

ASSP Mobile Communication Systems

Piezoelectric SAW BPF (700 to 1000MHz)

F5CH Series (L2 Type)

DESCRIPTION

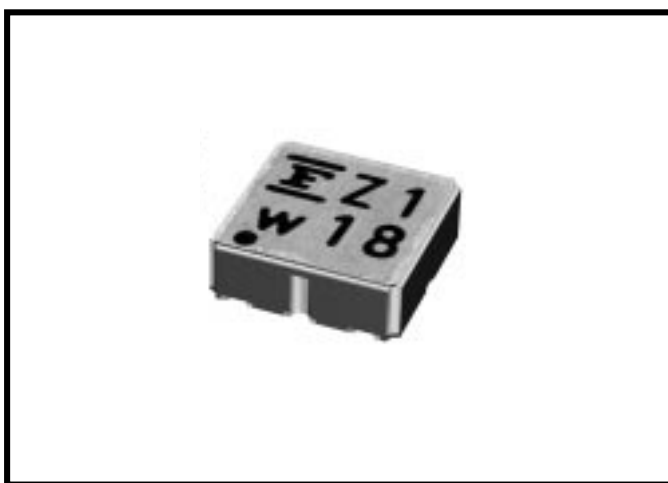
The F5CH series of SAW bandpass filters apply to the frequency range 700-1000MHz. The SAW filters are fabricated on a lithium tantalate (LiTaO₃) substrate, producing filters with a wide frequency bandwidth, low insertion loss in passband and superior stability due to the high electromechanical coupling coefficient of the material. The F5CH series filters are housed in a small surface mount package. Moreover, the impedance in the passband is 50 ohms, and so applications require no external matching circuits.

The F5CH series SAW filters are suitable for interstage RF filtering in mobile communications systems in the frequency range 700-1000MHz. Standard devices are available for AMPS, ETACS, GSM, EGSM, PDC and so on.

FEATURES

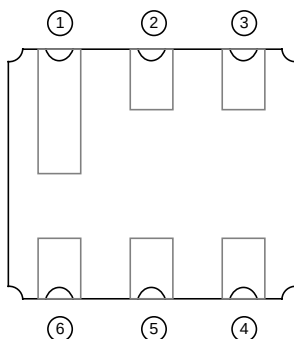
- Low insertion loss and high attenuation
- High handling power (0.2 Watt)
- Ultra compact and light package (3.8mm[□])
- External matching circuits are not required
- Surface mount package (SMT)
- Wide variety of standard devices for worldwide mobile communication systems (AMPS, GSM, EGSM, ETACS, PDC800, NTACS, 2 Way Pager, etc.)

PACKAGE



PIN ASSIGNMENT

(Bottom view)



Pin No.	PinName	Description
1	GND	Ground Pin
2	IN	Input pin
3	GND	Ground Pin
4	GND	Ground Pin
5	OUT	Output Pin
6	GND	Ground Pin

MAXIMUM RATINGS

Item	Symbol	Rating	Unit
Operating Temperature	Ta	-30 to +70	°C
Storage Temperature	Tstg	-40 to +100	
Maximum input level	Pin	+200	mW
Frequency range	-	+700 to +1000	MHz

Note: These are also the Recommended Operating Conditions

WARNING: Permanent device damage may occur if the above **Absolute Maximum Ratings** are exceeded. Functional operation should be restricted to the conditions as detailed in the operational sections of this data sheet. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

STANDARD FREQUENCIES

System		Center freq. (MHz)	BW(MHz)	Part Symbol	Part number	Remarks
AMPS/ADC	Tx	836.5	25	AL	FAR-F5CH-836M50-L2AL	
				AW	FAR-F5CH-836M50-L2AW	High Att. type
	Rx	881.5	25	AM	FAR-F5CH-881M50-L2AM	
				AV	FAR-F5CH-881M50-L2AV	High Att. type
ETACS	Tx	888.5	33	CL	FAR-F5CH-888M50-L2CL	
				CW	FAR-F5CH-888M50-L2CW	High Att. type
	Rx	933.5	33	CM	FAR-F5CH-933M50-L2CM	
NTACS	Tx	911.5	27	DL	FAR-F5CH-911M50-L2DL	
	Rx	856.5	27	DM	FAR-F5CH-856M50-L2DM	
GSM/NMT	Tx	902.5	25	EW	FAR-F5CH-902M50-L2EW	High Att. type
	Rx	947.5	25	EM	FAR-F5CH-947M50-L2EM	
				EV	FAR-F5CH-947M50-L2EV	High Att. type
EGSM	Tx	897.5	35	KL	FAR-F5CH-897M50-L2KL	
	Rx	942.5	35	KM	FAR-F5CH-942M50-L2KM	
				KV	FAR-F5CH-942M50-L2KV	High Att. type
PDC800	Tx	950.0	20	FW	FAR-F5CH-950M00-L2FW	High Att. type
	Rx	820.0	20	FM	FAR-F5CH-820M00-L2FM	
				FV	FAR-F5CH-820M00-L2FV	High Att. type
DUAL BAND PDC800	Tx	935.5	41	MA	FAR-F5CH-935M50-L2MA	
		941.5	33	MD	FAR-F5CH-940M50-L2MD	High Att. type
ISM900	-	915.0	26	JW	FAR-F5CH-915M00-L2JW	High Att. type
N-PCS (2WAY PAGER)	Rx	935.0	12	LD	FAR-F5CH-935M00-L2LD	

ELECTRICAL CHARACTERISTICS (STANDARD VERSION)

1. AMPS / ADC (Tx)

Part number : FAR-F5CH-836M50-L2AL

(T_a = -30 to 85°C)

Item	Symbol	Conditions	Rating			Unit	Remarks
			Min.	Typ.	Max.		
Insertion Loss	IL	824 - 849 MHz	-	1.6	2.5	dB	
Inband Ripple		824 - 849 MHz	-	1.0	2.0	dB	
Absolute Attenuation		869 - 894 MHz	20	2.5	-	dB	
Inband VSWR		824 - 849 MHz	-	1.8	2.0	-	

2. AMPS / ADC (Tx) HIGH ATTENUATION TYPE

Part number : FAR-F5CH-836M50-L2AW

(T_a = -30 to 85°C)

Item	Symbol	Conditions	Rating			Unit	Remarks
			Min.	Typ.	Max.		
Insertion Loss	IL	824 - 849 MHz	-	2.6	3.5	dB	
Inband Ripple		824 - 849 MHz	-	1.0	2.0	dB	
Absolute Attenuation		DC - 800 MHz	28	31	-	dB	
		869 - 1049 MHz	30	38	-	dB	
		1049 - 2000 MHz	25	30	-	dB	
Inband VSWR		824 - 849 MHz	-	1.8	2.5	-	

3. AMPS / ADC (Rx)

Part number : FAR-F5CH-881M50-L2AM

(T_a = -30 to 85°C)

Item	Symbol	Conditions	Rating			Unit	Remarks
			Min.	Typ.	Max.		
Insertion Loss	IL	869 - 894 MHz	-	2.5	3.5	dB	
Inband Ripple		869 - 894 MHz	-	1.0	2.0	dB	
Absolute Attenuation		DC - 849 MHz	20	24	-	dB	
		914 - 939 MHz	20	30	-	dB	
		939 - 1049 MHz	25	30	-	dB	
		1049 - 2000 MHz	20	23	-	dB	
Inband VSWR		869 - 894 MHz	-	1.8	2.0	-	

4. AMPS / ADC (Rx) HIGH ATTENUATION TYPE

Part number : FAR-F5CH-881M50-L2AV

(T_a = -30 to 85°C)

Item	Symbol	Conditions	Rating			Unit	Remarks
			Min.	Typ.	Max.		
Insertion Loss	IL	869 ~ 894 MHz	-	3.0	3.5	dB	
Inband Ripple		869 ~ 894 MHz	-	1.0	2.0	dB	
Absolute Attenuation		DC ~ 779 MHz	25	33	-	dB	
		779 ~ 849 MHz	35	40	-	dB	
		914 ~ 939 MHz	20	30	-	dB	
		939 ~ 1049 MHz	40	42	-	dB	
		1049 ~ 2000 MHz	25	30	-	dB	
Inband VSWR		869 ~ 894 MHz	-	1.7	2.0	-	

F5 Series (L2 Type)



5. ETACS (Tx)

Part number : FAR-F5CH-888M50-L2CL

(T_a = -30 to 85°C)

Item	Symbol	Conditions	Rating			Unit	Remarks
			Min.	Typ.	Max.		
Insertion Loss	IL	872 ~ 905 MHz	-	3.0	5.0	dB	
Inband Ripple		872 ~ 905 MHz	-	1.5	-	dB	
Absolute Attenuation		917 ~ 950 MHz	10	15	-	dB	
Inband VSWR		872 ~ 905 MHz	-	2.0	2.5	-	

6. ETACS (Tx) HIGH ATTENUATION TYPE

Part number : FAR-F5CH-888M50-L2CW

(T_a = -30 to 85°C)

Item	Symbol	Conditions	Rating			Unit	Remarks
			Min.	Typ.	Max.		
Insertion Loss	IL	872 - 905 MHz	-	3.8	5.5	dB	
Inband Ripple		872 - 905 MHz	-	2.0	-	dB	
Absolute Attenuation		DC - 850 MHz	30	34	-	dB	
		917 - 925 MHz	10	15	-	dB	
		925 - 950 MHz	20	30	-	dB	
		950 - 1100 MHz	35	45	-	dB	
		1100 - 2000 MHz	25	30	-	dB	
Inband VSWR		872 - 905 MHz	-	2.0	2.5	-	

7. ETACS (Rx)

Part number : FAR-F5CH-933M50-L2CM

(T_a = -30 to 85°C)

Item	Symbol	Conditions	Rating			Unit	Remarks
			Min.	Typ.	Max.		
Insertion Loss	IL	917 - 950 MHz	-	3.8	5.5	dB	
Inband Ripple		917 - 950 MHz	-	2.0	-	dB	
Absolute Attenuation		DC - 900 MHz	30	34	-	dB	
		900 - 905 MHz	10	15	-	dB	
		1007 - 1040 MHz	35	40	-	dB	
		1040 - 2000 MHz	25	30	-	dB	
Inband VSWR		917 - 950 MHz	-	2.0	2.5	-	

F5 Series (L2 Type)



8. NTACS (Tx)

Part number : FAR-F5CH-911M50-L2DL

(T_a = -30 to 85°C)

Item	Symbol	Conditions	Rating			Unit	Remarks
			Min.	Typ.	Max.		
Insertion Loss	IL	898 - 925 MHz	-	2.6	3.5	dB	
Inband Ripple		898 - 925 MHz	-	1.0	2.0	dB	
Absolute Attenuation		843 - 870 MHz	30	32	-	dB	
Inband VSWR		898 - 925 MHz	-	1.6	2.0	-	

9. NTACS (Rx)

Part number : FAR-F5CH-856M50-L2DM

(T_a = -30 to 85°C)

Item	Symbol	Conditions	Rating			Unit	Remarks
			Min.	Typ.	Max.		
Insertion Loss	IL	843 - 870 MHz	-	2.5	3.5	dB	
Inband Ripple		843 - 870 MHz	-	1.0	2.0	dB	
Absolute Attenuation		DC - 733 MHz	23	25	-	dB	
		733 - 760 MHz	35	37	-	dB	
		760 - 815 MHz	25	33	-	dB	
		898 - 953 MHz	30	35	-	dB	
		953 - 980 MHz	35	40	-	dB	
		980 - 1100 MHz	25	35	-	dB	
		1100 - 2000 MHz	20	24	-	dB	
Inband VSWR		843 - 870 MHz	-	1.8	2.5	-	

F5 Series (L2 Type)



10. GSM/NMT (Tx) HIGH ATTENUATION TYPE

Part number : FAR-F5CH-902M50-L2EW

(T_a = -30 to 85°C)

Item	Symbol	Conditions	Rating			Unit	Remarks
			Min.	Typ.	Max.		
Insertion Loss	IL	890 - 915 MHz	-	2.9	3.5	dB	
Inband Ripple		890 - 915 MHz	-	1.0	2.0	dB	
Absolute Attenuation		DC - 845 MHz	32	34	-	dB	
		845 - 870 MHz	20	35	-	dB	
		935 - 980 MHz	20	35	-	dB	
		980 - 1200 MHz	35	40	-	dB	
		1200 - 2000 MHz	25	30	-	dB	
Inband VSWR		890 - 915 MHz	-	1.6	2.0	-	

11. GSM/NMT (Rx)

Part number : FAR-F5CH-947M50-L2EM

(T_a = -30 to 85°C)

Item	Symbol	Conditions	Rating			Unit	Remarks
			Min.	Typ.	Max.		
Insertion Loss	IL	935 - 960 MHz	-	2.5	3.5	dB	
Inband Ripple		935 - 960 MHz	-	1.0	2.0	dB	
Absolute Attenuation		DC - 800 MHz	20	25	-	dB	
		890 - 915 MHz	20	35	-	dB	
		980 - 1025 MHz	15	28	-	dB	
		1025 - 1105 MHz	35	38	-	dB	
		1105 - 1600 MHz	25	29	-	dB	
		1600 - 2000 MHz	20	26	-	dB	
Inband VSWR		935 - 960 MHz	-	1.7	2.5	-	

12. GSM/NMT (Rx) HIGH ATTENUATION TYPE

Part number : FAR-F5CH-947M50-L2EV

(T_a = -30 to 85°C)

Item	Symbol	Conditions	Rating			Unit	Remarks
			Min.	Typ.	Max.		
Insertion Loss	IL	935 - 960 MHz	-	2.8	3.5	dB	
Inband Ripple		935 - 960 MHz	-	1.0	2.0	dB	
Absolute Attenuation		DC - 770 MHz	32	34	-	dB	
		770 - 855 MHz	35	38	-	dB	
		855 - 871 MHz	40	43	-	dB	
		890 - 915 MHz	20	30	-	dB	
		980 - 1025 MHz	15	25	-	dB	
		1025 - 1077 MHz	40	46	-	dB	
		1077 - 1105 MHz	43.5	47	-	dB	
		1105 - 2000 MHz	25	30	-	dB	
		2000 - 3000 MHz	10	12	-	dB	
Inband VSWR		935 - 960 MHz	-	1.6	2.0	-	

F5 Series (L2 Type)

13. EGSM (Tx)

Part number : FAR-F5CH-897M50-L2KL

(T_a = -20 to 85°C)

Item	Symbol	Conditions	Rating			Unit	Remarks
			Min.	Typ.	Max.		
Insertion Loss	IL	880 - 915 MHz	-	2.4	4.0	dB	
Inband Ripple		880 - 915 MHz	-	1.0	2.0	dB	
Absolute Attenuation		DC - 845 MHz	20	21	-	dB	
		925 - 935 MHz	5	-	-	dB	-30 to +25°C
			8	10	-	dB	+25 to +80°C
		935 - 980 MHz	20	25	-	dB	
Inband VSWR		880 - 915 MHz	-	1.9	2.5	-	

