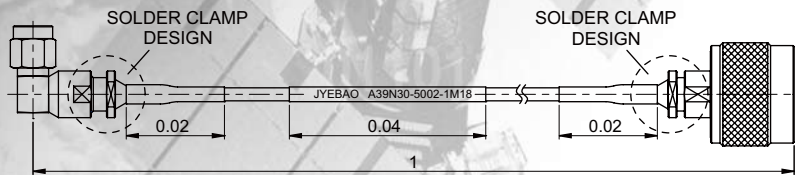


INFORMATION ON TEST CABLES

1. Reliability

Jyebao test cables are manufactured with extra sturdy solder clamp designs that ensure a long life span.



2. RF Performance

2.1 Return loss:

Jyebao test cables are manufactured with precision connectors that guarantee good RF performance. As a rule of thumb the maximum return loss is:

- ◎ -20dB up to 18GHz for test cables with SMA/N straight connectors
- ◎ -18dB up to 18 GHz for test cables with SMA right angle connectors
- ◎ -18dB up to 40GHz for test cables with 2.4/K straight connectors

2.2 Operating frequency:

The smaller the cable diameter is the higher the operating frequency that can be achieved but also the higher the insertion loss. The suitable operating frequency for the 5000 cable series is as follows:

5002: up to 50GHz

5003: up to 40GHz

5004&5005: up to 30GHz

5006& 5007: up to 18GHz

2.3 Phase stability vs flexure

5002 and 5003 cable have a good phase stability. We tested phase stability versus flexure by wrapping the cable around a 5 centimeter mandrel, test results are as follows:

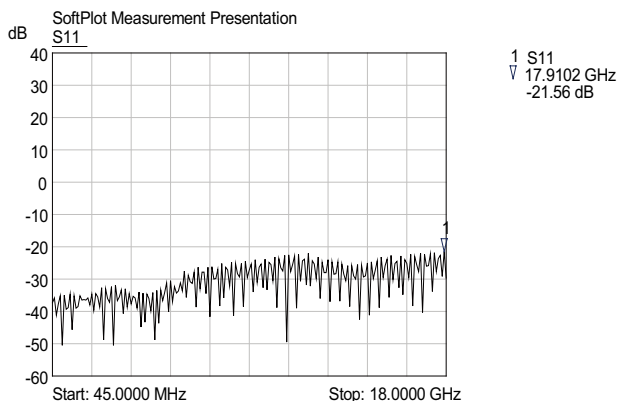
Phase stability vs flexure

Operating Frequency/cable	5002	5003
10GHz	+/-2°	+/-2°
18GHz	+/-6°	+/-4°
30GHz	+/-8°	+/-6°
40GHz	+/-10°	+/-12°

3. Test Reports

Each individual test cable is supplied with a return loss (S11) and insertion loss (S21) test report.

S11 test plot example



4. Standard test cables

Jyebao has a range of standard test cables shown on http://www.jyebao.com.tw/standard_test_cables.php which can be supplied on short notice. They come in 0.5 meter, 1 meter, 1.5 meter and 2 meter lengths.

5. Customized test cables

Jyebao specializes in customized test cables. Please compile the Jyebao part number of the test cable You need or inform us what connector (see list below), cable type, length and operating frequency is required. Upon receiving this information we'll submit a drawing for customer approval. The table below lists Jyebao precision connectors for the 5000 series low loss cables. This list is not exhaustive, if you do not find the connector You need then please ask.

