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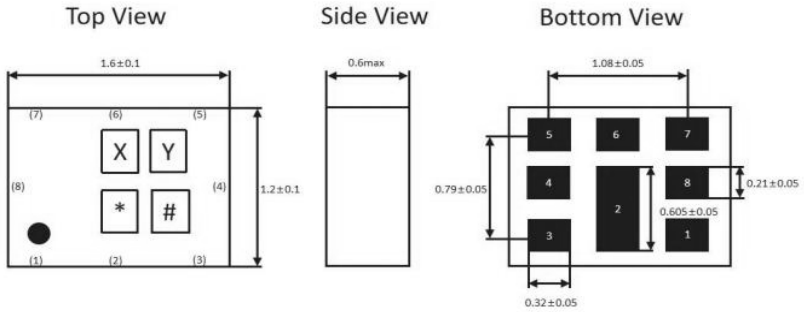
Specification Sheet

Customer Name	XXXX	CUST P/N	NA
Approval No.	PD	Temwell P/N	STSD-725-780-S1612W
Lot No.		Date	2025.04.17
Description	SAW Duplexer	Version	A1

(1)Size Diagram（Unit：MM）



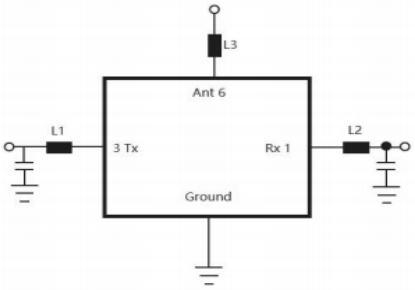
PinNo.	Description
3	Tx
1	Rx
6	Antenna
2,4,5,7,8	Ground
Tolerance	±0.1mm

(2)Electrical Specifications

Item			Specification		
Parameter	MHz	Unit	Min.	Typical	Max.
Center Frequency	-	MHz	-	725.5 / 780.5	-
Insertion Loss	703-748	dB	-	2.2	2.7
	758-803	dB	-	2.1	2.6
Ripple Deviation	703-748	dB	-	1.3	1.7
	758-803	dB	-	1.2	1.8
VSWR of Tx Port	703-748	-	-	1.7	2.0
VSWR of Rx Port	758-803	-	-	1.6	2.0
VSWR of Ant Port	703-748	-	-	1.7	2.0
	758-803	-	-	1.6	2.0
Attenuation (703-748)	10-670	dB	30	37	-
	474-690	dB	30	37	-
	670-680	dB	45	50	-
	680-694	dB	30	35	-
	692-698	dB	4	7	-
	758-803	dB	50	55	-
	859-894	dB	30	35	-
	1164-1189	dB	35	43	-
	1189-1214	dB	38	44	-
	1215-1239.6	dB	40	47	-
	1406-1466	dB	45	53	-
	1559-1563	dB	46	54	-
	1565.4-1585.4	dB	45	53	-
	1597.5-1605.8	dB	45	53	-
	1605.8-1680	dB	45	53	-
	1710-1785	dB	43	52	-
	1805-1880	dB	43	52	-
	1930-1995	dB	43	52	-
	2010-2025	dB	40	52	-
	2109-2244	dB	40	52	-
	2300-2400	dB	41	52	-
	2400-2484	dB	40	52	-
	2496-2690	dB	45	53	-
	2812-2932	dB	45	53	-
	3400-3800	dB	40	48	-

	4900-5950	dB	30	45	-
Attenuation (758-803)	10-699	dB	45	53	-
	699-703	dB	50	58	-
	703-748	dB	50	56	-
	814-849	dB	13	19	-
	824-849	dB	40	48	-
	832-862	dB	35	43	-
	880-915	dB	40	47	-
	1710-1785	dB	45	55	-
	1850-1910	dB	45	55	-
	1920-1980	dB	45	55	-
	2400-2484	dB	45	52	-
	2496-2690	dB	45	52	-
	4900-5950	dB	30	40	-
Isolation	703-748	dB	50	53	-
	758-803	dB	50	54	-
Operation Temperature	-20℃~+85℃	℃	-	-	-
Storage Temperature	-40℃~+85℃	℃	-	-	-
RF Power Dissipation	+29	dBm	-	-	-
Remark	Note 1: Test Temperature: 25°C±2°C Note 2: Terminating source impedance: 50Ω. Terminating load impedance: 50Ω				

(3)Test Circuit



Port	Matching Component
Tx	L1: 17.8 nH (Ideal inductor) C1: 0.35 pF (Ideal capacity)
Rx	L2: 12.5 nH (Ideal inductor) C2: 0.30 pF (Ideal capacity)
Ant	L3: 90 nH (Ideal inductor)

Figure 1 Electrical Characteristics: Tx to Ant.