14. EGSM (Rx)

Part number : FAR-F5CH-942M50-L2KM

(T_a = -20 to 85°C)

Item	Symbol	Conditions	Rating			Unit	Remarks
			Min.	Typ.	Max.		
Insertion Loss	IL	925 - 960 MHz	-	3.2	4.0	dB	
Inband Ripple		925 - 960 MHz	-	1.0	2.0	dB	
Absolute Attenuation		DC - 619 MHz	25	26	-	dB	
		619 - 905 MHz	26	27	-	dB	
		905 - 915 MHz	10	20	-	dB	-30 to +25°C
			7	-	-	dB	+25 to +80°C
		980 - 1200 MHz	20	30	-	dB	
		1200 - 2000 MHz	25	27	-	dB	
Inband VSWR		925 - 960 MHz	-	2.0	2.5	-	

15. EGSM (Rx) HIGH ATTENUATION TYPE

Part number : FAR-F5CH-942M50-L2KV

(T_a = -20 to 85°C)

Item	Symbol	Conditions	Rating			Unit	Remarks
			Min.	Typ.	Max.		
Insertion Loss	IL	925 - 960 MHz	-	3.0	5.0	dB	
Inband Ripple		925 - 960 MHz	-	1.5	2.5	dB	
Absolute Attenuation		DC - 619 MHz	30	34	-	dB	
		619 - 905 MHz	30	35	-	dB	
		905 - 915 MHz	8	10	-	dB	-30 to +25°C
			6	-	-	dB	+25 to +80°C
		980 - 1200 MHz	20	30	-	dB	
		1200 - 2000 MHz	30	31	-	dB	
Inband VSWR		925 - 960 MHz	-	2.4	2.7	-	

F5 Series (L2 Type)



16. PDC800 (Tx) HIGH ATTENUATION TYPE

Part Number: FAR-F5CH-950M00-L2FW

(T_a = -30 to 85°C)

Item	Symbol	Conditions	Rating			Unit	Remarks
			Min.	Typ.	Max.		
Insertion Loss	IL	940 - 960 MHz	-	2.8	3.5	dB	
Inband Ripple		940 - 960 MHz	-	1.0	2.0	dB	
Absolute Attenuation		DC - 680 MHz	30	34	-	dB	
		680 - 696 MHz	33	36	-	dB	
		810 - 830 MHz	40	44	-	dB	
		1015 - 1106 MHz	40	45	-	dB	
		1106 - 2000 MHz	30	34	-	dB	
Inband VSWR		940 - 960 MHz	-	1.6	2.0	-	

17. PDC800 (Rx)

Part Number: FAR-F5CH-820M00-L2FM

(T_a = -30 to 85°C)

Item	Symbol	Conditions	Rating			Unit	Remarks
			Min.	Typ.	Max.		
Insertion Loss	IL	810 - 830 MHz	-	1.8	2.5	dB	
Inband Ripple		810 - 830 MHz	-	1.0	1.5	dB	
Absolute Attenuation		DC - 680 MHz	20	24	-	dB	
		680 - 700 MHz	25	29	-	dB	
		875 - 940 MHz	25	30	-	dB	
		940 - 1070 MHz	30	32	-	dB	
		1070 - 1090 MHz	35	37	-	dB	
		1090 - 2000 MHz	20	24	-	-	
Inband VSWR		810 - 830 MHz	-	1.8	2.0	-	

18. PDC800 (Rx) HIGH ATTENUATION TYPE

Part Number: FAR-F5CH-820M00-L2FV

(T_a = -30 to 85°C)

Item	Symbol	Conditions	Rating			Unit	Remarks
			Min.	Typ.	Max.		
Insertion Loss	IL	810 - 830 MHz	-	3.0	3.5	dB	
Inband Ripple		810 - 830 MHz	-	1.5	2.0	dB	
Absolute Attenuation		DC - 130 MHz	35	40	-	dB	
		130 - 760 MHz	30	33	-	dB	
		855 - 875 MHz	25	35	-	dB	
		875 - 920 MHz	40	42	-	dB	
		920 - 1090 MHz	35	40	-	dB	
		1090 - 2000 MHz	25	30	-	-	
Inband VSWR		810 - 830 MHz	-	2.0	2.5	-	

F5 Series (L2 Type)



19. DUAL BAND PDC800 (Tx) BW; 41MHz

Part Number: FAR-F5CH-935M50-L2MA

(T_a = -30 to 85°C)

Item	Symbol	Conditions	Rating			Unit	Remarks
			Min.	Typ.	Max.		
Insertion Loss	IL	915 - 956 MHz	-	2.5	3.5	dB	
Inband Ripple		915 - 956 MHz	-	1.0	2.0	dB	
Absolute Attenuation		DC - 770 MHz	17	20	-	dB	
		770 - 890 MHz	20	22	-	dB	
		1000 - 1065 MHz	22	24	-	dB	
		1065 - 1250 MHz	24	26	-	dB	
		1250 - 2000 MHz	19	23	-	dB	
Inband VSWR		915 - 956 MHz	-	2.3	2.8	-	

20. DUAL BAND PDC800 (Tx) BW; 33MHz HIGH ATTENUATION TYPE

Part Number: FAR-F5CH-940M50-L2MD

(T_a = -30 to 85°C)

Item	Symbol	Conditions	Rating			Unit	Remarks
			Min.	Typ.	Max.		
Insertion Loss	IL	925 - 958 MHz	-	2.7	3.5	dB	
Inband Ripple		925 - 958 MHz	-	1.2	2.0	dB	
Absolute Attenuation		DC - 775 MHz	23	26	-	dB	
		775 - 885 MHz	30	33	-	dB	
		1000 - 1033 MHz	30	38	-	dB	
		1075 - 1108 MHz	35	40	-	dB	
		1150 - 1183 MHz	35	42	-	dB	
		1225 - 1258 MHz	32	35	-	-	
		1258 - 2000 MHz	20	25	-	-	
Inband VSWR		925 - 958 MHz	-	2.1	2.5	-	

F5 Series (L2 Type)



21. ISM900 HIGH ATTENUATION TYPE

Part Number: FAR-F5CH-915M00-L2JW

(T_a = -30 to 85°C)

Item	Symbol	Conditions	Rating			Unit	Remarks
			Min.	Typ.	Max.		
Insertion Loss	IL	902 - 928 MHz	-	3.0	3.5	dB	
Inband Ripple		902 - 928 MHz	-	1.5	2.0	dB	
Absolute Attenuation		DC - 800 MHz	25	27	-	dB	
		800 - 880 MHz	20	30	-	dB	
		950 - 1080 MHz	30	40	-	dB	
		1080 - 2000 MHz	20	24	-	dB	
Inband VSWR		902 - 928 MHz	-	2.0	2.5	-	

22. 2 WAY PAGER (Rx)

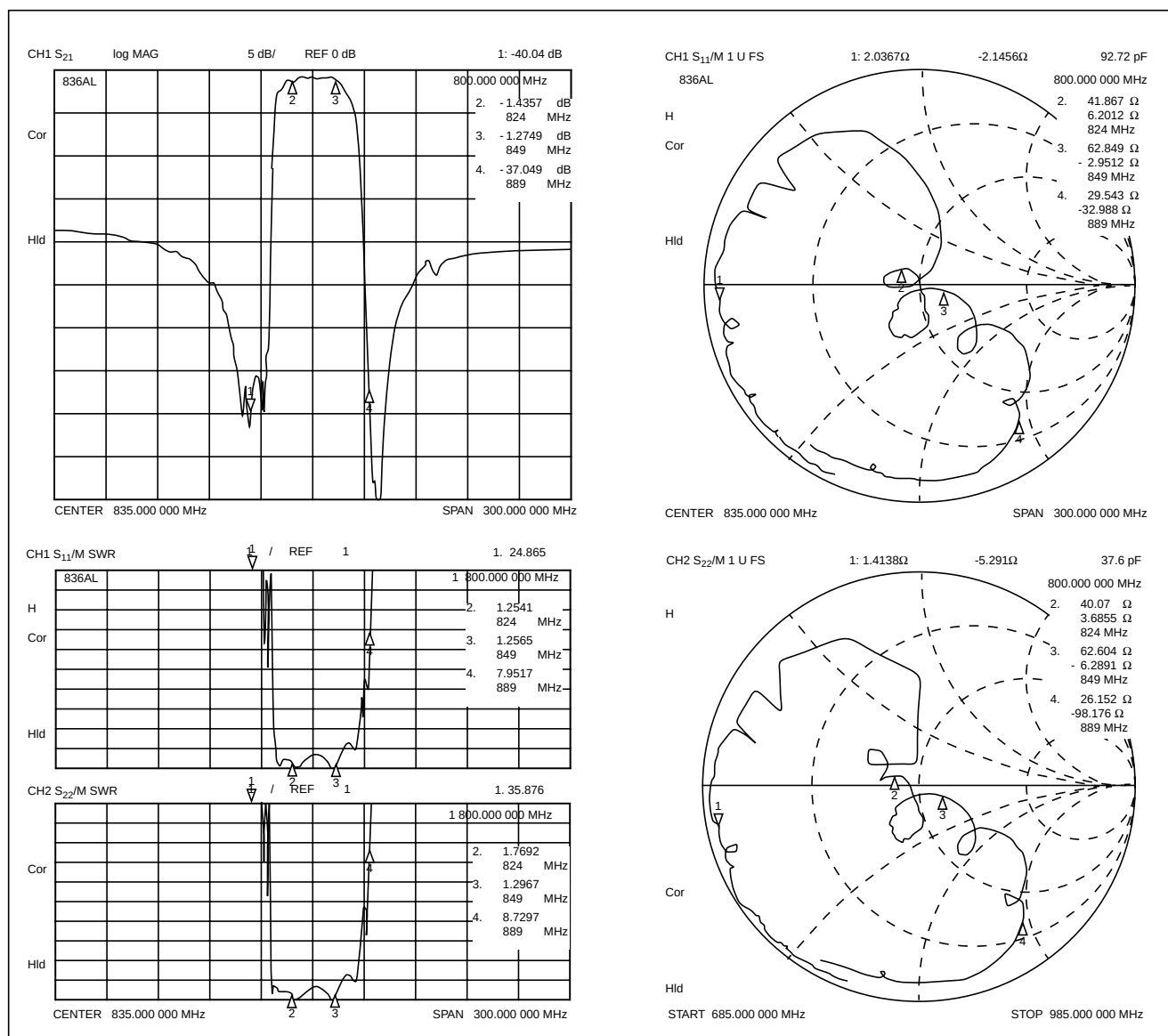
Part Number: FAR-F5CH-935M00-L2LD

(T_a = -30 to 85°C)

Item	Symbol	Conditions	Rating			Unit	Remarks
			Min.	Typ.	Max.		
Insertion Loss	IL	929 - 941 MHz	-	2.3	3.0	dB	
Inband Ripple		929 - 941 MHz	-	0.5	1.0	dB	
Absolute Attenuation		839 - 851 MHz	40	43	-	dB	
		1019 - 1031 MHz	40	44	-	dB	
Inband VSWR		929 - 941 MHz	-	1.3	2.5	-	

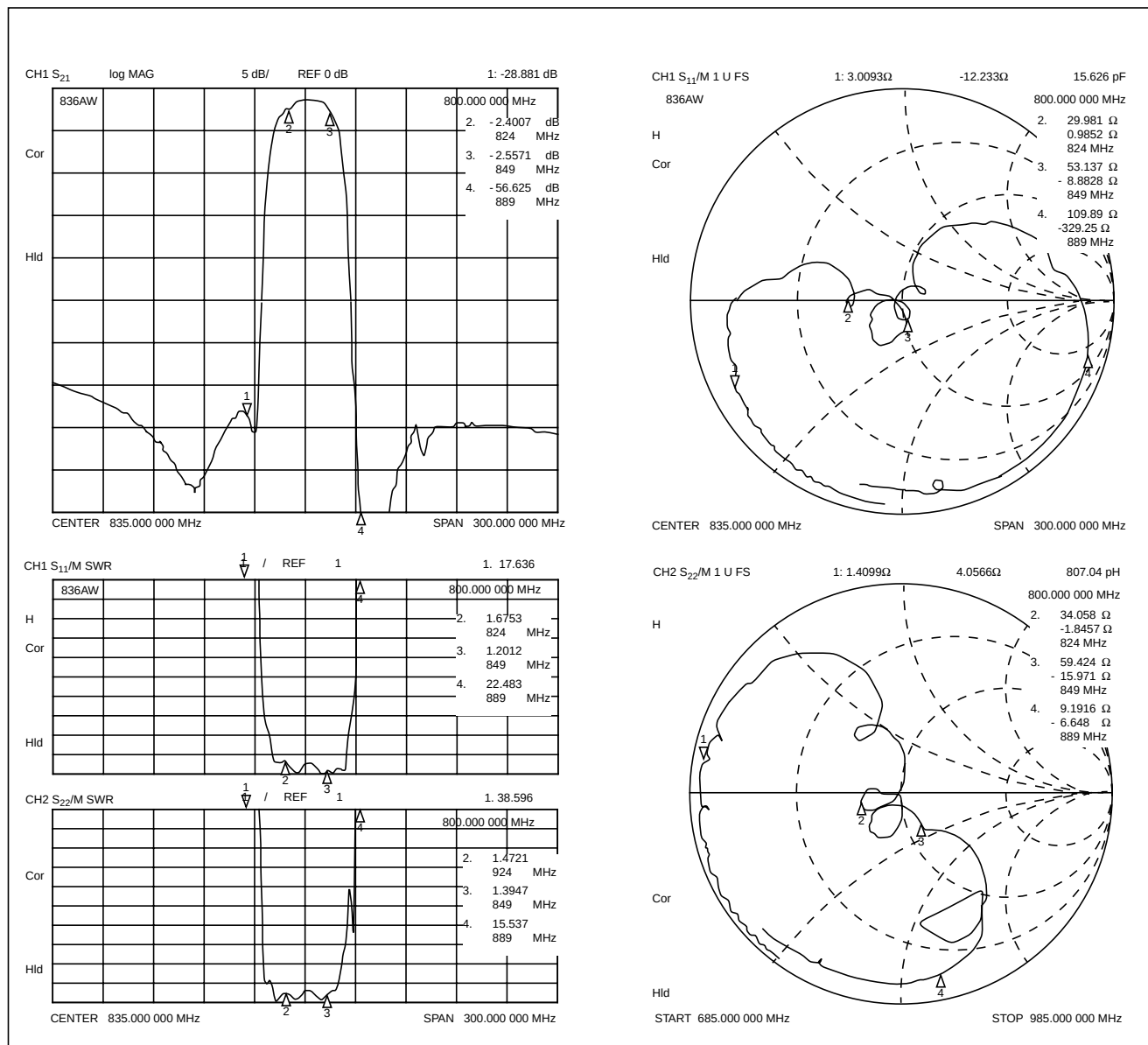
TYPICAL CHARACTERISTICS (STANDARD VERSION)