JYEBAO PRECISION CONNECTORS

Connector	Cable	5002	5003	5004	5005	5006	5007
SMA plug straight		SMA3200S-5002	SMA32NP-S402	SMA32NP-L160	SMA32NP-L142	SMA3200S-L335	SMA3200S-0L235
		SMA32NP-0316					
SMA plug right angle		SMA3200S-9405	SMA3200AS-9402	SMA3200S-9L160			SMA3200S-95007
SMA jack straight					SMA8200S-0L142	SMA8200S-L335	SMA8200S-5007
SMA jack bulkhead			SMA8205S-S402		SMA8205S-L142		
N plug straight		N3200S-S405	N3200S-S402		N3200AS-0L142	N3200AS-L335	N3200S-0L235
					N3200S-0L142	N3200S-L335	
N plug right angle			N3200S-9402		N3200S-9L142	N3200SA-9L335	
N jack straight					N8200S-L142	N8200S-5006	
N jack for bulkhead				N8205S-L160	N8205S-L142		
K plug straight		K3200S-5002	K3200S-5003	K3200S-0L160			
K jack straight		K8200S-5002		K8200S-0L160			
TNC plug straight					TNC3200AS-0L142		
MCX plug straight		MCX3300-S405		MCX3200S-L160			
MCX plug right angle		MCX3300-9405					
BNC plug straight					BNC3200-L142		
7/16 plug straight			7/16-3200-5003		7/16-3200S-0L142	7/16-3200-L335	
7/16 jack straight					7/16-8200S-0L142		
PC3.5 plug straight		PC3.5-3200S-5002	PC3.5-3200S-5003		PC3.5-3200S-5005		
PC3.5 jack straight					PC3.5-8200S-5005		
BMA jack straight			BMA8262-S402				
BMA jack right angle		BMA8262-9S405					
SMP plug bulkhead				SMP3205S-L160			
SMP jack					SMP8200S-5005		
2.4 plug straight		2.4-3200S-5002		2.4-3200S-0L160			
2.4 JACK straight		2.4-8200S-5002		2.4-8200S-0L160			
SMS plug straight		SMS3300-5002					

6. Optional armours

All test cables can be supplied with one of the following armours:

6.1 Stainless steel flexible hose:

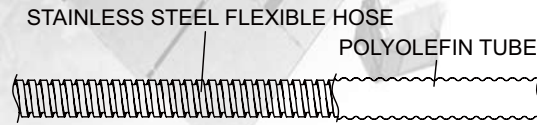
- ⊙ Protects against mechanical damage, pressure, pulling, fire and hot objects.
- ⊙ Suitable for applications of -55°C/+200°C.
- ⊙ Compile a P/N with this armour by adding suffix 'S' to the cable. Eg: A30A30-5005S-1M18

STAINLESS STEEL FLEXIBLE HOSE



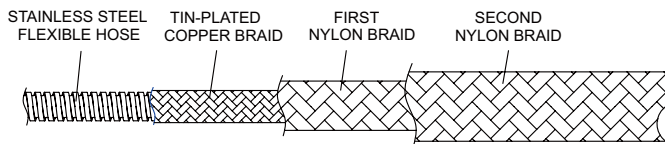
6.2. Stainless steel flexible hose with polyolefin tube:

- ⊙ Protects against mechanical damage, pressure, pulling and gives electrical insulation.
- ⊙ Suitable for applications of -55°C/+125°C.
- ⊙ Allows for color coding (black, white, red, blue, green & yellow polyolefin tubes available).
- ⊙ Compile a P/N with this armour by adding suffix 'BT'(Black tube), 'WT'(White tube), 'RT'(Red tube), 'BL'(Blue tube), 'GT'(Green tube) or 'YT'(Yellow tube) to the cable P/N. Eg: A30A30-5005BT-1M18



6.3. Stainless steel hose with tin plated copper braid & double nylon braid:

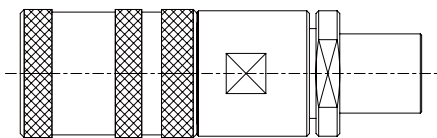
- ⊙ Gives excellent flexibility while at the same time providing protection against mechanical damage, pressure and pulling.
- ⊙ Suitable for applications of -55°C/+80°C.
- ⊙ Compile a P/N with this armour by adding suffix 'N' to the cable P/N. Eg: A30A30-5005N-1M18



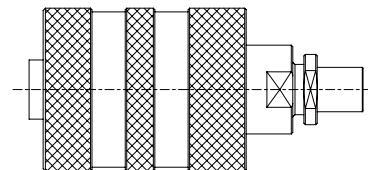
7. Optional snap on connectors with locking mechanism

Frequently mating/unmating test cables is time consuming as one has to screw/unscrew the connectors each time. To reduce the speed of mating/unmating Jyebao has developed unique snap on N&SMA plugs with locking mechanism for its test cables.