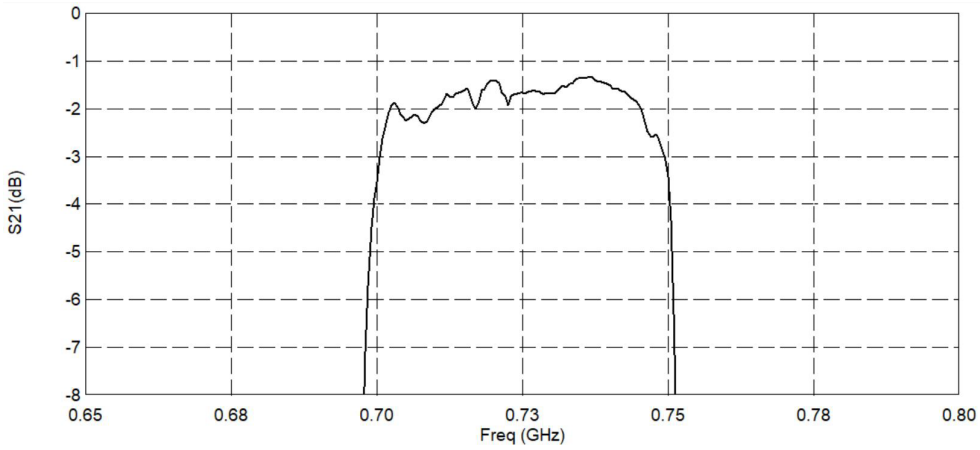


Figure 2 Electrical Characteristics: Tx to Ant.

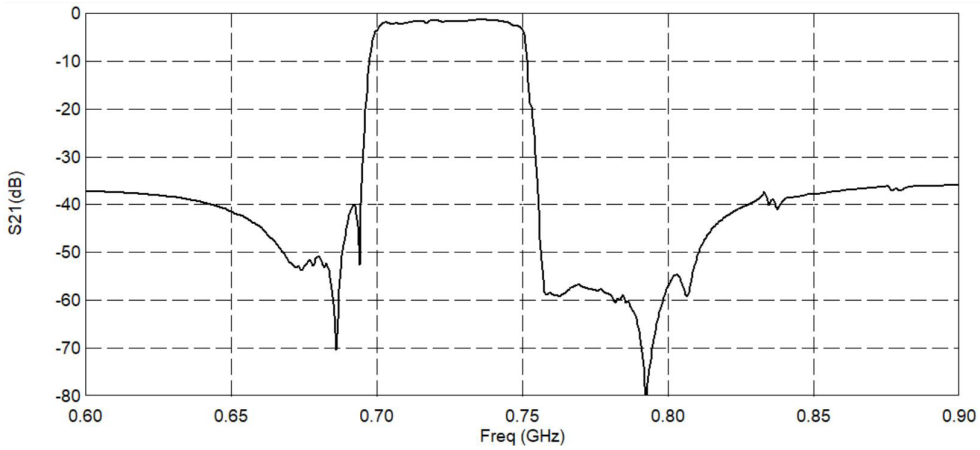


Figure 3 Electrical Characteristics: Tx to Ant.

