

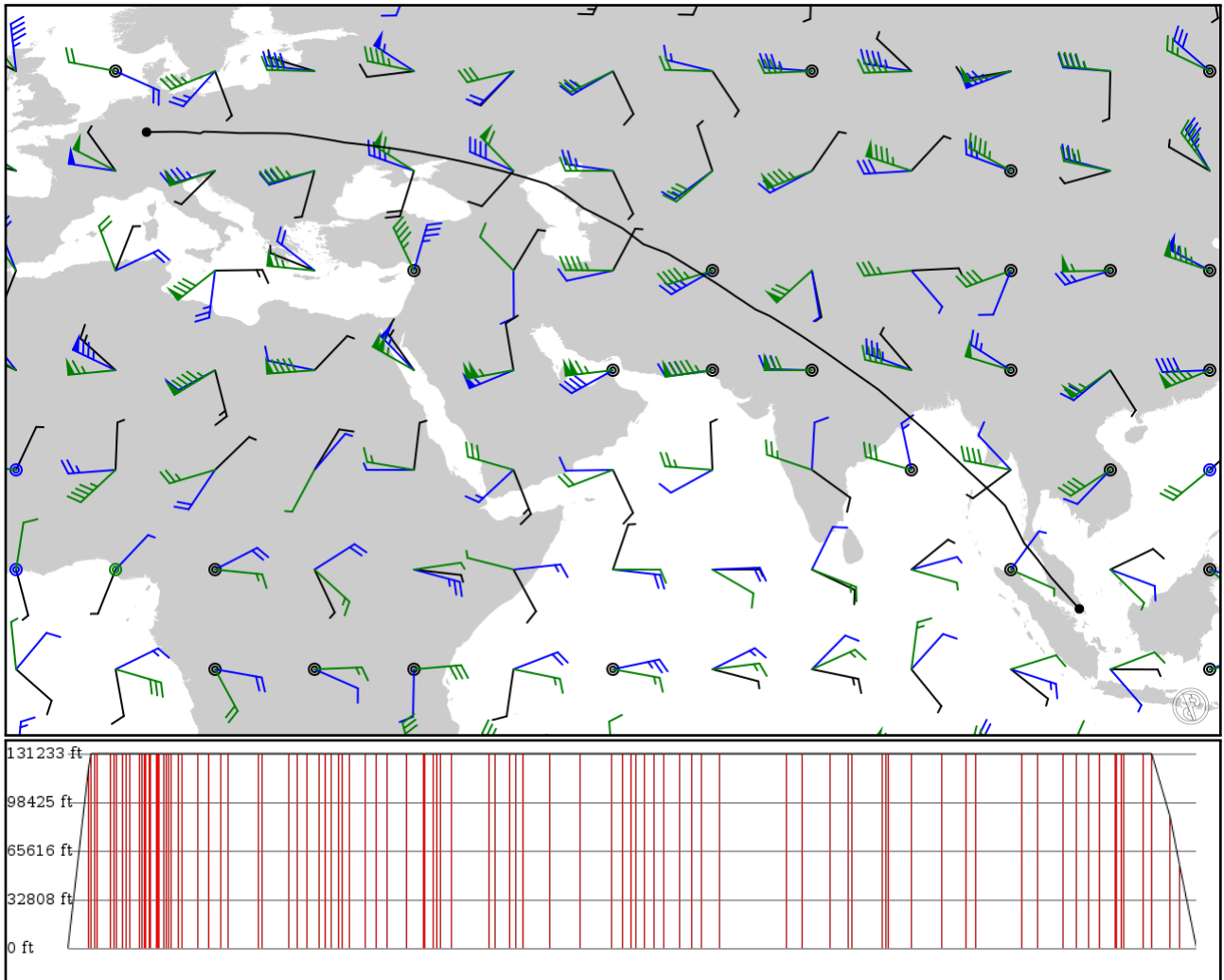
**EDDF**  
Frankfurt

**WSSS**  
Singapore Changi Intl

2024/05/20 0214Z

EDDF LONLI **UL984** OKG **L726** ELMEK LETNA **L984** RAVID **B493** TIKNA **A87** AKT AKT **A87** TIROM **A845** ATASH **A846**  
ABDAN **A909** LEMOD **N644** REGET **J145** DI **A466** JHANG **M875** KAKID **M770** OBMOG **L515** PUT **B579** VPL VPL **W531**  
VIH **R325** REDUK WSSS