Snap on SMA plug design:



Snap on N plug design:



- ⊙ 20000 matings guaranteed
- ⊙ Push on the coupling nut and then give a little turn to ensure a proper mating. Once mated the locking mechanism prevents unmating.
- ⊙ To unlock/unmate simply pull the coupling nut backwards

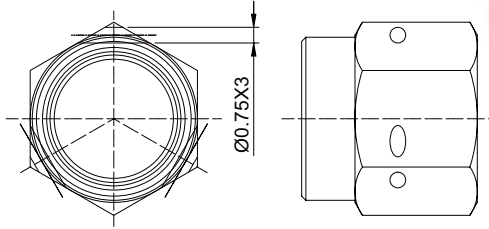
JYEBAO SNAP ON PRECISION CONNECTORS WITH LOCKING MECHANISM

Connector\Cable	5002	5003	5004	5005	5006	5007
SMA snap on plug straight	SMA3200QS-5002	SMA3200QS-5003	SMA3200QS-5004	SMA3200QS-5005	SMA3200QS-5006	SMA3200QS-5007
N snap on plug straight	N3200QS-5002	N3200QS-5003	N3200QS-5004	N3200QS-5005	N3200QS-5006	N3200QS-5007

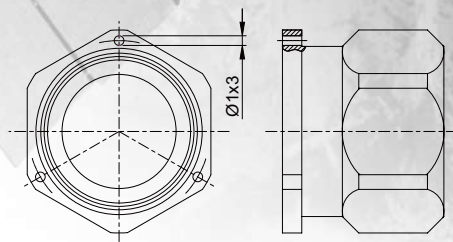
8. Optional coupling nuts with wire lock holes

In some environments test cables must be able to withstand vibration. In such cases one can fix the connectors using wire lock holes on the coupling nuts. Compile a P/N with coupling nuts that have wire lock holes by adding a suffix 'WL' to the cable P/N. Eg: A30A30-5005WL-1M18

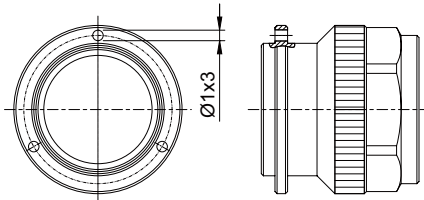
SMA/K/3.5 plug with wire lock holes



N plug with wire lock holes



TNC plug with wire lock holes



9. Optional phase matching

9.1 Information required:

- ⊙ Operating frequency at which the assembly needs phase matched
- ⊙ Phase match tolerance (eg: +/- 10°C)
- ⊙ Indicate whether test cables with adjustable or non-adjustable phase are required

9.2 Test cables with non-adjustable phase

Test cables are delivered phase matched according to customer requirement. Regular precision connectors are used and the phase cannot be adjusted.

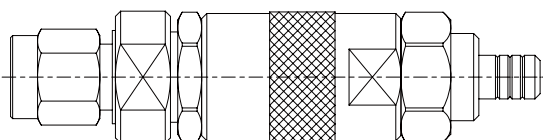
9.3 Test cables with adjustable phase

Test cables are delivered phase matched according to customer requirement using special phase adjustable precision connectors which allow the customer to further adjust/optimize the phase as he sees fit. Using Jyebao phase adjustable precision connectors the phase of the microwave signal can be changed 15° per Ghz up to 18GHz by mechanically varying an adjustment screw.

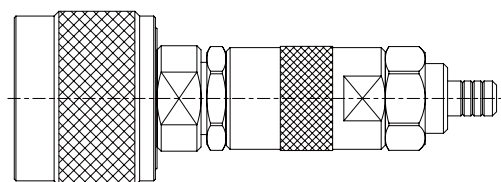
JYEBAO PHASE ADJUSTABLE PRECISION CONNECTORS


Connector \ Cable	5002	5003	5004	5005	5006	5007
SMA plug straight	SMA3200PA-5002	SMA3200PA-5003	SMA3200PA-5004	SMA3200PA-5005	SMA3200PA-5006	SMA3200PA-5007
N plug straight	N3200PA-5002	N3200PA-5003	N3200PA-5004	N3200PA-5005	N3200PA-5006	N3200PA-5007

Phase adjustable SMA plug design



Phase adjustable N plug design





10. *After sales service*

Although our extra sturdy solder clamp designs have a long life span test connectors will wear out over time when mated frequently. Jyebao offers reworking service of its test cables if requested.