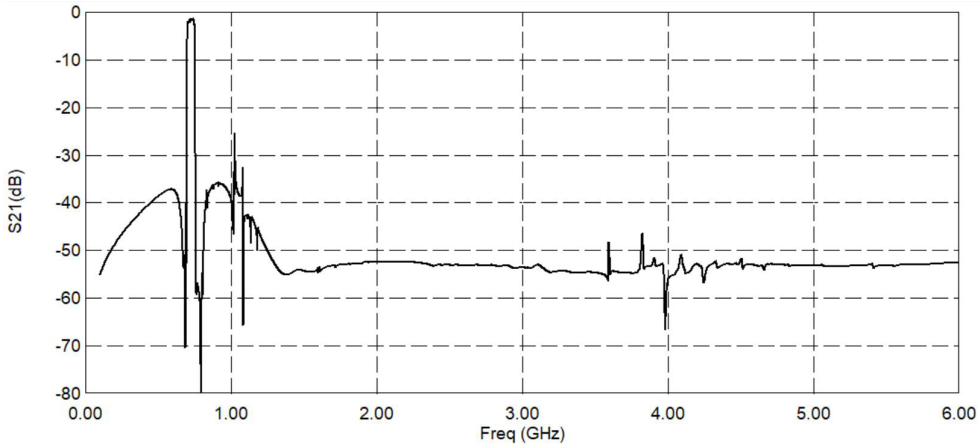


Figure 4 Electrical Characteristics: Ant to Rx.

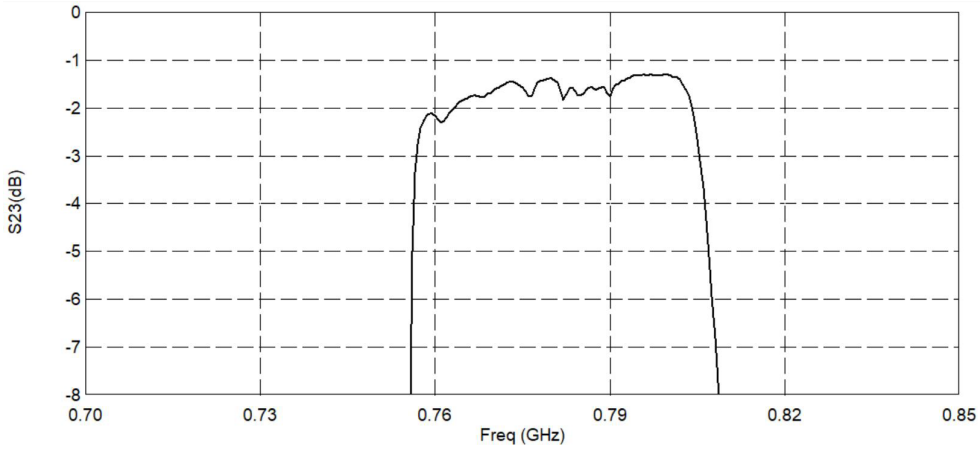


Figure 5 Electrical Characteristics: Ant to Rx.

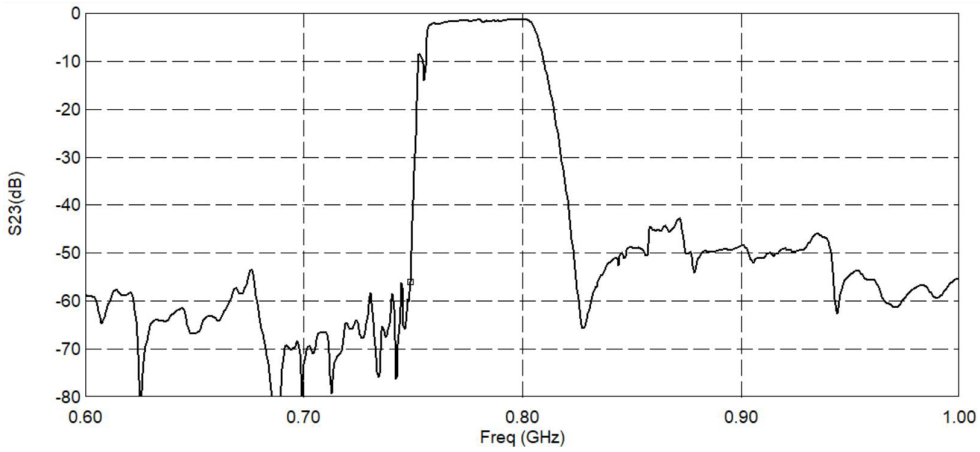


Figure 6 Electrical Characteristics: Ant to Rx.