5588.44 nm / 10349.80 km



## Notes

Basic altitude profile:

- Ascent Rate: 2500ft/min
- Ascent Speed: 250kts
- Cruise Altitude: 40000ft
- Cruise Speed: 420kts
- Descent Rate: 1500ft/min
- Descent Speed: 250kts

Options:

- Use NATs: yes
- Use PACOTS: yes

- Use low airways: yes
- Use high airways: yes

## Route

Ident Type	Via	Lat Lon	Alt	Dist (nm)	Name
EDDF	-	50.03260	0 ft	-	Frankfurt
APT	-	8.54067	0 m		
LONLI	-	50.07470	36,900 ft	103	-
FIX	-	11.22640	11,247 m		
KULOK	UL984	50.07280	40,000 ft	15	-
FIX	AWY-HI	11.63050	12,192 m		
ABERU	UL984	50.06920	40,000 ft	17	-
FIX	AWY-HI	12.09370	12,192 m		
OKG	UL984	50.06510	40,000 ft	12	CHEB
VOR	AWY-HI	12.40570	12,192 m		
ELMEK	L726	49.90390	40,000 ft	63	-
FIX	AWY-HI	14.02990	12,192 m		
LETNA	-	50.09200	40,000 ft	18	-
FIX	-	14.42220	12,192 m		
BEKVI	L984	50.07340	40,000 ft	11	-
FIX	AWY-HI	14.72240	12,192 m		
PEMUR	L984	50.05470	40,000 ft	31	-
FIX	AWY-HI	15.53820	12,192 m		
DOBIL	L984	50.03870	40,000 ft	15	-
FIX	AWY-HI	15.93740	12,192 m		
ETUDA	L984	50.01330	40,000 ft	22	-
FIX	AWY-HI	16.50730	12,192 m		
RIBSI	L984	49.95380	40,000 ft	44	-
FIX	AWY-HI	17.66180	12,192 m		
SOPAV	L984	49.93090	40,000 ft	15	-
FIX	AWY-HI	18.05240	12,192 m		
PADKA	L984	49.93390	40,000 ft	8	-
FIX	AWY-HI	18.28330	12,192 m		
LAVPI	L984	49.93560	40,000 ft	6	-
FIX	AWY-HI	18.45080	12,192 m		
NOMIX	L984	49.93970	40,000 ft	18	-
FIX	AWY-HI	18.92310	12,192 m		
USALO	L984	49.94030	40,000 ft	5	-
FIX	AWY-HI	19.06470	12,192 m		
SKAVI	L984	49.94030	40,000 ft	32	-
FIX	AWY-HI	19.90000	12,192 m		
XEVBA	L984	49.93970	40,000 ft	7	-
FIX	AWY-HI	20.08140	12,192 m		
MOKMU	L984	49.93940	40,000 ft	2	-
FIX	AWY-HI	20.14080	12,192 m		
GEVNA	L984	49.93500	40,000 ft	22	-
FIX	AWY-HI	20.72470	12,192 m		
LUXAR	L984	49.93000	40,000 ft	17	-
FIX	AWY-HI	21.17530	12,192 m		
NATIX	L984	49.92670	40,000 ft	8	-
FIX	AWY-HI	21.38360	12,192 m		
ATKEK	L984	49.92170	40,000 ft	11	-
FIX	AWY-HI	21.68390	12,192 m		
VAREN	L984	49.89940	40,000 ft	38	-
FIX	AWY-HI	22.66830	12,192 m		
DIBED	L984	49.88830	40,000 ft	15	-
FIX	AWY-HI	23.05830	12,192 m		
GORKU	L984	49.60530	40,000 ft	79	-