- AMPS / ADC system (Tx)
Part number : FAR-F5CH-836M50-L2AL



F5 Series (L2 Type)

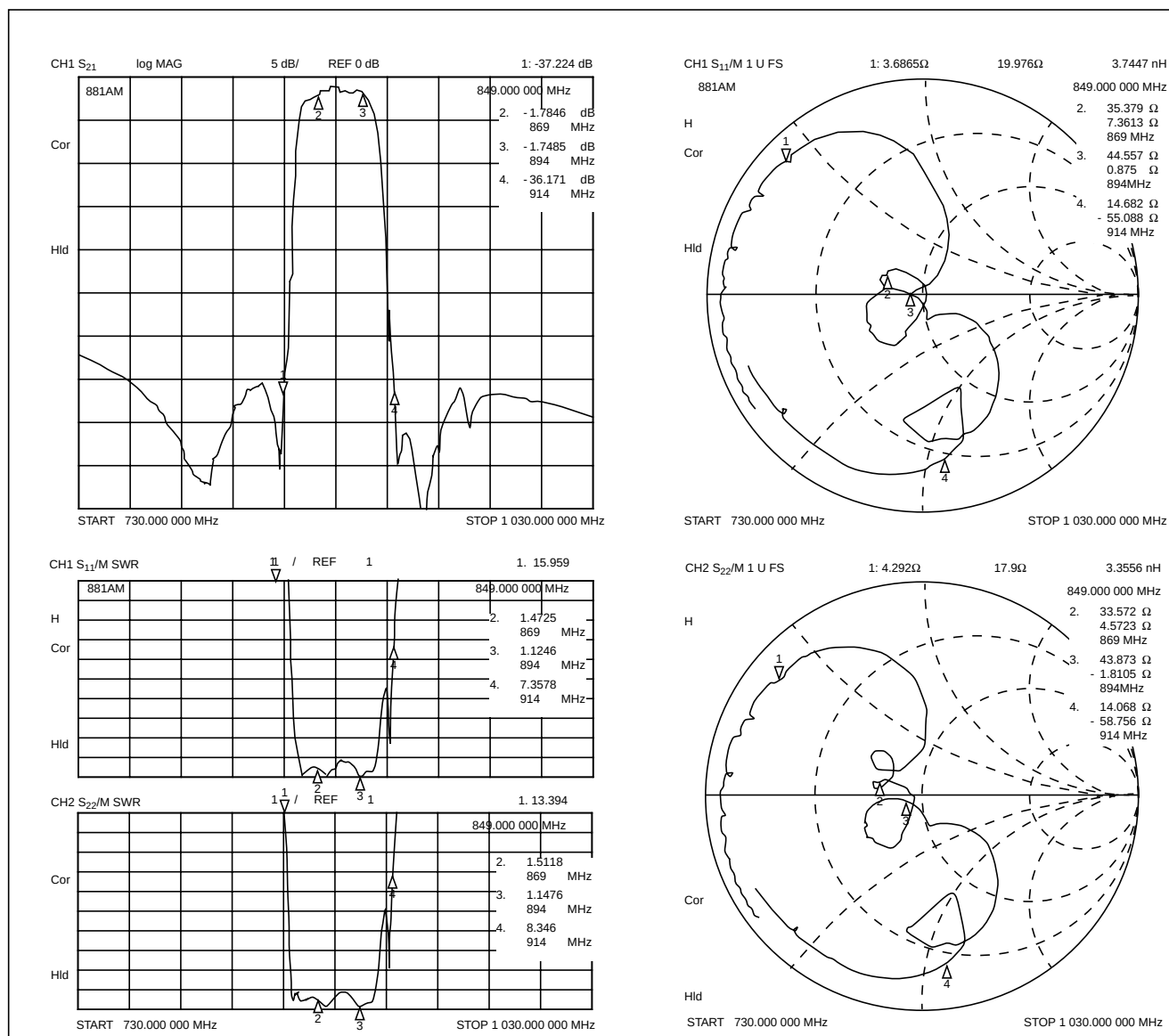
2. AMPS / ADC system (Tx) High Attenuation Type Part number : FAR-F5CH-836M50-L2AW



F5 Series (L2 Type)



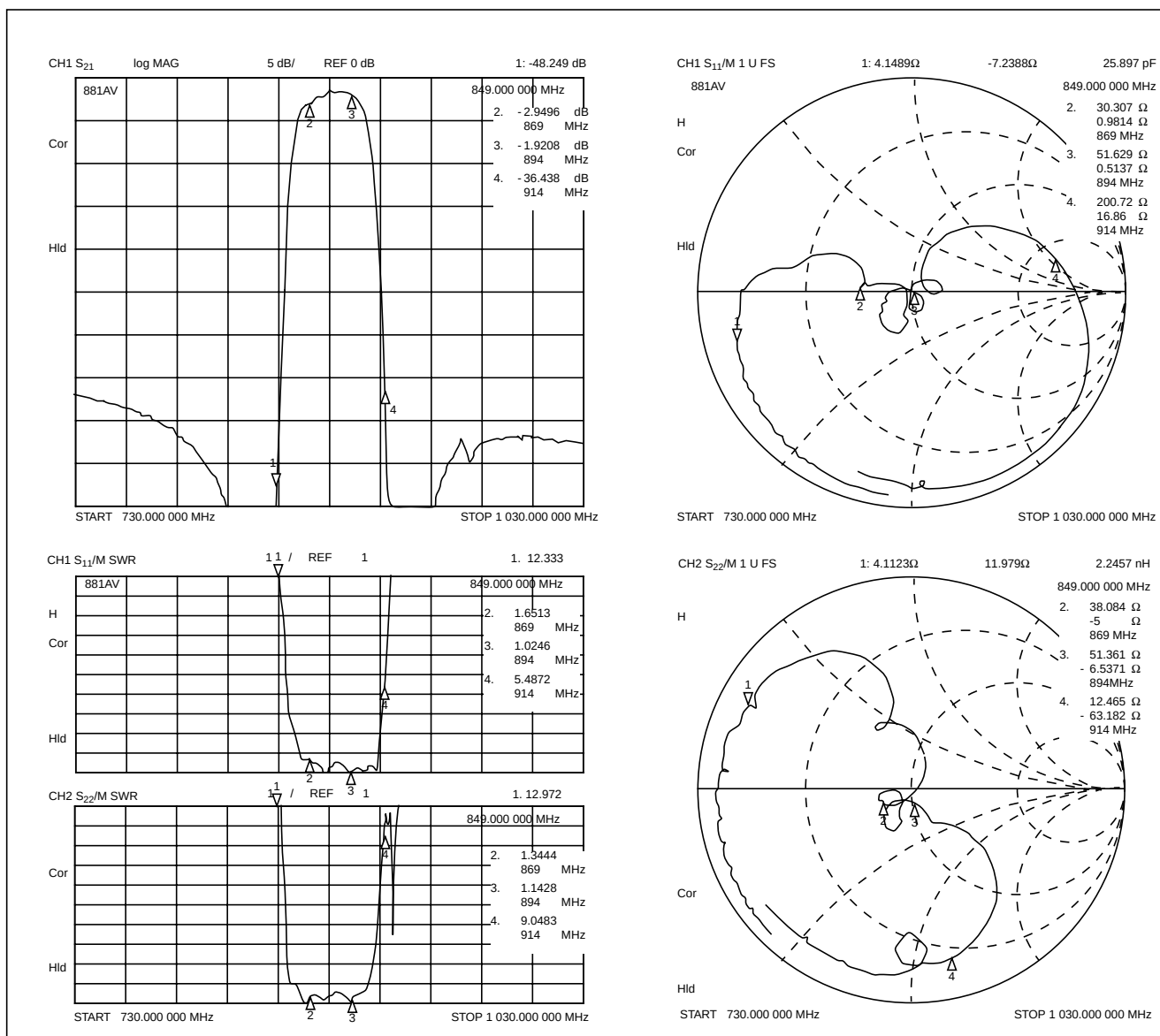
3. AMPS / ADC system (Rx) Part number : FAR-F5CH-881M50-L2AM



F5 Series (L2 Type)



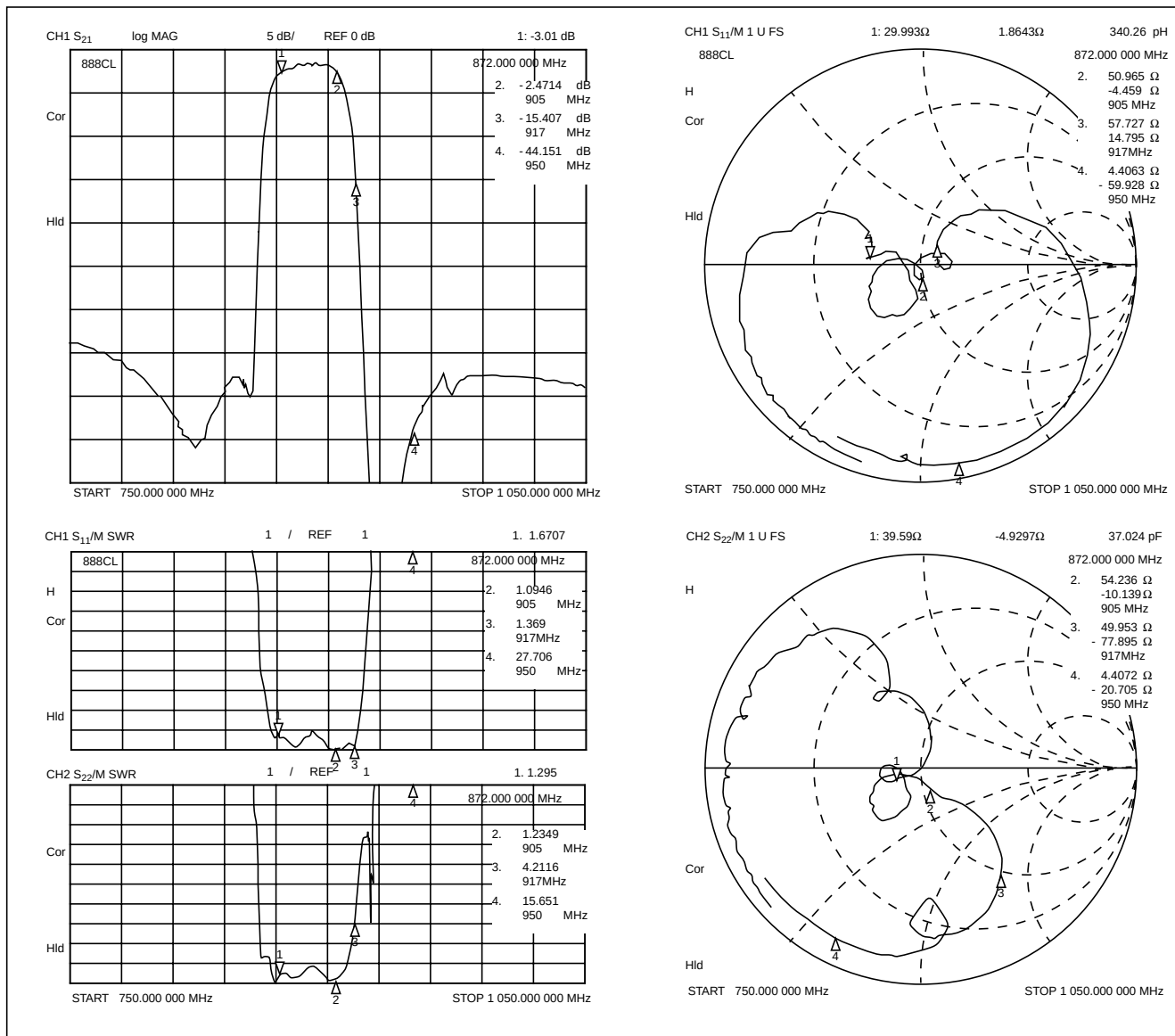
4. AMPS/ADC system (Rx) High Attenuation Type Part number : FAR-F5CH-881M50-L2AV



F5 Series (L2 Type)