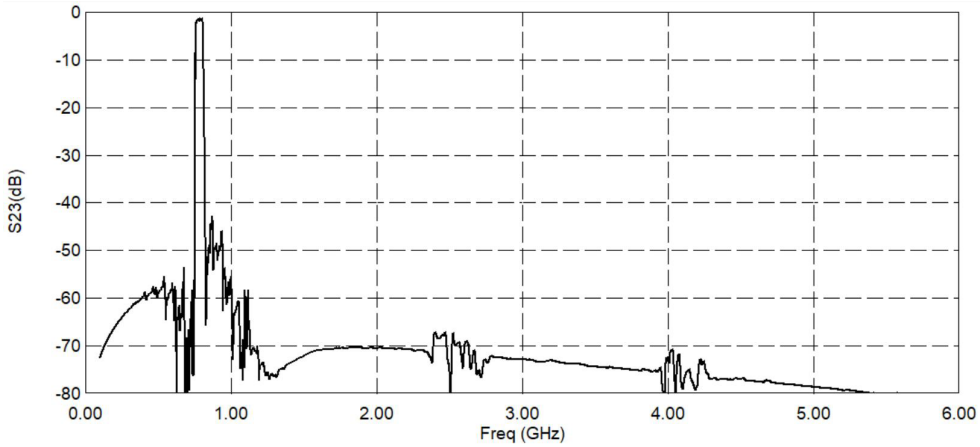


Figure 7 Electrical Characteristics: Tx to Rx.

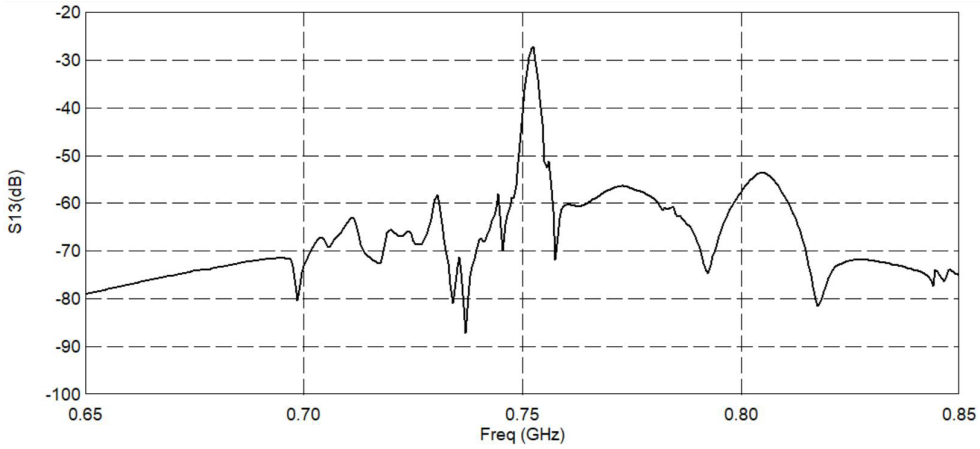


Figure 8 Electrical Characteristics: Tx to Rx.