Ident Type	Via	Lat Lon	Alt	Dist (nm)	Name
FIX	AWY-HI	25.07220	12,192 m		
NALAD	L984	49.38830	40,000 ft	55	-
FIX	AWY-HI	26.45170	12,192 m		
KOROP	L984	49.15000	40,000 ft	56	-
FIX	AWY-HI	27.84500	12,192 m		
NIROV	L984	48.96640	40,000 ft	41	-
FIX	AWY-HI	28.84920	12,192 m		
LORDU	L984	48.52440	40,000 ft	150	-
FIX	AWY-HI	32.60140	12,192 m		
OSLAN	L984	48.47140	40,000 ft	15	-
FIX	AWY-HI	32.98440	12,192 m		
BULIG	L984	47.96670	40,000 ft	132	-
FIX	AWY-HI	36.21670	12,192 m		
RAVID	L984	47.74890	40,000 ft	42	-
FIX	AWY-HI	37.22530	12,192 m		
FASAD	B493	47.55500	40,000 ft	45	-
FIX	AWY-HI	38.31330	12,192 m		
RND	B493	47.25210	40,000 ft	63	ROSTOV-NA-DONU
VOR	AWY-HI	39.81330	12,192 m		
OGURA	B493	47.12470	40,000 ft	27	-
FIX	AWY-HI	40.44830	12,192 m		
GINSA	B493	46.98470	40,000 ft	27	-
FIX	AWY-HI	41.09170	12,192 m		
ARLEB	B493	46.77970	40,000 ft	39	-
FIX	AWY-HI	42.00000	12,192 m		
USEMA	B493	46.69970	40,000 ft	14	-
FIX	AWY-HI	42.34170	12,192 m		
TIKNA	B493	46.47970	40,000 ft	40	-
FIX	AWY-HI	43.26330	12,192 m		
LUTIN	A87	46.02970	40,000 ft	78	-
FIX	AWY-HI	45.03530	12,192 m		
TETMA	A87	45.71670	40,000 ft	52	-
FIX	AWY-HI	46.19530	12,192 m		
LABUG	A87	45.35830	40,000 ft	57	-
FIX	AWY-HI	47.45860	12,192 m		
AZABI	A87	44.74000	40,000 ft	94	-
FIX	AWY-HI	49.50000	12,192 m		
AKT	A87	43.87230	40,000 ft	85	AKTAU
VOR	AWY-HI	51.06440	12,192 m		
AKT	-	43.85860	40,000 ft	1	AKTAU VOR-DME
DME	-	51.10190	12,192 m		
BALIG	A87	43.32890	40,000 ft	45	-
FIX	AWY-HI	51.83830	12,192 m		
GIRUL	A87	43.14060	40,000 ft	15	-
FIX	AWY-HI	52.09500	12,192 m		
INRED	A87	42.87640	40,000 ft	22	-
FIX	AWY-HI	52.45190	12,192 m		
TIROM	A87	42.24280	40,000 ft	53	-
FIX	AWY-HI	53.28890	12,192 m		
BEDEV	A845	40.52500	40,000 ft	183	-
FIX	AWY-HI	56.67030	12,192 m		
ATASH	A845	40.22780	40,000 ft	30	-
FIX	AWY-HI	57.21940	12,192 m		
DOKAN	A846	39.40970	40,000 ft	70	-
FIX	AWY-HI	58.30610	12,192 m		
MAXAT	A846	39.06860	40,000 ft	29	-

Ident Type	Via	Lat Lon	Alt	Dist (nm)	Name
FIX	AWY-HI	58.75920	12,192 m		
ABDAN	A846	38.59500	40,000 ft	40	-
FIX	AWY-HI	59.36670	12,192 m		
UTAM	A909	37.62170	40,000 ft	133	-
FIX	AWY-HI	61.89670	12,192 m		
LEMOD	A909	36.16670	40,000 ft	144	-
FIX	AWY-HI	64.29170	12,192 m		
VUVEN	N644	34.54170	40,000 ft	161	-
FIX	AWY-HI	66.92500	12,192 m		
NEVIV	N644	33.98000	40,000 ft	54	-
FIX	AWY-HI	67.78330	12,192 m		
PATOX	N644	33.54830	40,000 ft	41	-
FIX	AWY-HI	68.42000	12,192 m		
MESRA	N644	33.27750	40,000 ft	25	-
FIX	AWY-HI	68.79890	12,192 m		
DOBAT	N644	32.86670	40,000 ft	40	-
FIX	AWY-HI	69.43330	12,192 m		
REGET	N644	32.37000	40,000 ft	48	-
FIX	AWY-HI	70.18310	12,192 m		
DI	J145	31.91260	40,000 ft	45	DERA ISMAIL KHAN
VOR	AWY-HI	70.88570	12,192 m		
JHANG	A466	31.26670	40,000 ft	82	-
FIX	AWY-HI	72.29940	12,192 m		
NIKET	M875	30.68190	40,000 ft	60	-
FIX	AWY-HI	73.25830	12,192 m		
GUGAL	M875	30.24170	40,000 ft	45	-
FIX	AWY-HI	73.96580	12,192 m		
BUTOP	M875	29.32920	40,000 ft	92	-
FIX	AWY-HI	75.39890	12,192 m		
IGONA	M875	25.96670	40,000 ft	327	-
FIX	AWY-HI	80.25830	12,192 m		
DOMET	M875	25.14170	40,000 ft	81	-
FIX	AWY-HI	81.44170	12,192 m		
LAPAN	M875	23.73190	40,000 ft	138	-
FIX	AWY-HI	83.43560	12,192 m		
DADSO	M875	22.75280	40,000 ft	86	-
FIX	AWY-HI	84.57640	12,192 m		
AGROM	M875	22.52920	40,000 ft	19	-
FIX	AWY-HI	84.83330	12,192 m		
MAVLA	M875	20.82080	40,000 ft	149	-
FIX	AWY-HI	86.79170	12,192 m		
KAKID	M875	20.64330	40,000 ft	15	-
FIX	AWY-HI	86.99500	12,192 m		
BUMRO	M770	20.47080	40,000 ft	15	-
FIX	AWY-HI	87.20000	12,192 m		
BUBKO	M770	19.18440	40,000 ft	113	-
FIX	AWY-HI	88.66420	12,192 m		
DABEN	M770	17.40690	40,000 ft	151	-
FIX	AWY-HI	90.54580	12,192 m		
MEPEL	M770	16.03330	40,000 ft	117	-
FIX	AWY-HI	92.00000	12,192 m		
SADUS	M770	15.42810	40,000 ft	51	-
FIX	AWY-HI	92.63110	12,192 m		
LALAT	M770	12.84690	40,000 ft	224	-
FIX	AWY-HI	95.41890	12,192 m		
OBMOG	M770	11.90190	40,000 ft	80	-