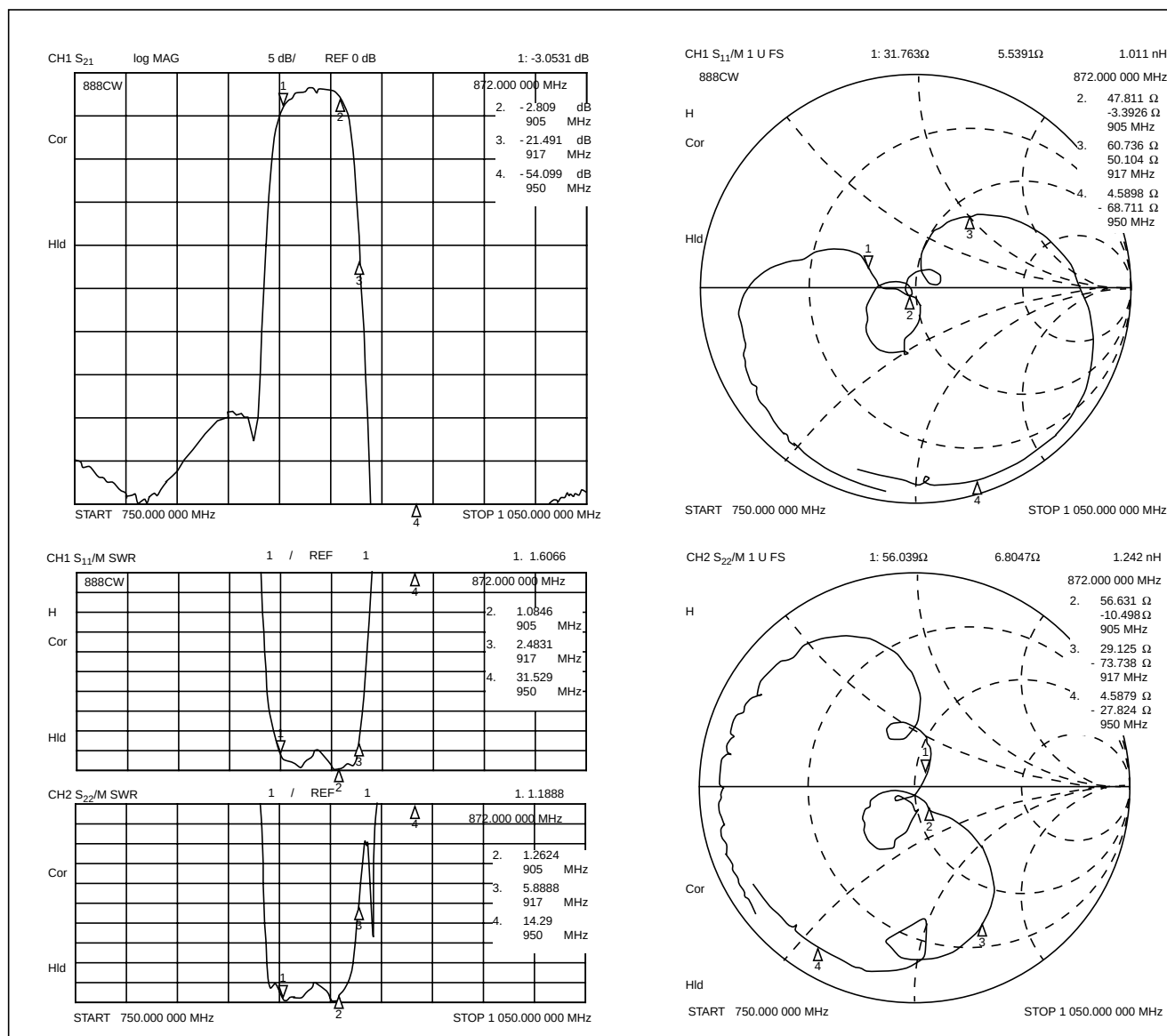


5. ETACS system (Tx)
Part number : FAR-F5CH-888M50-L2CL



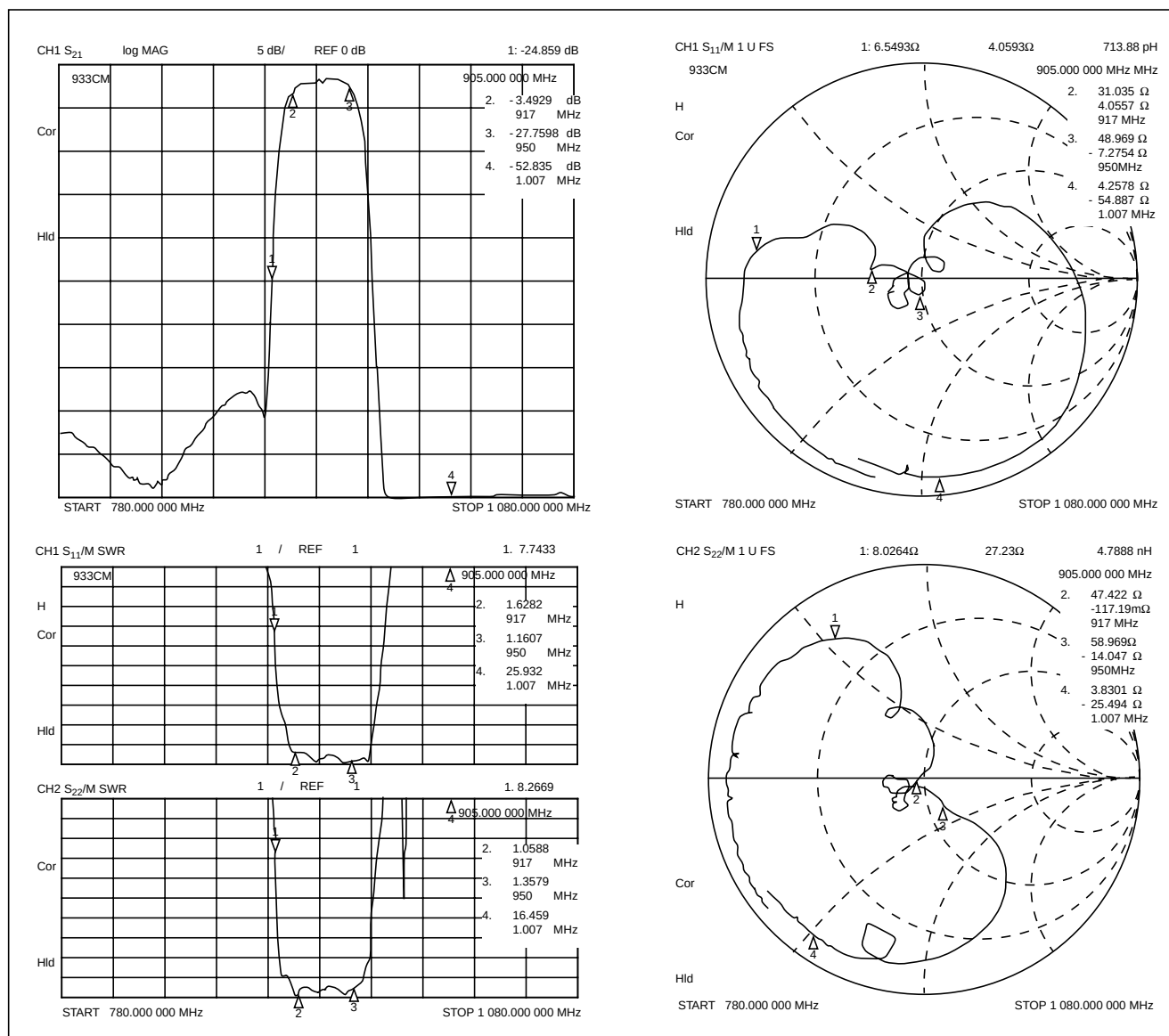
F5 Series (L2 Type)

6. ETACS system (Tx) High Attenuation Type Part number : FAR-F5CH-888M50-L2CW



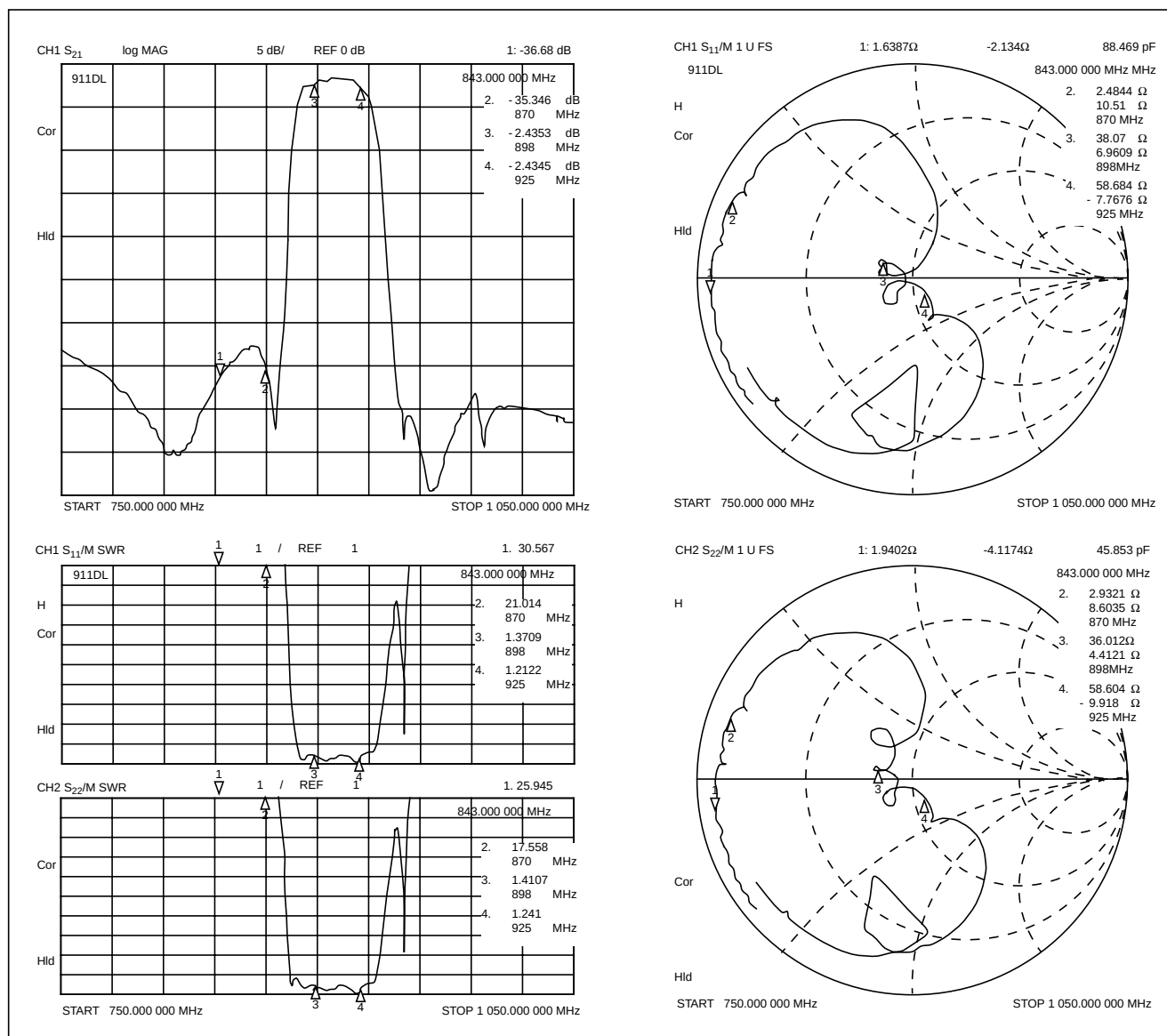
F5 Series (L2 Type)

7. ETACS system (Rx) Part number : FAR-F5CH-933M50-L2CM

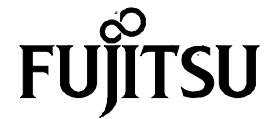


F5 Series (L2 Type)

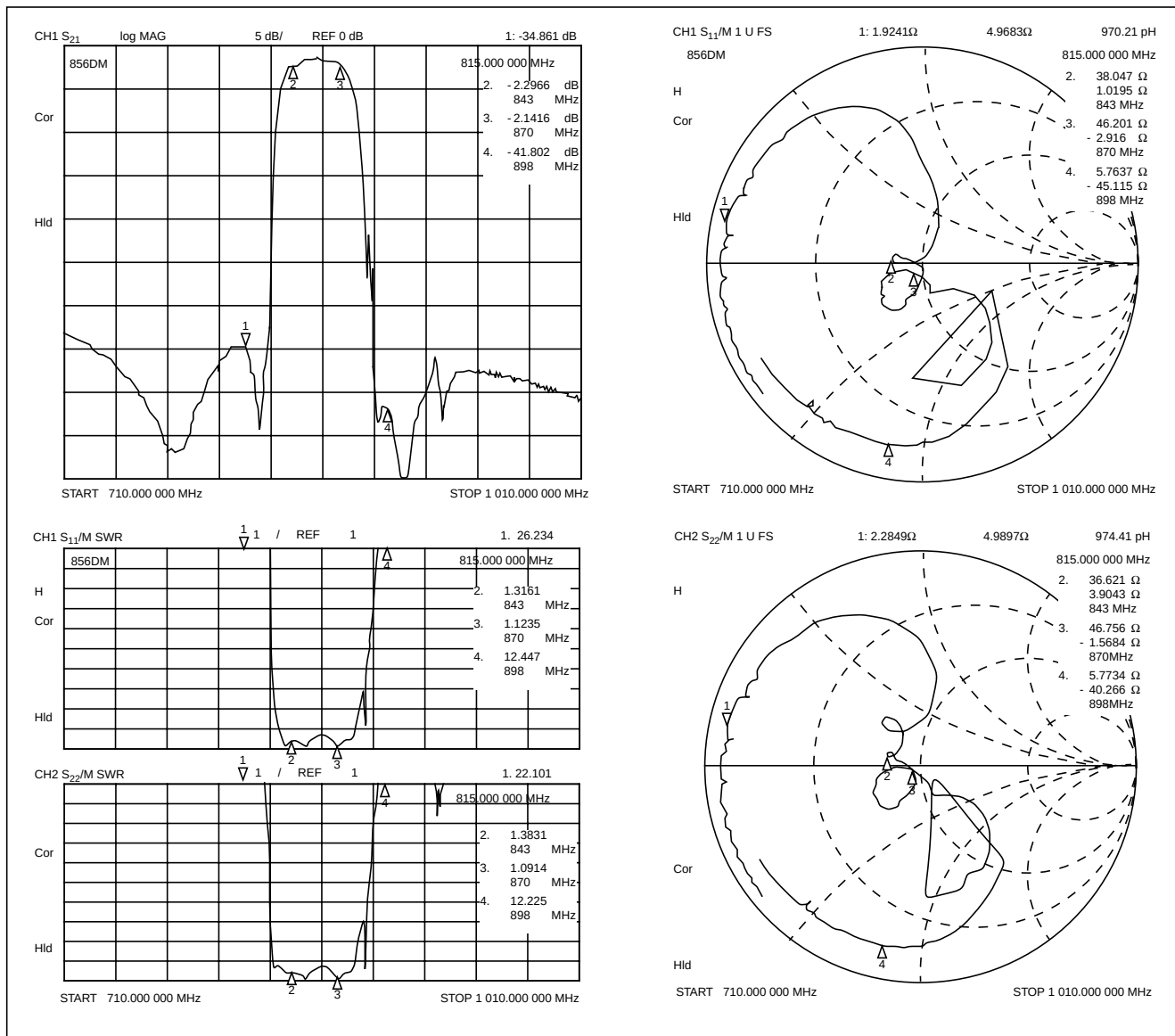
8. NTACS system (Tx) Part number : FAR-F5CH-911M50-L2DL



F5 Series (L2 Type)