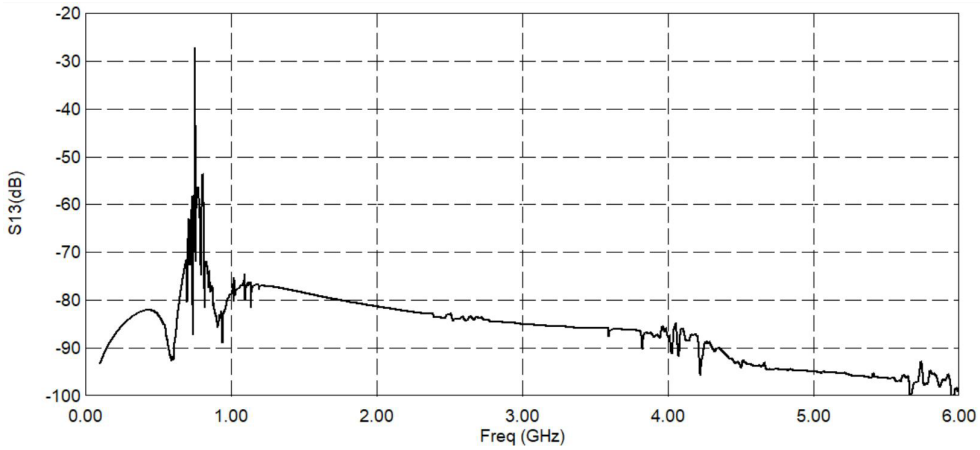
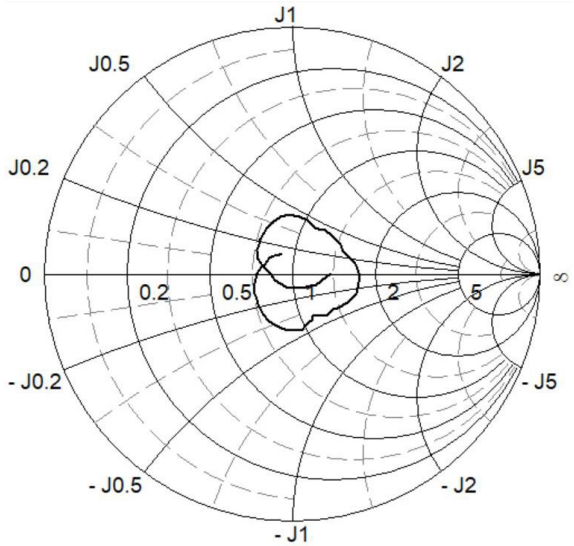
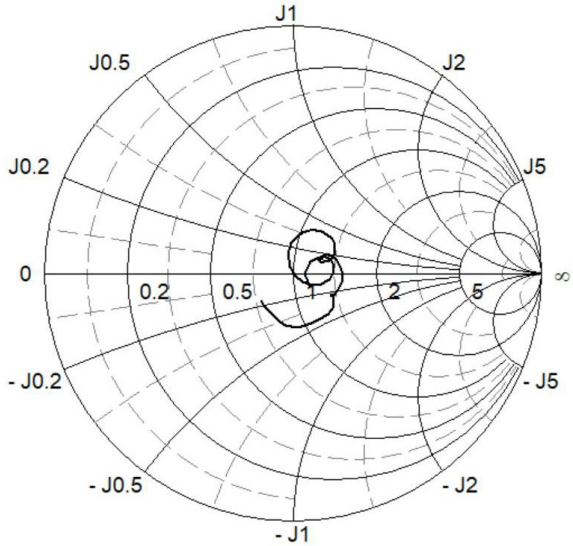


Figure 9 Smith chart

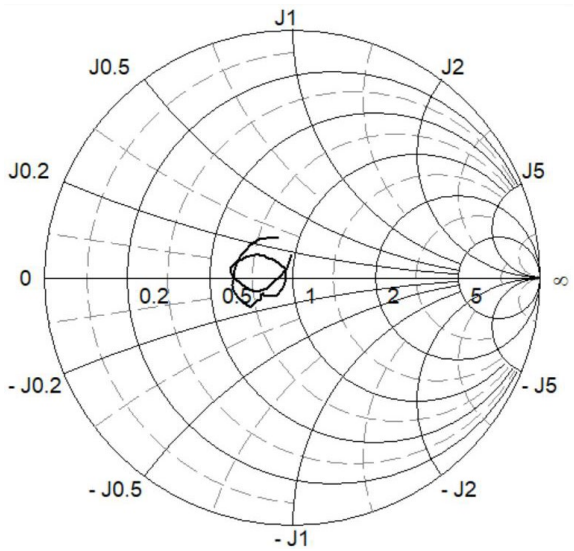
Tx Input Impedance (703MHz to 733MHz)



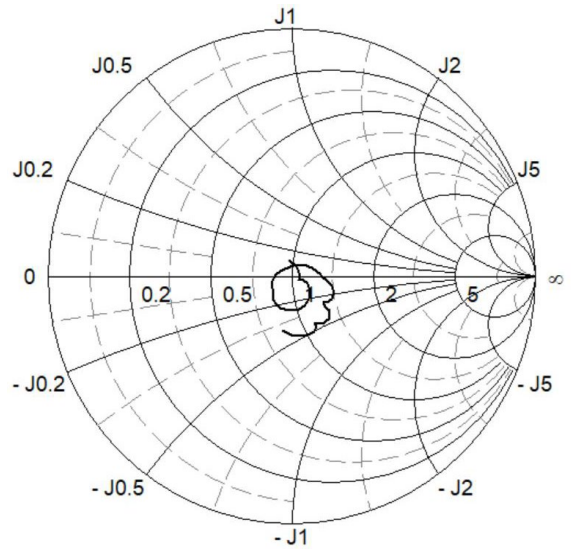
Rx Input Impedance (758MHz to 788MHz)