Ident Type	Via	Lat Lon	Alt	Dist (nm)	Name
FIX	AWY-HI	96.39190	12,192 m		
IKULA	L515	10.00190	40,000 ft	127	-
FIX	AWY-HI	97.35390	12,192 m		
MUDMA	L515	9.01386	40,000 ft	66	-
FIX	AWY-HI	97.85430	12,192 m		
PUT	L515	8.11523	40,000 ft	60	PHUKET
VOR	AWY-HI	98.30630	12,192 m		
NUTGU	B579	7.46748	40,000 ft	50	-
FIX	AWY-HI	98.83880	12,192 m		
DALAN	B579	6.46889	40,000 ft	77	-
FIX	AWY-HI	99.65560	12,192 m		
VPL	B579	6.35436	40,000 ft	8	LANGKAWI
VOR	AWY-HI	99.74550	12,192 m		
VPL	-	6.35542	40,000 ft	0	LANGKAWI VOR-DME
DME	-	99.74740	12,192 m		
ANDOK	W531	6.02220	40,000 ft	25	-
FIX	AWY-HI	100.00000	12,192 m		
VILAT	W531	5.89110	40,000 ft	9	-
FIX	AWY-HI	100.09900	12,192 m		
VIH	W531	4.57361	40,000 ft	99	IPOH
VOR	AWY-HI	101.09400	12,192 m		
ANSOM	R325	4.07330	40,000 ft	40	-
FIX	AWY-HI	101.53900	12,192 m		
LATUK	R325	2.92110	27,200 ft	92	-
FIX	AWY-HI	102.56300	8,291 m		
REDUK	R325	2.33258	17,100 ft	47	-
FIX	AWY-HI	103.08300	5,212 m		
WSSS	-	1.35551	0 ft	79	Singapore Changi Intl
APT	-	103.98800	0 m		

## EDDF

Region: GERMANY - CIVIL  
Timezone: EUROPE/BERLIN  
Runways: 4

Elevation: 362 ft / 110 m  
Location: 50.032600 8.540670  
Magnetic Var: 3.177 E

## METAR

EDDF 200150Z AUTO VRB02KT CAVOK 09/09 Q1011 NOSIG

## TAF

TAF EDDF 192300Z 2000/2106 22004KT CAVOK TEMPO 2000/2006 2500 BR BKN005 PROB30 TEMPO 2002/2005 0500 FG VV001 PROB30

## Frequencies

REC - 118.02 MHz - ATIS ARRIVAL  
GND - 121.80 MHz - GROUND  
GND - 121.70 MHz - APRON RAMP/TAXI  
GND - 121.85 MHz - APRON RAMP/TAXI  
TWR - 118.77 MHz - TOWER  
TWR - 124.85 MHz - TOWER  
TWR - 136.50 MHz - TOWER  
APP - 127.27 MHz - FRANKFURT DIRECT  
APP - 125.35 MHz - LANGEN RADAR  
APP - 120.80 MHz - LANGEN RADAR  
APP - 136.12 MHz - LANGEN RADAR