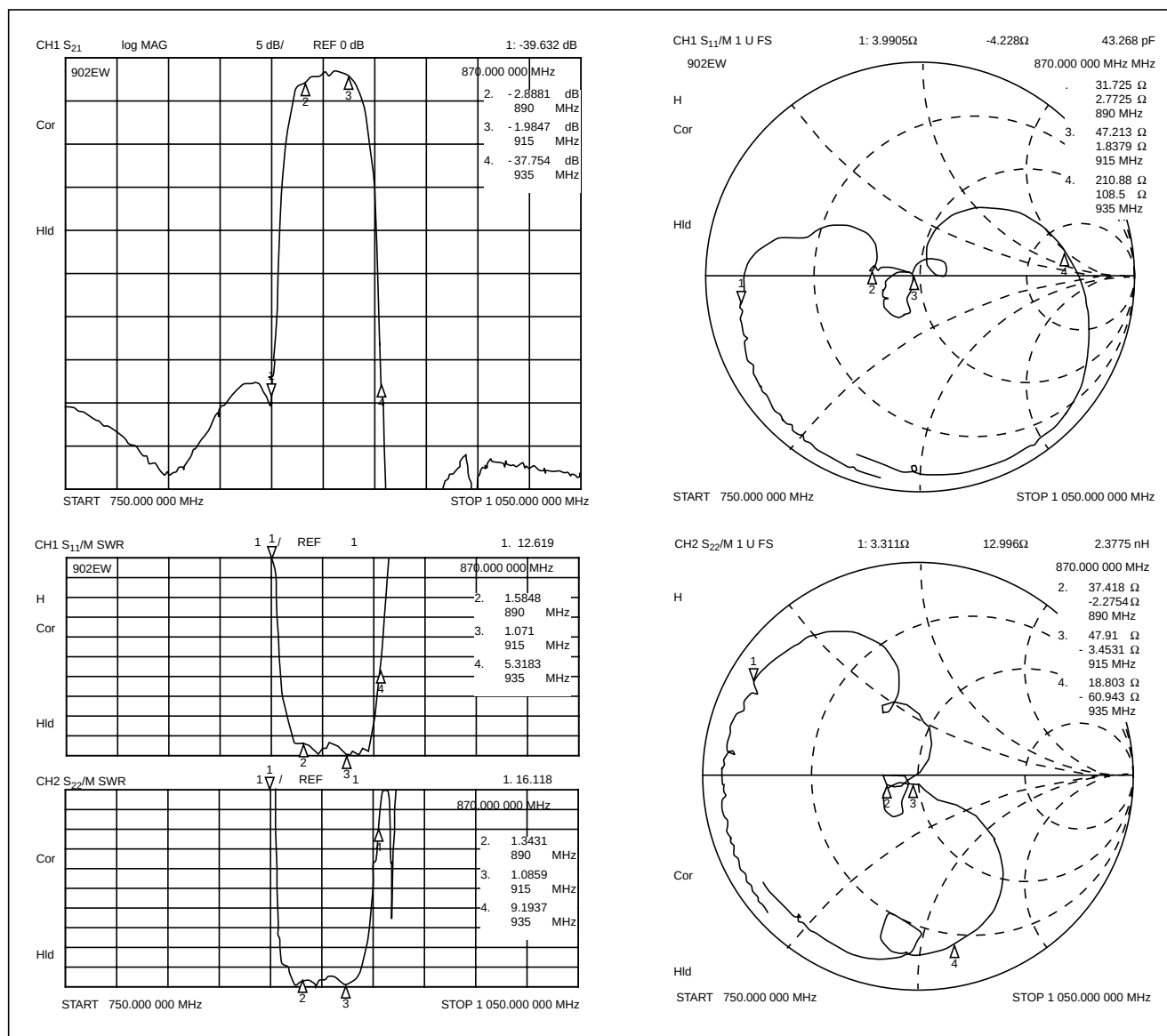
9. NTACS system (Rx)
Part number : FAR-F5CH-856M50-L2DM



F5 Series (L2 Type)



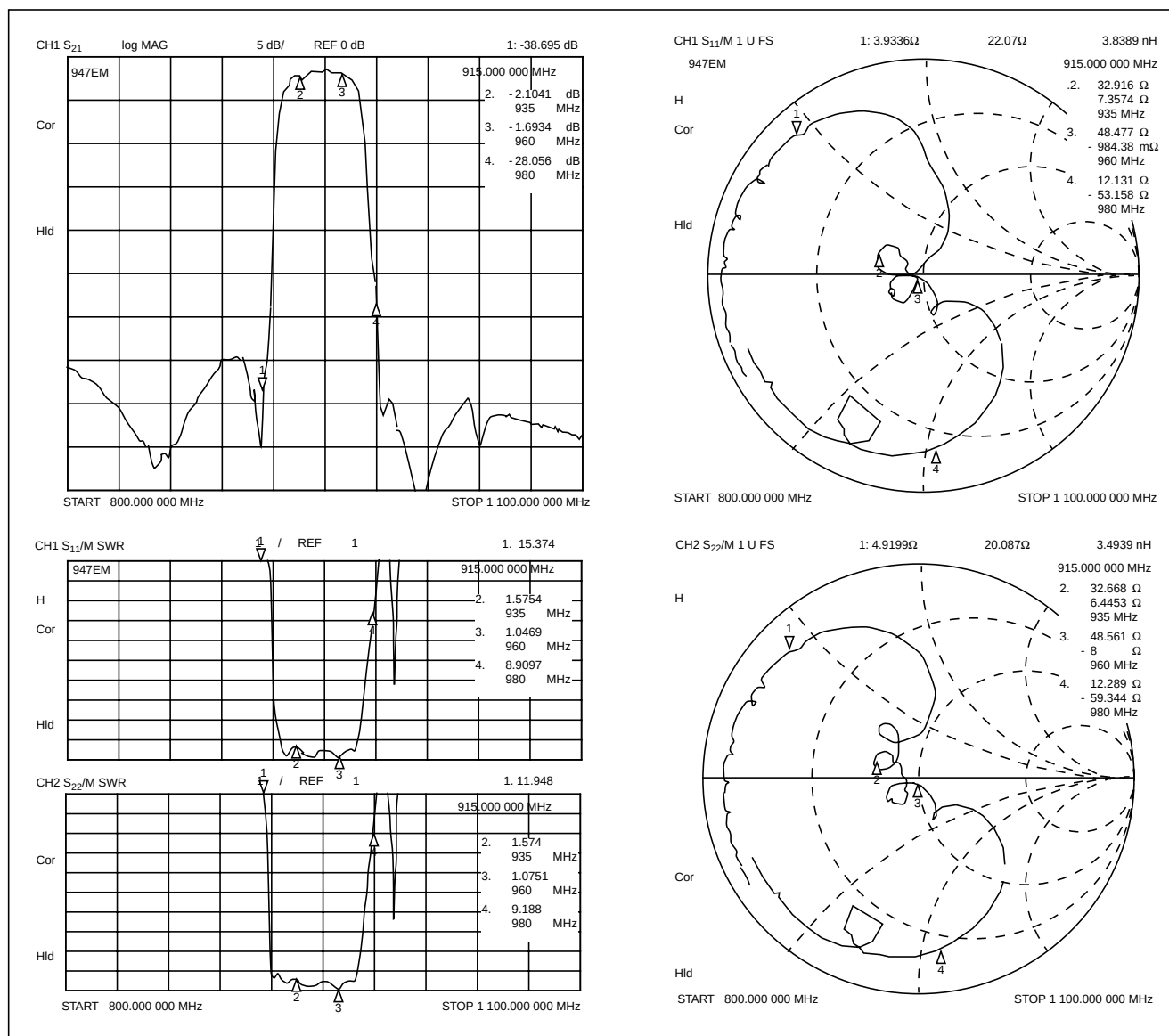
10. NMT / GSM system (Tx) High Attenuation Type Part number : FAR-F5CH-902M50-L2EW



F5 Series (L2 Type)

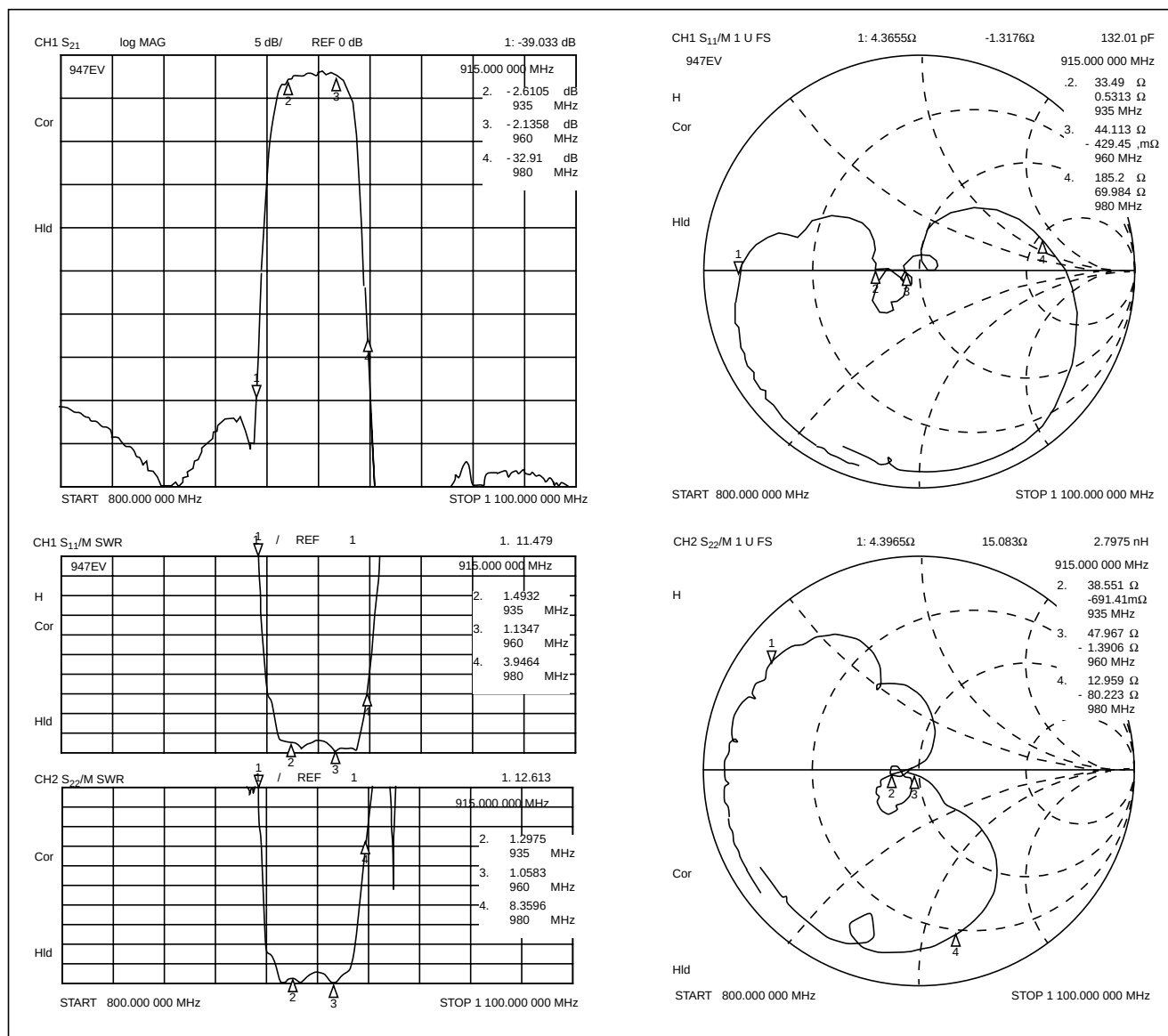


11. NMT / GSM system (Rx)
Part number : FAR-F5CH-947M50-L2EM



F5 Series (L2 Type)

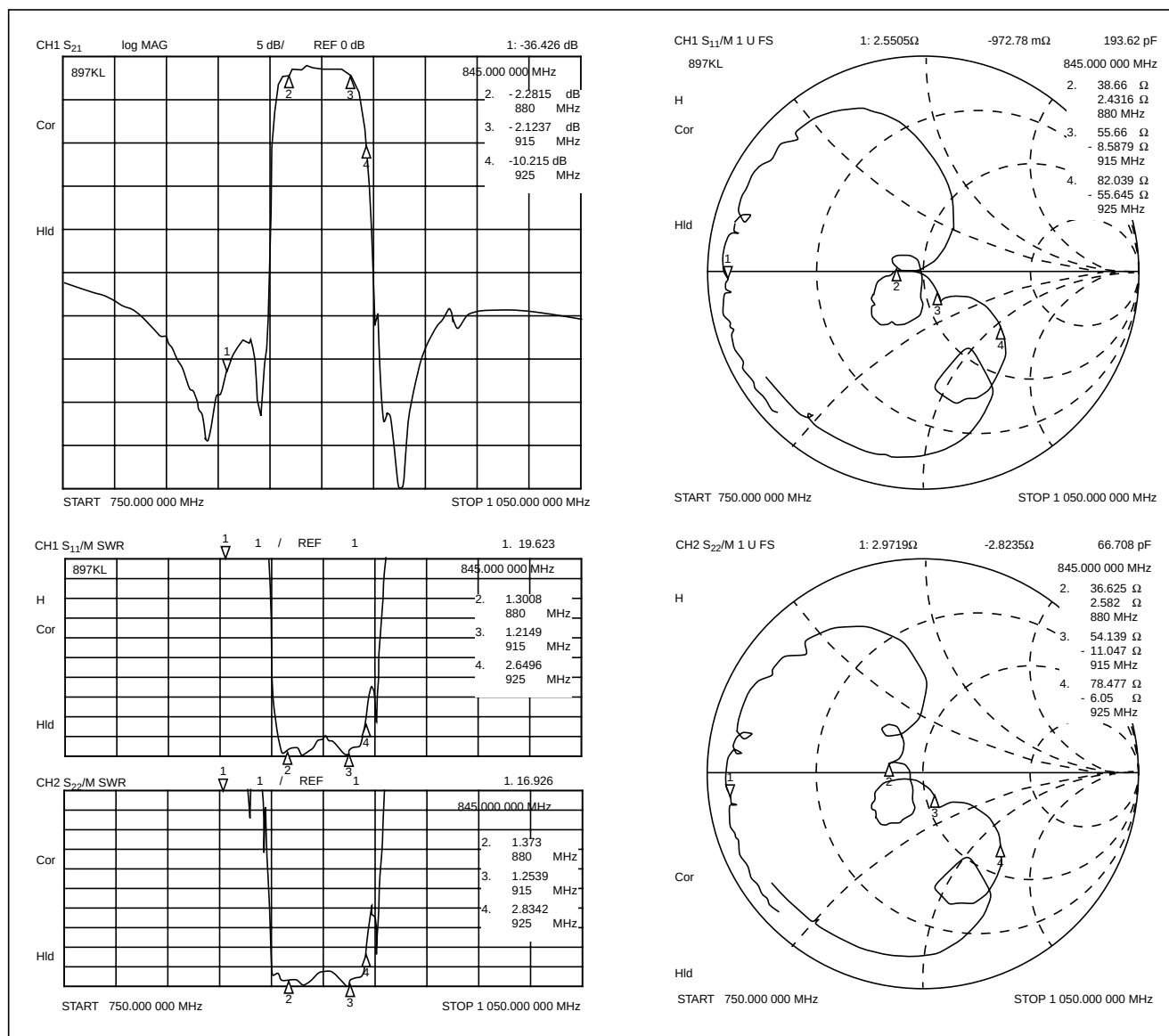
12. NMT / GSM system (Rx) High Attenuation Type Part number : FAR-F5CH-947M50-L2EV



F5 Series (L2 Type)