Ant Input Impedance (Tx Band)

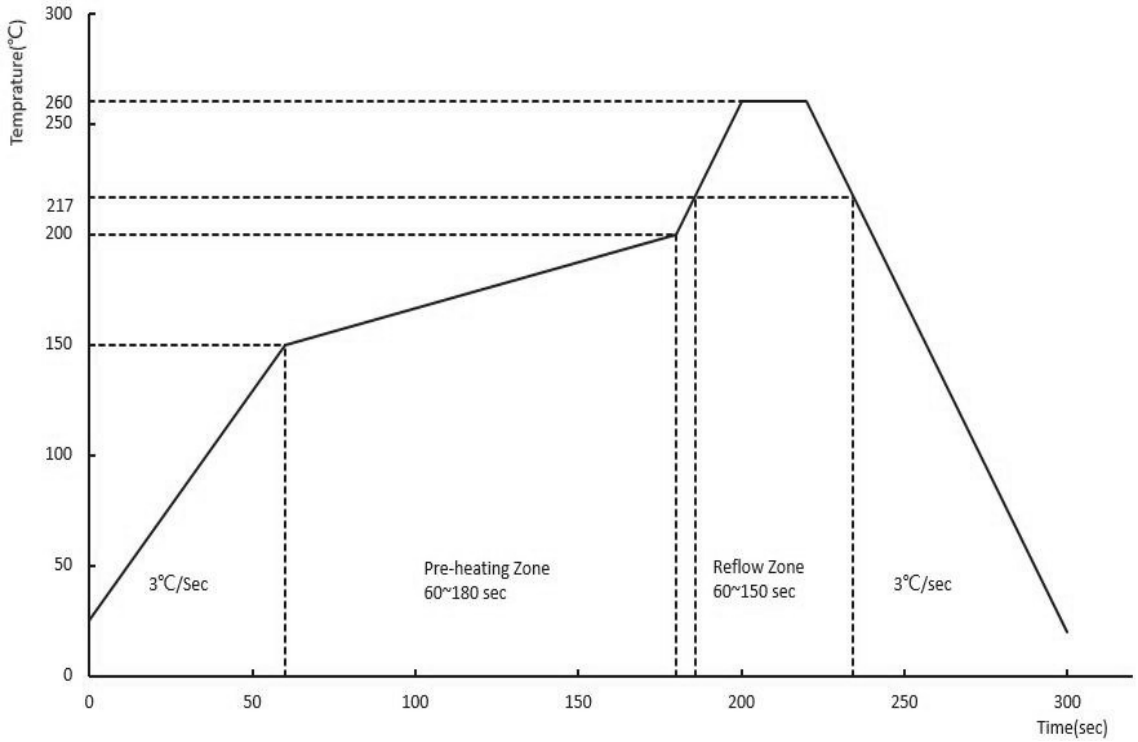


Ant Input Impedance (Rx Band)



Approval	Supervisor	Designer
C. K. Chang	M. Y. Chen	F.L.Lai

Recommended SMT Solder Profile



Reliability

No.	Test item	Test condition	
1	Temperature Storage	Temperature: 85℃±2℃ , Duration: 250h , Recovery time: 2h±0.5h Temperature: -40℃±3℃ , Duration: 250h ,Recovery time: 2h±0.5h	
2	Humidity Test	Conditions: 60℃±2℃ ,90~95%RH	Duration:250h
3	Thermal Shock	Heat cycle conditions: TA=-40℃±3℃, TB=85℃±2℃, t1=t2=30min, Switch time: ≤3min, Cycle time: 100 times, Recovery time: 2h±0.5h.	
4	Vibration Fatigue	Frequency of vibration:10~55Hz Directions: X,Y and Z	Amplitude:1.5mm Duration: 2h
5	Drop Test	Cycle time:10times	Height:1.0m
6	Solder Ability Test	Temperature:245℃±5℃ Depth: DIP--2/3, SMD--1/5	Duration:3.0s--5.0s
7	Resistance to Soldering Heat	Thickness of PCB:1mm , Solder condition: 260℃±5℃ , Duration:10±1s Temperature of Soldering Iron: 350℃±10℃, Duration: 3~4s, Recovery time : 2 ± 0.5h	