>Location of Calibration: Farran Technology</p> <p>Certified By: Michael Crowley Date 23/08/2018</p> <p>Signature</p> <p>This calibration certificate documents, that the named item is tested and measured against defined specifications. Measurement results are located usually in the corresponding interval with a probability of approx 95% (coverage factor k=2). Calibration is performed with test equipment and standards directly or indirectly traceable by means of approved calibration techniques to the PTB/DKD or other national / international standards, which realize the physical units of measurement according to the International System of Units (SI). Principals and methods of calibration correspond and are conformant with EN ISO/IEC 17025 and ANSI/NCSL Z540-1-1994. The applied quality system is certified to EN ISO 9001. This calibration certificate may not be reproduced other than in full. Calibration certificates without signatures are not valid. The user is obliged to have the object recalibrated at appropriate intervals.</p>		

Calibration Procedure No: STP 27				
Calibration Equipment used:				
Description:	Model No:	S/N:	Certificate No.	Cal Due
Agilent Spectrum Analyzer	8563E	3846A09627	1-9030600322-14	July 2019
Agilent Power Meter	E4418A	GB38273183	1-9030600322-4	July 2019
Agilent Power Sensor	8481A	3318A94748	1-9030600322-25	July 2019
Agilent Power Sensor	V8486A	MY44420202	1-9306855147-1	Nov 2019
Agilent Power Sensor	W8486A	3318A00477	1-9306855147-2	Nov 2019
Agilent Synthesized Generator	E8247B	MY43320714	1-9030600322-24	July 2019
Agilent Synthesized Generator	83712B	US37100716	1-9030600322-10	July 2019

Conversion Loss Data for Harmonic Mixer FS-Z90 (60 .. 90 GHz)

(Order No. 8800000960/53JW/L6)

Revision 1.30

Ser. No. 757569/011

Conversion loss data valid for following operating conditions:

IF 741,4 MHz (valid for 404,4 MHz and 729,9 MHz too)
 Order of Harmonic 6
 LO frequency range 10.12 to
15.12GHz
+15.5dBm
 LO level nominal
 Bias 0 mA

Frequency / GHz	Conversion Loss / dB	Frequency / GHz	Conversion Loss / dB
60.00	-23.35	75.31	-28.55
60.61	-22.46	75.92	-28.91
61.22	-22.12	76.53	-29.07
61.84	-22.37	77.14	-29.43
62.45	-22.55	77.76	-30.37
63.06	-22.60	78.37	-31.81
63.67	-23.08	78.98	-33.06
64.29	-24.05	79.59	-34.16
64.90	-25.32	80.20	-34.92
65.51	-25.92	80.82	-36.62
66.12	-26.22	81.43	-36.34
66.74	-27.74	82.04	-35.60
67.35	-27.70	82.65	-35.13
67.96	-26.20	83.27	-35.00
68.57	-25.67	83.88	-34.92
69.18	-25.23	84.49	-35.30
69.80	-24.52	85.10	-34.89
70.41	-24.49	85.71	-34.16
71.02	-24.90	86.33	-33.66
71.63	-25.41	86.94	-33.45
72.25	-26.09	87.55	-32.75
72.86	-26.47	88.16	-32.20
73.47	-27.26	88.78	-31.49
74.08	-27.90	89.39	-30.73
74.69	-28.66	90.00	-30.24