13. EGSM system (Tx) Part number : FAR-F5CH-897M50-L2KL

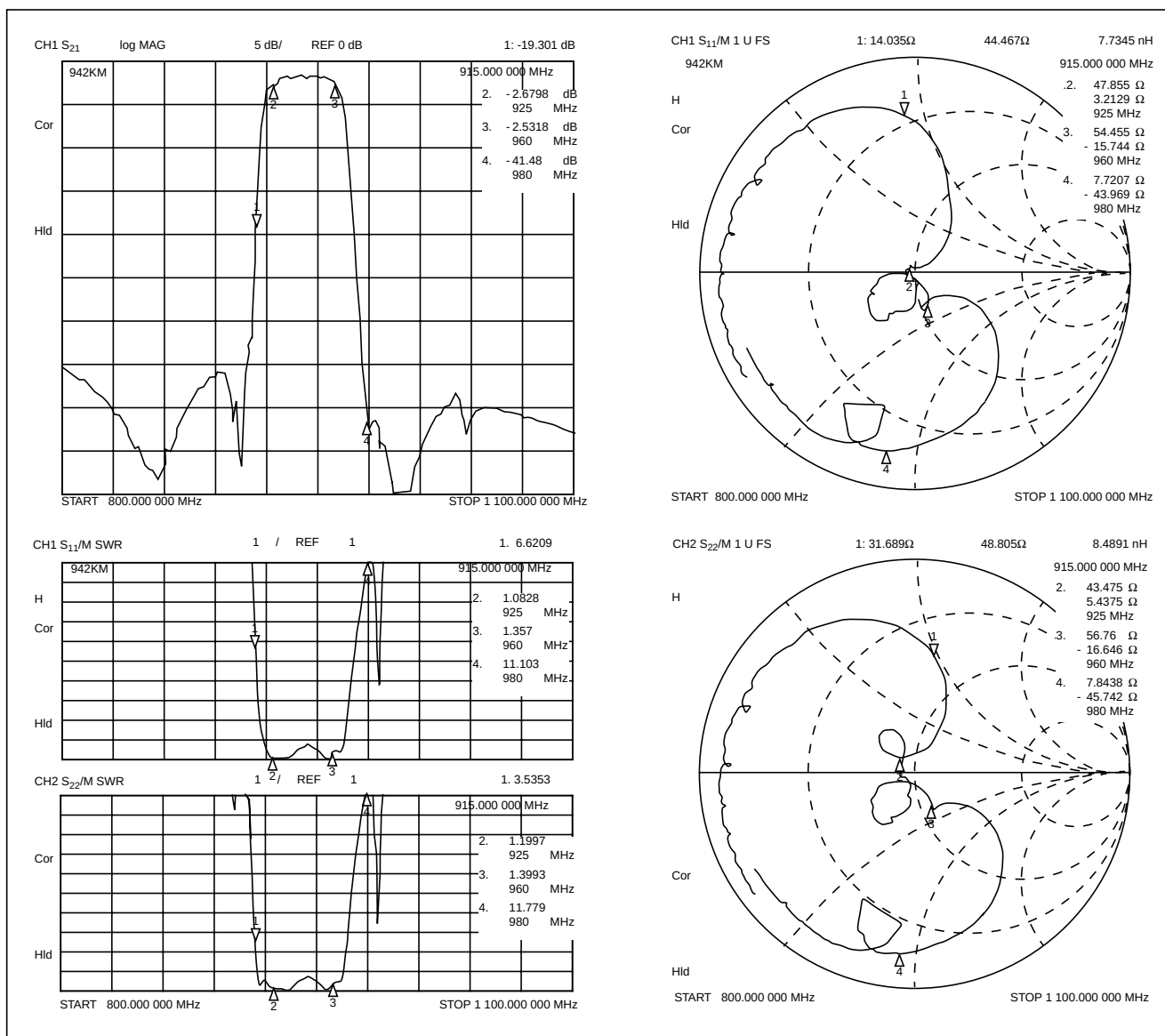


F5 Series (L2 Type)



14. EGSM system (Rx)

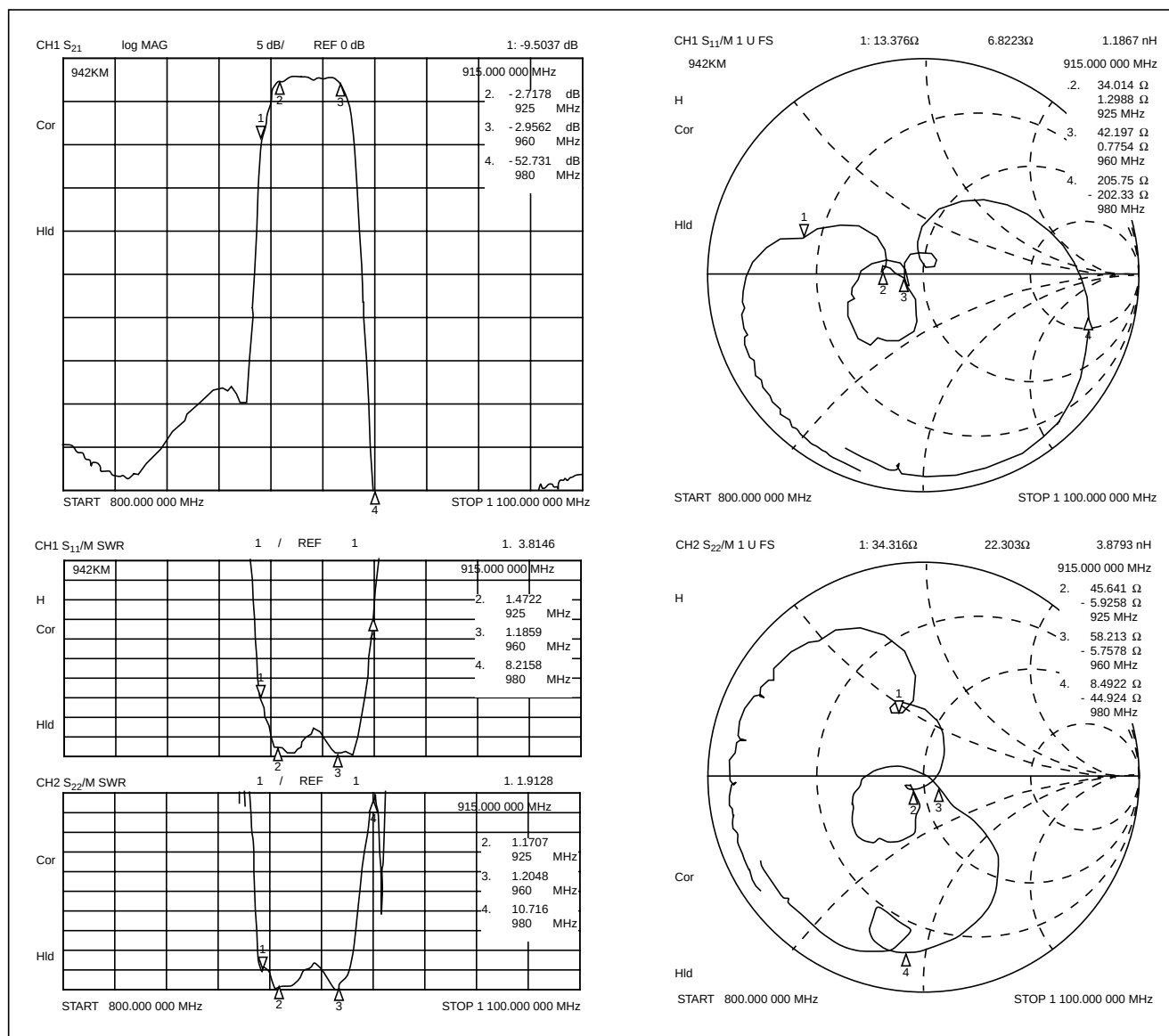
Part number : FAR-F5CH-942M50-L2KM



F5 Series (L2 Type)



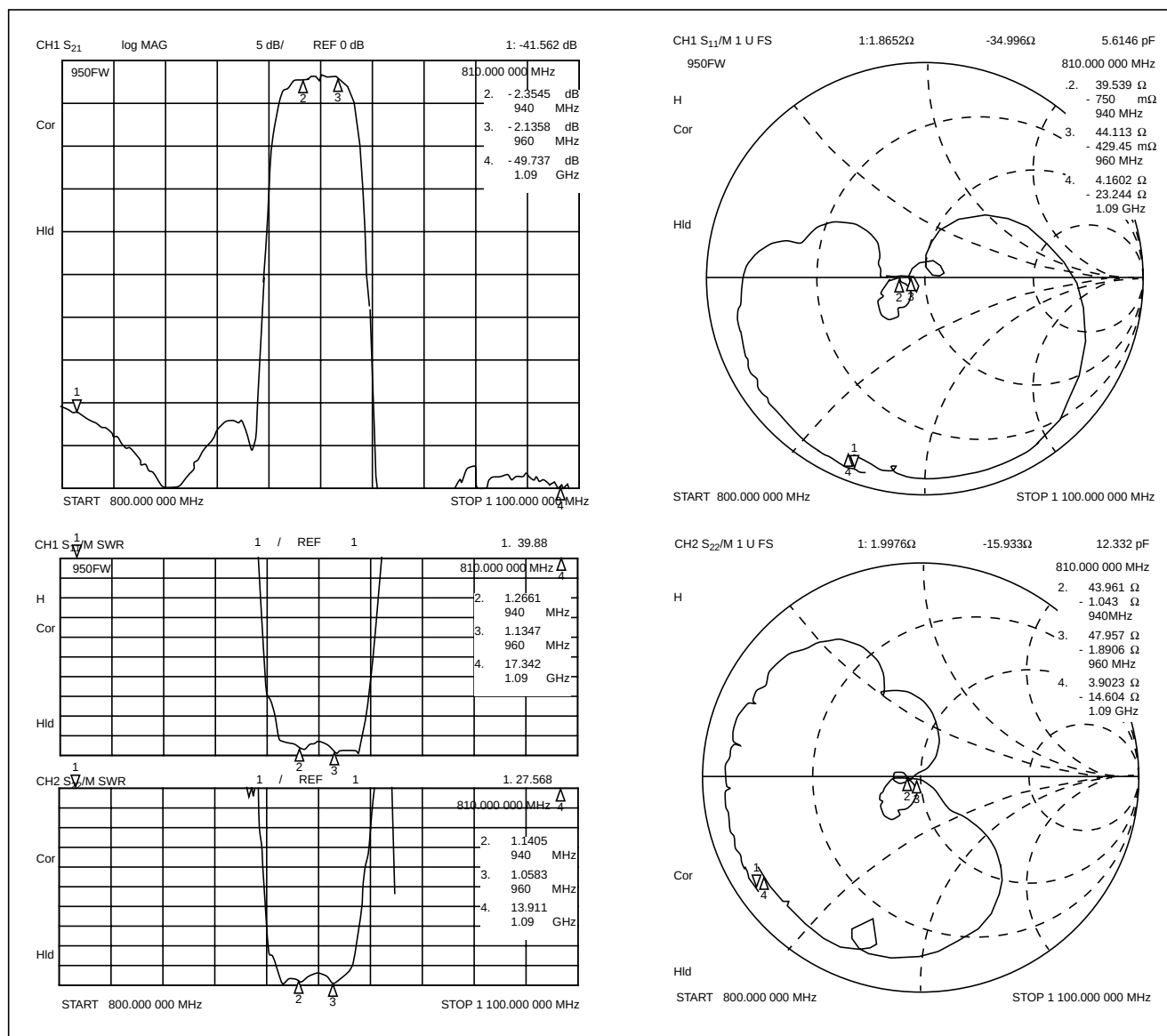
15. EGSM system (Rx) High Attenuation Type Part number : FAR-F5CH-942M50-L2KV



F5 Series (L2 Type)



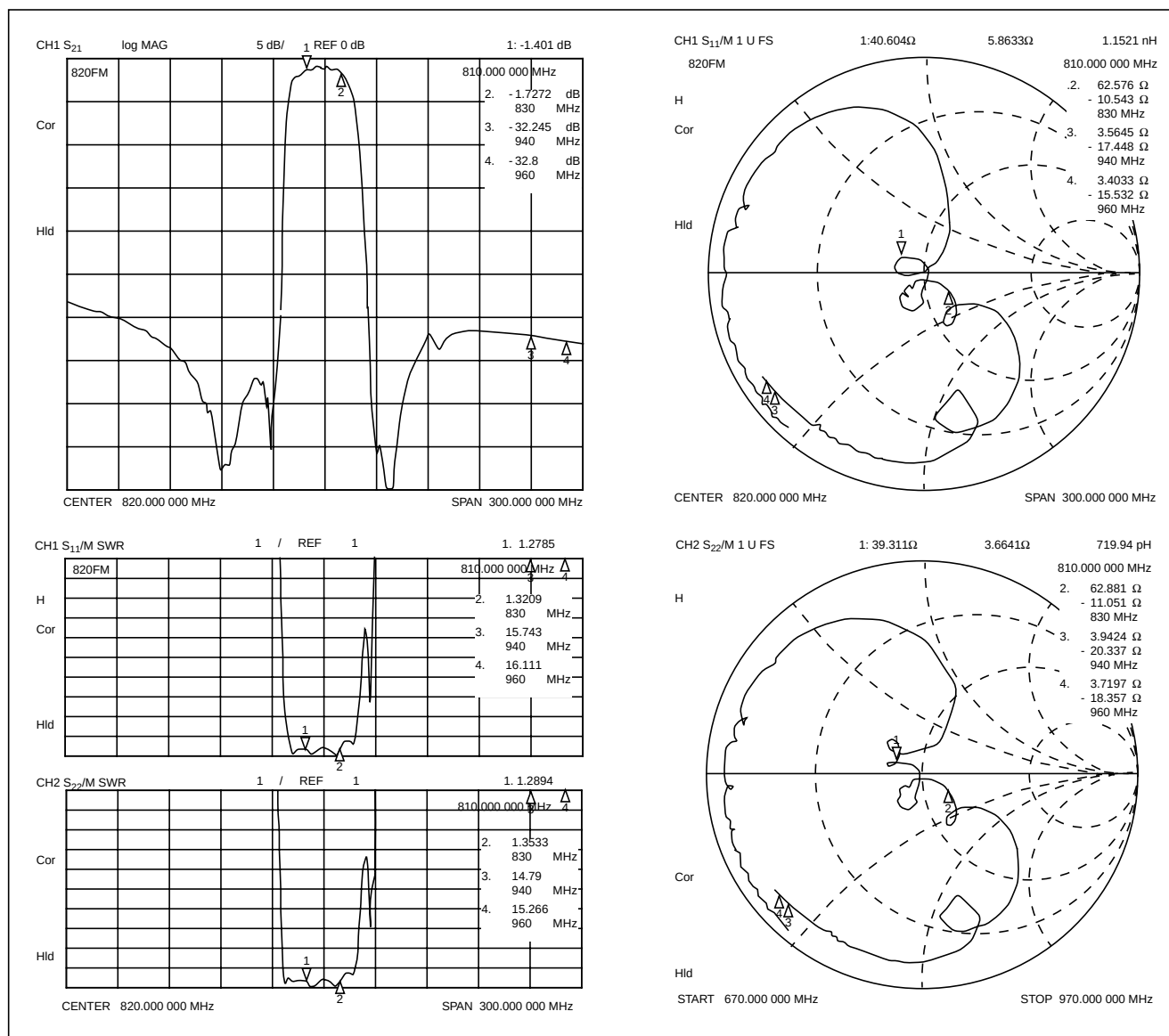
16. PDC800 system (Tx) High Attenuation Type Part number : FAR-F5CH-950M00-L2FW