REC - 118.72 MHz - ATIS DEPARTURE  
GND - 121.65 MHz - APRON RAMP/TAXI  
GND - 121.95 MHz - APRON RAMP/TAXI  
GND - 121.75 MHz - APRON RAMP/TAXI  
TWR - 119.90 MHz - TOWER  
TWR - 127.32 MHz - TOWER  
CLD - 121.90 MHz - CLEARANCE DELIVERY  
APP - 118.50 MHz - FRANKFURT DIRECT  
APP - 126.55 MHz - LANGEN RADAR  
APP - 120.15 MHz - LANGEN RADAR  
APP - 119.02 MHz - LANGEN RADAR

## Runways

Ident	Width	Length	Bearing (true) (mag)	Surface	Threshold Offset	Overrun Length
07L	148 ft	9,194 ft	69.56	CONCRETE	0 ft	0 ft
	45 m	2,802 m	66.39		0 m	0 m
25R	148 ft	9,194 ft	249.59	CONCRETE	0 ft	0 ft
	45 m	2,802 m	246.41		0 m	0 m
07C	197 ft	13,134 ft	69.57	ASPHALT	0 ft	203 ft
	60 m	4,003 m	66.39		0 m	62 m
25C	197 ft	13,134 ft	249.61	ASPHALT	0 ft	935 ft
	60 m	4,003 m	246.43		0 m	285 m
07R	148 ft	13,134 ft	69.59	ASPHALT	0 ft	213 ft
	45 m	4,003 m	66.41		0 m	65 m
25L	148 ft	13,134 ft	249.63	ASPHALT	0 ft	1,775 ft
	45 m	4,003 m	246.45		0 m	541 m
18	148 ft	13,083 ft	179.64	ASPHALT	0 ft	0 ft
	45 m	3,988 m	176.46		0 m	0 m
36	148 ft	13,083 ft	359.64	ASPHALT	0 ft	121 ft
	45 m	3,988 m	356.46		0 m	37 m

## Approach Nav aids

Runway	Type	Ident	Frequency	Range	Bearing (true) (mag)	Slope	Elevation
07L	DME	IFNE	111.75 MHz	18 nm	-	-	357 ft
				33 km	-		357 m
25C	DME	IFCW	111.55 MHz	18 nm	-	-	364 ft
				33 km	-		364 m
25R	DME	IFNW	111.35 MHz	18 nm	-	-	357 ft
				33 km	-		357 m

Runway	Type	Ident	Frequency	Range	Bearing (true) (mag)	Slope	Elevation
07C	LOC-ILS	IFCE	110.55 MHz	18 nm	69.59	-	362 ft
				33 km	66.41		362 m
07L	LOC-ILS	IFNE	111.75 MHz	18 nm	69.58	-	362 ft
				33 km	66.40		362 m
07R	LOC-ILS	IFSE	110.95 MHz	18 nm	69.61	-	362 ft
				33 km	66.43		362 m
25C	LOC-ILS	IFCW	111.55 MHz	18 nm	249.59	-	362 ft
				33 km	246.41		362 m
25L	LOC-ILS	IFSW	111.15 MHz	18 nm	249.61	-	362 ft
				33 km	246.43		362 m
25R	LOC-ILS	IFNW	111.35 MHz	18 nm	249.58	-	362 ft
				33 km	246.40		362 m
07C	GS	IFCE	110.55 MHz	10 nm	69.59	3.00	362 ft
				19 km	66.41		362 m
07L	GS	IFNE	111.75 MHz	10 nm	69.58	3.00	362 ft
				19 km	66.40		362 m
07R	GS	IFSE	110.95 MHz	10 nm	69.61	3.00	362 ft
				19 km	66.43		362 m
25C	GS	IFCW	111.55 MHz	10 nm	249.59	3.00	362 ft
				19 km	246.41		362 m
25L	GS	IFSW	111.15 MHz	10 nm	249.61	3.00	362 ft
				19 km	246.43		362 m
25R	GS	IFNW	111.35 MHz	10 nm	249.58	3.00	362 ft
				19 km	246.40		362 m