F5 Series (L2 Type)



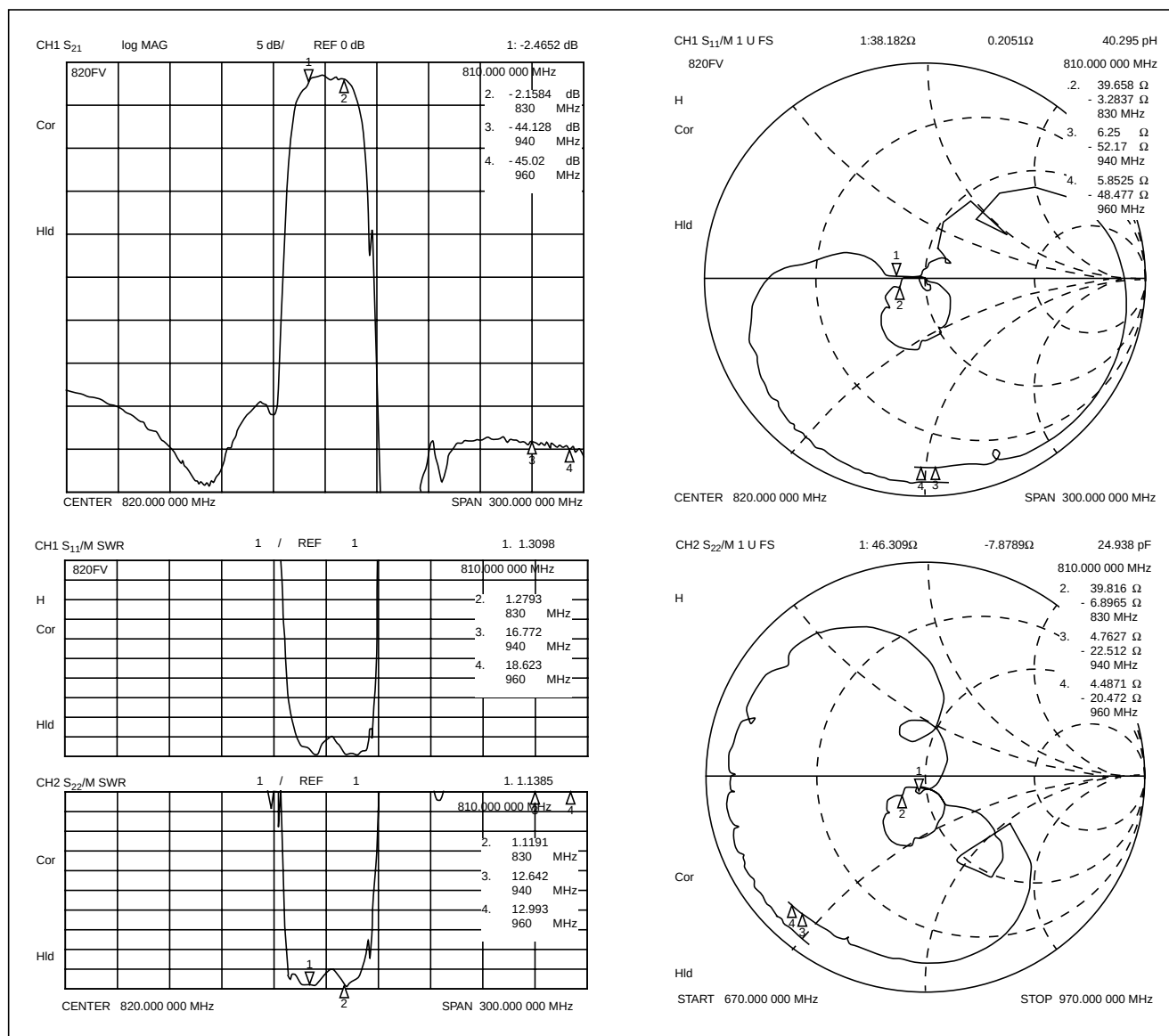
17. PCD800 system (Rx)
Part number : FAR-F5CH-820M00-L2FM



F5 Series (L2 Type)



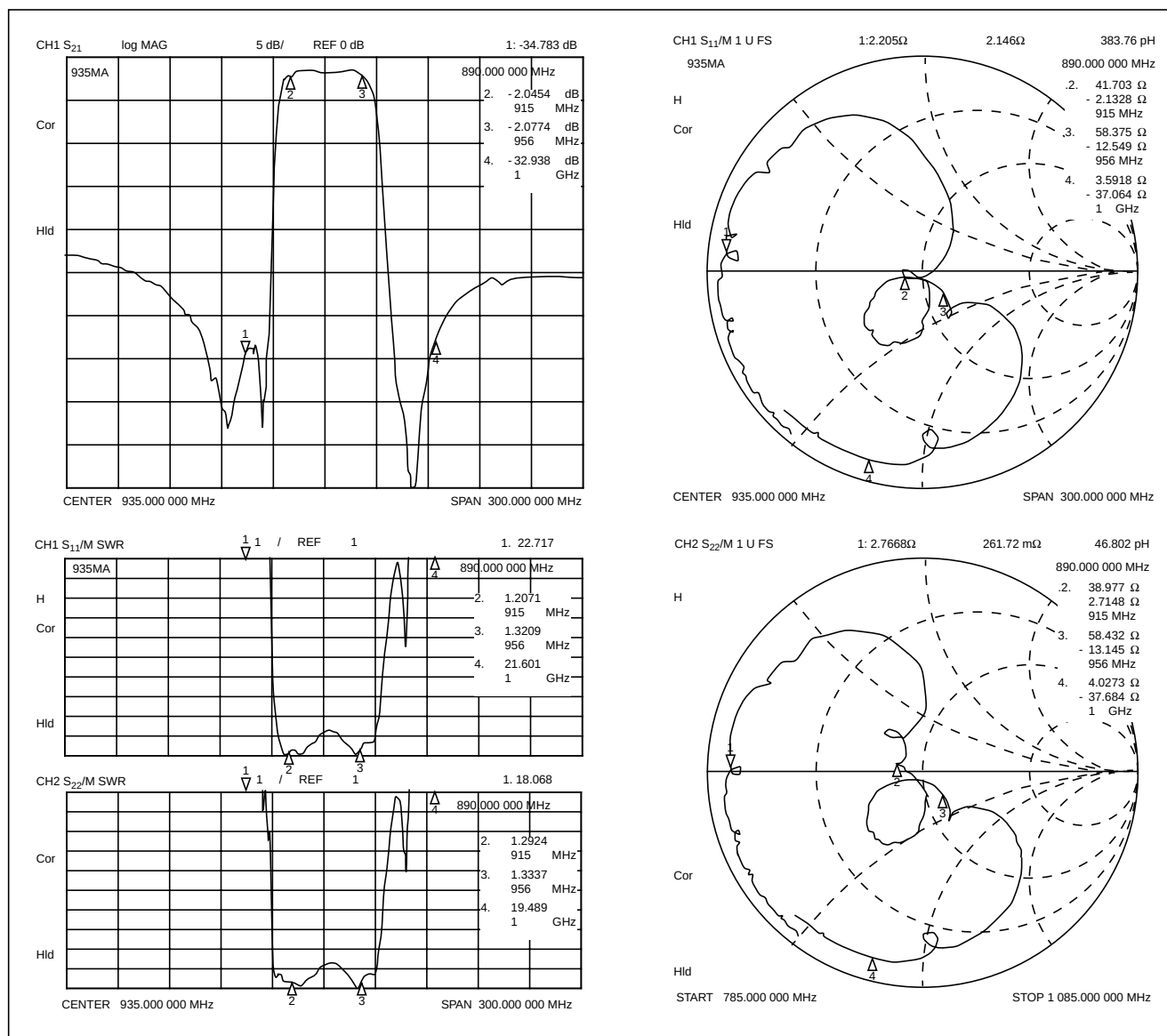
18. PDC800 system (Rx) High Attenuation Type Part number : FAR-F5CH-820M00-L2FV



F5 Series (L2 Type)



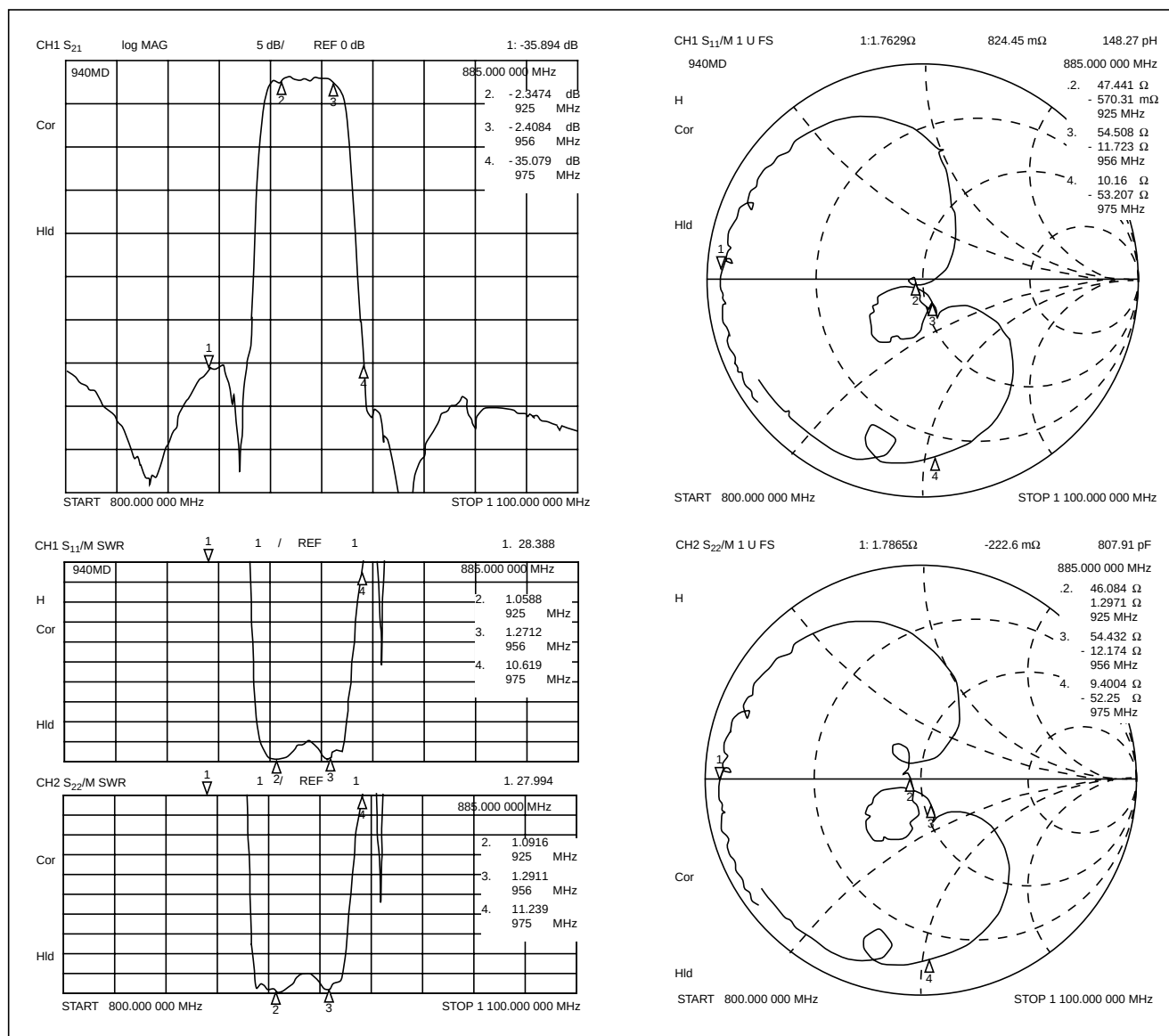
19. DUAL BAND PDC800 system (Tx) BW; 41 MHz
Part number : FAR-F5CH-935M50-L2MA



F5 Series (L2 Type)



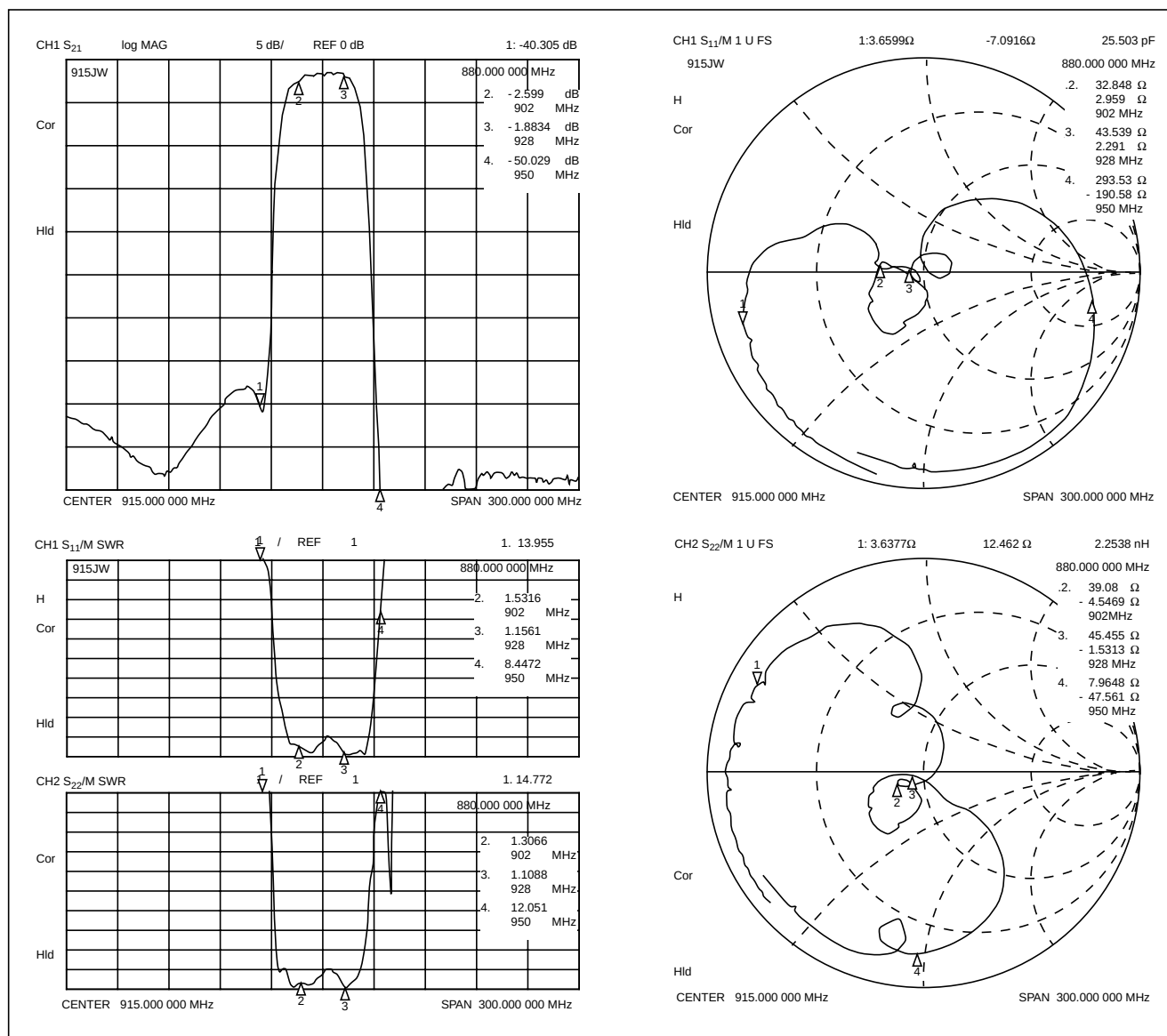
20. DUAL BAND PDC800 system (Tx) BW; 33 MHz High Attenuation Type Part number : FAR-F5CH-940M50-L2MD