## WSSS

Region: SINGAPORE

Timezone: ASIA/SINGAPORE

Runways: 2

Elevation: 20 ft / 6 m

Location: 1.355510 103.988000

Magnetic Var: 0.198 E

## METAR

WSSS 200200Z 19013KT 5000 -TSRA FEW010 FEW015CB SCT016TCU BKN150 26/25 Q1009 TEMPO TL0230 2000 +TSRA BECMG FM0250

## TAF

TAF WSSS 192300Z 2000/2106 16009KT 9999 FEW015 SCT020 TEMPO 2000/2003 3000 TSRA FEW012CB BKN015

## Frequencies

DEP - 123.70 MHz - SINGAPORE RADAR	DEP - 127.30 MHz - SINGAPORE RADAR
DEP - 133.80 MHz - SINGAPORE RADAR	DEP - 133.25 MHz - SINGAPORE RADAR
DEP - 135.80 MHz - SINGAPORE RADAR	DEP - 134.20 MHz - SINGAPORE RADAR
DEP - 133.35 MHz - SINGAPORE RADAR	DEP - 134.40 MHz - SINGAPORE RADAR
DEP - 128.10 MHz - SINGAPORE RADAR	DEP - 255.40 MHz - SINGAPORE RADAR
DEP - 124.05 MHz - SINGAPORE RADAR	APP - 120.30 MHz - SINGAPORE APPROACH
APP - 124.60 MHz - SINGAPORE APPROACH	APP - 119.30 MHz - SINGAPORE ARRIVAL
TWR - 118.60 MHz - SINGAPORE TOWER	TWR - 118.25 MHz - SINGAPORE TOWER
GND - 124.30 MHz - SINGAPORE GROUND	GND - 121.72 MHz - SINGAPORE GROUND
GND - 121.85 MHz - SINGAPORE GROUND	GND - 121.00 MHz - SINGAPORE GROUND EMERGENCY
GND - 122.55 MHz - SINGAPORE GROUND	CLD - 121.65 MHz - SINGAPORE DELIVERY
CLD - 119.60 MHz - SINGAPORE DELIVERY	REC - 128.60 MHz -
REC - 128.02 MHz -	CHANGI AIRPORT INFORMATION (D-ATIS)
CHANGI AIRPORT ARRIVAL INFORMATION	

## Runways

Ident	Width	Length	Bearing (true) (mag)	Surface	Threshold Offset	Overrun Length
02L	197 ft	13,187 ft	22.88	ASPHALT	0 ft	0 ft
	60 m	4,020 m	22.68		0 m	0 m
20R	197 ft	13,187 ft	202.88	ASPHALT	2,428 ft	390 ft
	60 m	4,020 m	202.68		740 m	119 m
02C	197 ft	13,187 ft	22.88	ASPHALT	0 ft	0 ft
	60 m	4,020 m	22.68		0 m	0 m
20C	197 ft	13,187 ft	202.88	ASPHALT	0 ft	0 ft
	60 m	4,020 m	202.68		0 m	0 m

## Approach Nav aids

Runway	Type	Ident	Frequency	Range	Bearing (true) (mag)	Slope	Elevation
02C	DME	ICE	108.30 MHz	18 nm	-	-	15 ft
				33 km	-		15 m
02L	DME	ICW	110.90 MHz	18 nm	-	-	20 ft
				33 km	-		20 m
20C	DME	ICC	109.70 MHz	18 nm	-	-	15 ft
				33 km	-		15 m
20R	DME	ICH	108.90 MHz	18 nm	-	-	22 ft
				33 km	-		22 m
02C	LOC-ILS	ICE	108.30 MHz	18 nm	22.88	-	20 ft
				33 km	22.68		20 m
02L	LOC-ILS	ICW	110.90 MHz	18 nm	22.88	-	20 ft

Runway	Type	Ident	Frequency	Range	Bearing (true) (mag)	Slope	Elevation
				33 km	22.68		20 m
20C	LOC-ILS	ICC	109.70 MHz	18 nm	202.88	-	20 ft
				33 km	202.68		20 m
20R	LOC-ILS	ICH	108.90 MHz	18 nm	202.88	-	20 ft
				33 km	202.68		20 m
02C	GS	ICE	108.30 MHz	10 nm	22.88	3.00	20 ft
				19 km	22.68		20 m
02L	GS	ICW	110.90 MHz	10 nm	22.88	3.00	20 ft
				19 km	22.68		20 m
20C	GS	ICC	109.70 MHz	10 nm	202.88	3.00	20 ft
				19 km	202.68		20 m
20R	GS	ICH	108.90 MHz	10 nm	202.88	3.00	20 ft
				19 km	202.68		20 m