F5 Series (L2 Type)



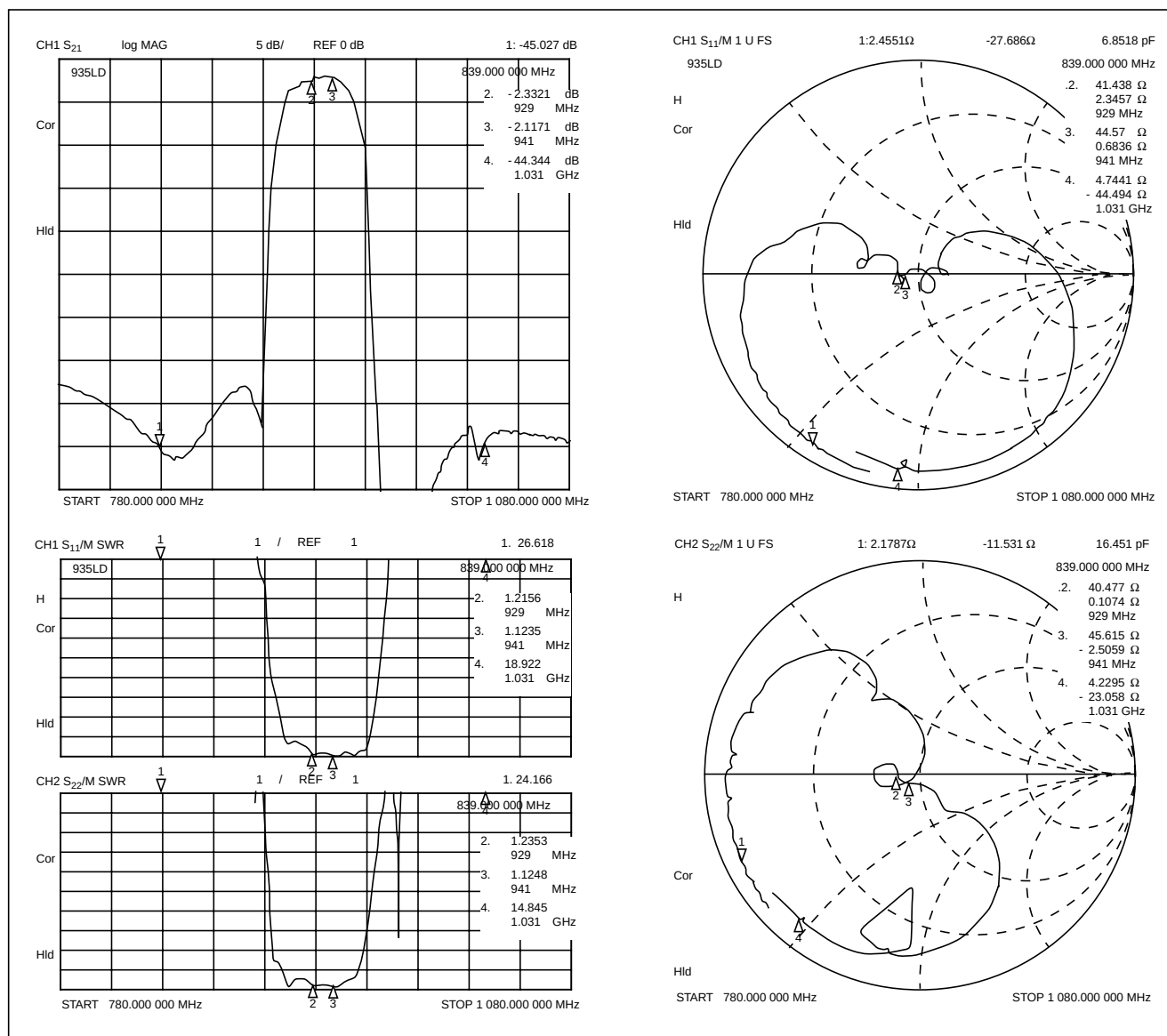
21. ISM900 High Attenuation Type Part number : FAR-F5CH-915M00-L2JW

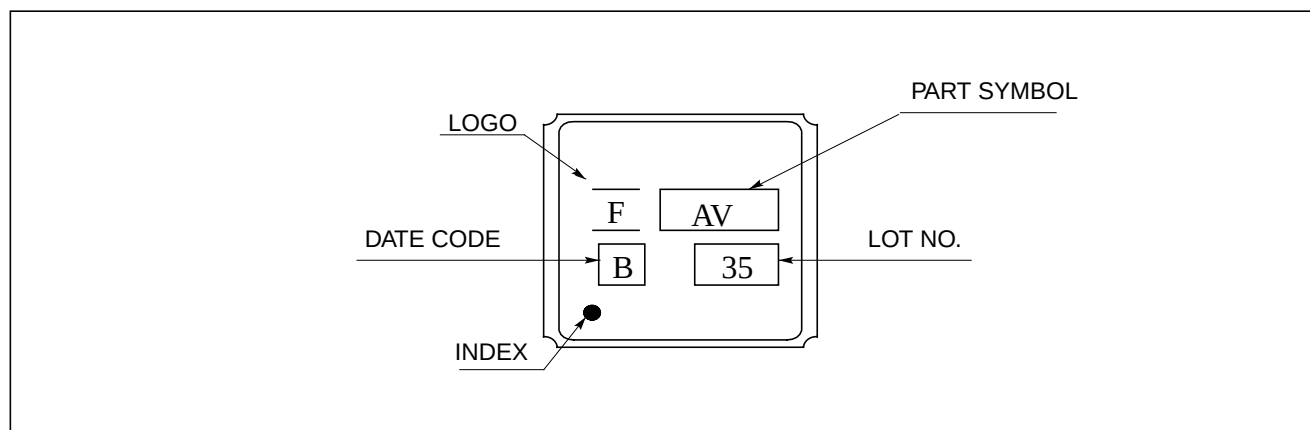
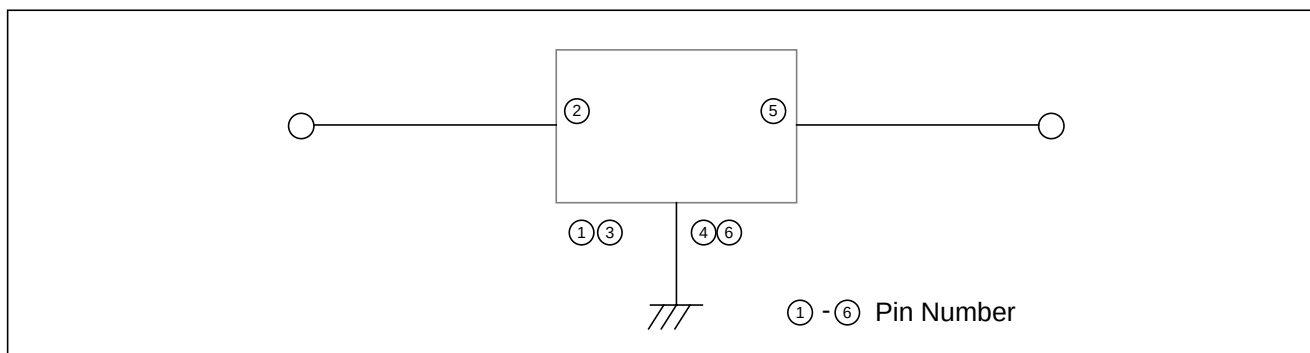


F5 Series (L2 Type)

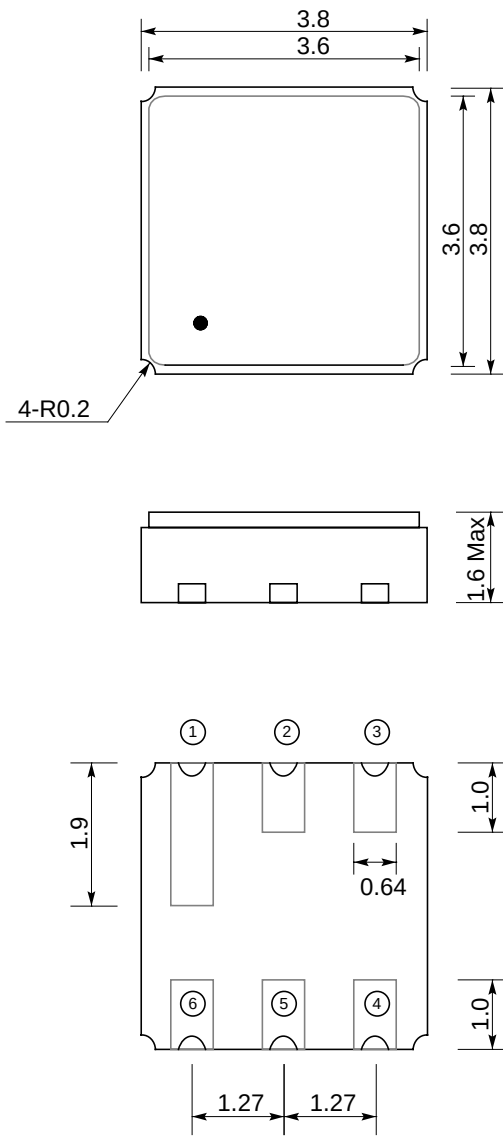


22. N-PCS (2WAY PAGER) (Rx) Part number : FAR-F5CH-935M00-L2LD





DIMENSIONS

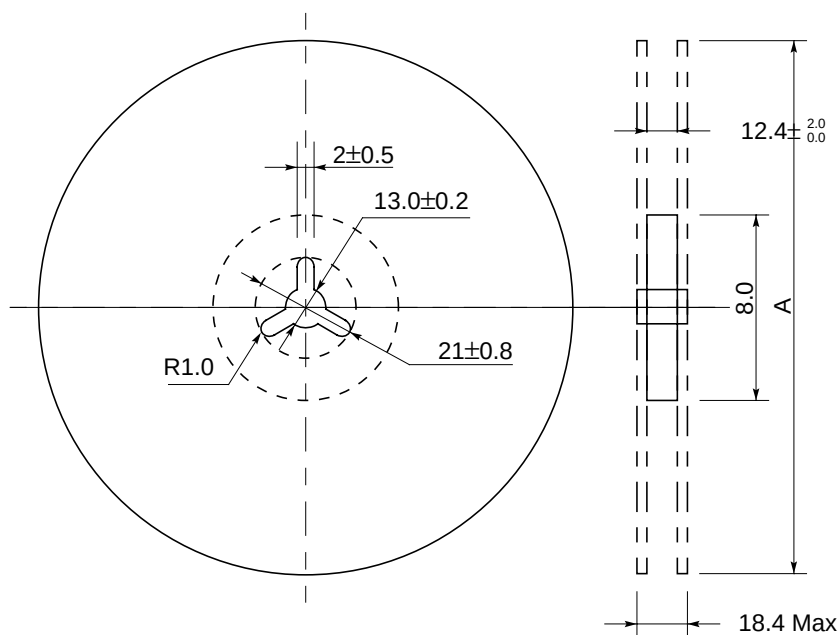


Dimensions in mm

F5 Series (L2 Type)

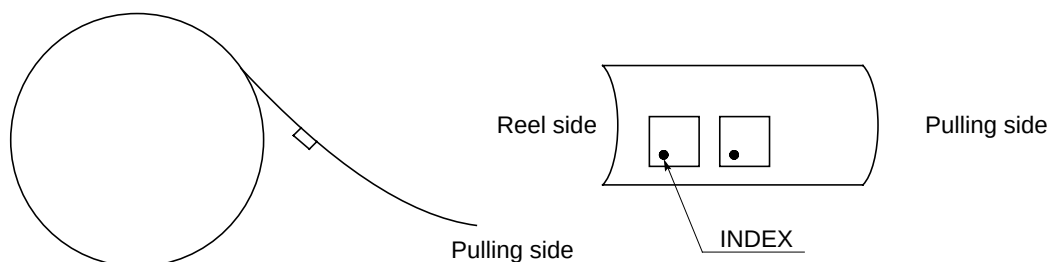
PACKING : Reel type

1. Reel dimension

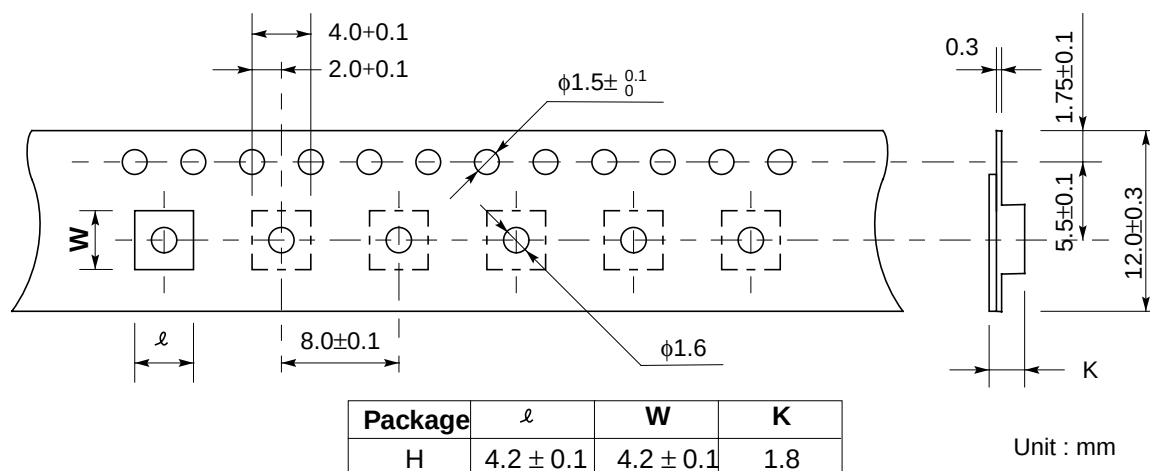


Type	A	Volume
-T	250	1 kpcs
-R	330	3 kpcs

2. Packing style



3. Tape dimensions



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